

Location Information

Legal Location:SE SE NE SE SEC. 13, T. 035 N., R. 25 W.
County:TODD Location:035N-25W-13DADD
Basin:KEYA PAHA Latitude:43 00' 24"
Hydrologic Unit Code:10150006 Longitude:100 11' 55"
Land Owner: Ground Surface Elevation (ft.):2443 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:08/17/1993 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-93-53 Total Drill Hole Depth (ft.):278.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

THIS TEST HOLE WAS PLUGGED WITH HIGH SOLIDS BENTONITE GROUT FROM 278 TO 8 FEET, FROM 8 TO 8 FEET WITH CEMENT GROUT AND FROM 3 FEET TO GROUND SURFACE WITH NATIVE SOILS. HOLE LOST AND ABANDONED DUE TO EXCESSIVE WATER LOSS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2443.00 - 2391.00	0.0 - 52.0	SAND, LIGHT-BROWN TO TAN, FINE TO VERY FINE, ROUNDED TO SUBROUNDED; HIGHLY QUARTZOSE, SOME LITHIC AND FELDSPAR FRAGMENTS (DUNE SANDS)
2391.00 - 2357.00	52.0 - 86.0	SANDSTONE AND SILTSTONE, PALE-GREENISH- BROWN, FINE SAND (OGALLALA GROUP)
2357.00 - 2352.00	86.0 - 91.0	SAND, TAN, MEDIUM, ROUNDED TO SUBROUNDED; HIGHLY QUARTZOSE
2352.00 - 2313.00	91.0 - 130.0	SANDSTONE, TAN, FINE, ROUNDED TO SUBROUNDED; QUARTZOSE
2313.00 - 2277.00	130.0 - 166.0	SAND, TAN, FINE TO MEDIUM, ROUNDED TO SUBROUNDED; QUARTZOSE
2277.00 - 2271.00	166.0 - 172.0	SILTSTONE, LIGHT-GREENISH-GRAY, MASSIVE
2271.00 - 2257.00	172.0 - 186.0	SAND, LIGHT-GREENISH-GRAY, FINE TO MEDIUM; QUARTZOSE
2257.00 - 2249.00	186.0 - 194.0	SILTSTONE, LIGHT-GREENISH-GRAY, MASSIVE
2249.00 - 2192.00	194.0 - 251.0	SAND, GREENISH-GRAY, FINE; QUARTZOSE
2192.00 - 2165.00	251.0 - 278.0	SILTSTONE, GREENISH-GRAY TO WHITE; SOFT TO HARD

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Location Information

Legal Location:SE SE NE SE SEC. 13, T. 035 N., R. 25 W.
County:TODD Location:035N-25W-13DADD 1
Basin:KEYA PAHA Latitude:43 00' 24"
Hydrologic Unit Code:10150006 Longitude:100 11' 55"
Land Owner: Ground Surface Elevation (ft.):2443 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:08/18/1993 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-93-54 Total Drill Hole Depth (ft.):163.0
Samples:

Well Information

SDGS Well Name: R20-93-54 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2445.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):165.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

FILTER PACK CONSISTED OF 500 LBS 0.65-0.75 MM QUARTZ SAND PLACED AT 163 TO 143 FEET.
HOLE COLLAPSED AROUND CASING. GRANULAR BENTONITE PLACED FROM 12 TO 10 FEET. CEMENT
GROUT PLACED FROM 10 FEET TO SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2443.00 - 2391.00	0.0 - 52.0	SAND, LIGHT-BROWN TO TAN, FINE TO VERY FINE, ROUNDED TO SUBROUNDED; HIGHLY QUARTZOSE, SOME LITHIC FRAGMENTS
2391.00 - 2357.00	52.0 - 86.0	SANDSTONE AND SILTSTONE, PALE-GREENISH- BROWN, FINE SANDSTONE
2357.00 - 2352.00	86.0 - 91.0	SAND, TAN, MEDIUM, ROUNDED TO SUBROUNDED; HIGHLY QUARTZOSE
2352.00 - 2282.00	91.0 - 161.0	SAND, TAN, FINE TO MEDIUM, ROUNDED TO SUBROUNDED; QUARTZOSE, POORLY CEMENTED IN UPPER 30 TO 40 FEET
2282.00 - 2280.00	161.0 - 163.0	SILTSTONE AND SANDSTONE, TAN TO DARK-TAN

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Location Information

Legal Location:SE SE NE SE SEC. 13, T. 035 N., R. 25 W.
County:TODD Location:035N-25W-13DADD 2
Basin:KEYA PAHA Latitude:43 00' 24"
Hydrologic Unit Code:10150006 Longitude:100 11' 55"
Land Owner: Ground Surface Elevation (ft.):2443 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:08/24/1993 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-93-55 Total Drill Hole Depth (ft.):413.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

TEST HOLE PLUGGED WITH HIGH SOLIDS BENTONITE GROUT FROM 413 TO 8 FEET, WITH CEMENT GROUT FROM 8 TO 3 FEET AND WITH NATIVE SOILS FROM 3 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2443.00 - 2343.00	0.0 - 100.0	SAND, LIGHT-BROWN TO TAN, FINE TO VERY FINE, SUBROUNDED TO ROUNDED; HIGHLY QUARTZOSE, FEW LITHIC FRAGMENTS
2343.00 - 2333.00	100.0 - 110.0	SAND AND SILTSTONE, TAN SAND TO DARK-GREENISH-BROWN SILTSTONE, FINE TO VERY FINE SAND
2333.00 - 2303.00	110.0 - 140.0	SAND, LIGHT-BROWN TO TAN, FINE TO VERY FINE, SUBROUNDED TO ROUNDED; HIGHLY QUARTZOSE, FEW LITHIC FRAGMENTS
2303.00 - 2293.00	140.0 - 150.0	SILTSTONE, LIGHT-BROWNISH-TAN, MASSIVE
2293.00 - 2277.00	150.0 - 166.0	SAND, TAN, FINE TO MEDIUM, ROUNDED TO SUBROUNDED; QUARTZOSE
2277.00 - 2251.00	166.0 - 192.0	SILTSTONE, LIGHT-GREENISH-TAN, MASSIVE
2251.00 - 2203.00	192.0 - 240.0	SAND, LIGHT-GREENISH-GRAY, VERY FINE TO FINE; QUARTZOSE, SOME GREENISH-GRAY SILTSTONE FROM 220 TO 240 FEET
2203.00 - 2175.00	240.0 - 268.0	CLAY, LIGHT-GREENISH-GRAY, MASSIVE; SOME SILTSTONE
2175.00 - 2138.00	268.0 - 305.0	SILTSTONE AND CLAYSTONE, LIGHT-GREENISH- GRAY, MASSIVE; SOFT TO HARD
2138.00 - 2103.00	305.0 - 340.0	CLAYSTONE AND SILTSTONE, LIGHT-GREENISH- GRAY,

MASSIVE; HARD, SANDY AT 305 FEET

2103.00 - 2090.00	340.0 - 353.0	SILTSTONE, LIGHT-GREENISH-GRAY TO RED- BROWN, MASSIVE; SOME CLAY
2090.00 - 2065.00	353.0 - 378.0	SILTSTONE AND CLAYSTONE, LIGHT-GREENISH- GRAY TO GRAY-BROWN, MASSIVE
2065.00 - 2038.00	378.0 - 405.0	CLAYSTONE, ALTERNATING LAYERS OF LIGHT- GREENISH-GRAY, PINKISH-TAN AND WHITE, SILTY, MASSIVE
2038.00 - 2030.00	405.0 - 413.0	CLAY, DARK-GRAY; ORGANIC (PIERRE SHALE)

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Location Information

Legal Location:SW NW NW NW SEC. 20, T. 035 N., R. 25 W.
County:TODD Location:035N-25W-20BBBC
Basin:KEYA PAHA Latitude:43 00' 00"
Hydrologic Unit Code:10150006 Longitude:100 17' 48"
Land Owner: Ground Surface Elevation (ft.):2492 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:04/25/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-02 Total Drill Hole Depth (ft.):50.0
Samples:

Well Information

SDGS Well Name: R2-94-02 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2494.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):46.5 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2492.00 - 2452.00	0.0 - 40.0	SANDSTONE, PALE-GREENISH-YELLOW, WELL-ROUNDED TO ROUNDED, QUARTZOSE; NONCALCAREOUS, VARIABLY CEMENTED, SOME THIN SILTSTONE LENSES, SOME LIGHT-GRAY CHERT NODULES BELOW 20 FEET
2452.00 - 2442.00	40.0 - 50.0	SANDSTONE, GRAYISH-YELLOW, VERY SILTY, VERY FINE-GRAINED, SUBROUNDED TO SUBANGULAR, QUARTZOSE; SLIGHTLY CALCAREOUS, SOME LIGHT-OLIVE SILTSTONE NODULES 0.25 INCHES IN DIAMETER, SOME ASH-RICH LENSES, WHITE CHERT LAYER WITH FINE, BLACK, MANGANESE DENDRITES AT 50 FEET

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Location Information

Legal Location:SW NW NW NW SEC. 20, T. 035 N., R. 25 W.
County:TODD Location:035N-25W-20BBBC 1
Basin:KEYA PAHA Latitude:43 00' 00"
Hydrologic Unit Code:10150006 Longitude:100 17' 48"
Land Owner: Ground Surface Elevation (ft.):2492 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:04/26/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-03 Total Drill Hole Depth (ft.):552.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2492.00 - 2452.00	0.0 - 40.0	SANDSTONE, PALE-GREEISH-YELLOW, WELL-ROUNDED TO ROUNDED, QUARTZOSE; NONCALCAREOUS, VARIABLY CEMENTED, SOME THIN SILTSTONE LENSES, SOME LIGHT-GRAY CHERT NODULES BELOW 20 FEET
2452.00 - 2434.00	40.0 - 58.0	SANDSTONE, GRAYISH-YELLOW, VERY SILTY, VERY FINE-GRAINED, SUBROUNDED TO SUBANGULAR, QUARTZOSE; SLIGHTLY CALCAREOUS, SOME LIGHT-OLIVE SILTSTONE NODULES 0.25 INCHES IN DIAMETER, SOME ASH-RICH LENSES, WHITE CHERT LAYER WITH FINE, BLACK, MANGANESE DENDRITES AT 50 FEET
2434.00 - 2317.00	58.0 - 175.0	SILTSTONE, LIGHT-OLIVE-GRAY; NONCALCAREOUS, MASSIVE WITH SOME NODULES, SOME VERY FINE SAND, VERY SANDY FROM 87 TO 119 FEET, ASH-RICH FROM 94 TO 102 FEET, PALEOSOL AT 130 FEET MOTTLED MODERATE-YELLOW-BROWN TO LIGHT-OLIVE-GRAY
2317.00 - 2255.00	175.0 - 237.0	SILTSTONE, MODERATE-YELLOW-BROWN, CLAYEY; CALCAREOUS AT 220 FEET, SOME SUBHEDRAL GYPSUM CRYSTALS PRESENT, PALEOSOL IN THE FIRST FEW FEET, FINE-GRAINED SANDY LENSES AT 187 TO 198 FEET
2255.00 - 2024.00	237.0 - 468.0	SILTSTONE, MODERATE-YELLOW-BROWN, SANDY, CLAYEY AT 310 TO 344 FEET; CALCAREOUS TO 310 FEET, VERY FINE SAND LAYER WITH ABUNDANT GLASS SHARDS FROM 437 TO 453 FEET
2024.00 - 1986.00	468.0 - 506.0	CLAYSTONE, YELLOWISH-GRAY, SILTY; NONCALCAREOUS, MOTTLED, MANY ASH SHARDS

(CHADRON FORMATION?)

1986.00 - 1940.00

506.0 - 552.0

SHALE, GRAYISH-BLACK; MASSIVE TO POORLY
FISSILE, BENTONITIC, VERY CALCAREOUS; PALEOSOL
FROM 506 TO 510 FEET WHICH IS SLIGHTLY
CALCAREOUS AND SANDY (PIERRE SHALE)

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Location Information

Legal Location:SW NW NW NW SEC. 20, T. 035 N., R. 25 W.
County:TODD Location:035N-25W-20BBBC 2
Basin:KEYA PAHA Latitude:43 00' 00"
Hydrologic Unit Code:10150006 Longitude:100 17' 48"
Land Owner: Ground Surface Elevation (ft.):2492 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:05/02/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-04 Total Drill Hole Depth (ft.):120.0
Samples:

Well Information

SDGS Well Name: R2-94-04 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2494.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):120.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2492.00 - 2452.00	0.0 - 40.0	SANDSTONE, PALE-GREENISH-YELLOW, WELL-ROUNDED TO ROUNDED, QUARTZOSE; NONCALCAREOUS, VARIABLY CEMENTED, SOME THIN SILTSTONE LENSES, SOME LIGHT-GRAY CHERT NODULES BELOW 20 FEET
2452.00 - 2434.00	40.0 - 58.0	SANDSTONE, GRAYISH-YELLOW, VERY SILTY, VERY FINE-GRAINED, SUBROUNDED TO SUBANGULAR, QUARTZOSE; SLIGHTLY CALCAREOUS, SOME LIGHT-OLIVE SILTSTONE NODULES 0.25 INCHES IN DIAMTER, SOME ASH-RICH LENSES, WHITE CHERT LAYER WITH FINE, BLACK, MANGANESE DENDRITES AT 50 FEET
2434.00 - 2372.00	58.0 - 120.0	SILTSTONE, LIGHT-OLIVE-GRAY; NONCALCAREOUS, MASSIVE WITH SOME NODULES, SOME VERY FINE SAND, VERY SANDY FROM 87 TO 119 FEET, ASH-RICH FROM 94 TO 102 FEET

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Location Information

Legal Location:NE NW NW SW SEC. 10, T. 035 N., R. 26 W.
 County:TODD Location:035N-26W-10CBBA
 Basin:KEYA PAHA Latitude:43 01' 26"
 Hydrologic Unit Code:10150006 Longitude:100 22' 18"
 Land Owner: Ground Surface Elevation (ft.):2617 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
 Drill Date:10/06/1993 Geologist's Log:X
 Company:SDGS Driller:G. JENSEN
 Drilling Method:ROTARY Driller's Log:
 Test Hole Number:R2-93-39 Total Drill Hole Depth (ft.):677.0
 Samples:

Well Information

SDGS Well Name: R2-93-39 Aquifer:
 Water Rights Well: Management Unit:
 Other Well Name: Casing Top Elevation:2620.00 T
 Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
 Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
 Total Casing and Screen (ft.):665.0 Casing Stick-up (ft.):3.00
 Well Maintenance Date:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
 Natural Gamma:X Extra:

20 FEET BLANK CASING PLACED BELOW SCREEN. FILTER PACK OF 0.65-0.75 MM QUARTZ SAND PLACED FROM 677 TO 625 FEET. CENTRALIZERS PLACED AT 645, 600, 550, 450 AND 250 FEET. HIGH SOLIDS BENTONITE GROUT PLACED FROM 625 TO 20 FEET. CEMENT GROUT PLACED FROM 20 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2617.00 - 2552.00	0.0 - 65.0	SANDSTONE, PALE-OLIVE, VERY FINE TO FINE, VERY SILTY, WELL-CEMENTED TO POORLY CEMENTED; ROUNDED TO SUBANGULAR CLEAR FROSTED AND POLISHED QUARTZ GRAINS; CALCAREOUS, SOME CLAY AND ASH BEDS, SOME LITHIC AND PINK FELDSPAR GRAINS, MANY ROOT AND BURROW CASTS
2552.00 - 2532.00	65.0 - 85.0	SAND, YELLOWISH-GRAY, FINE; PRIMARILY FROSTED AND POLISHED COLORLESS ROUNDED TO SUBANGULAR QUARTZ GRAINS; SOME LITHIC AND REDDISH FELDSPAR GRAINS, SOME SCATTERED BLACK ORGANIC DEBRIS
2532.00 - 2512.00	85.0 - 105.0	SILT, MODERATE-GREENISH-YELLOW, POORLY FISSILE, SANDY FROM 89 TO 95 FEET; NON- CALCAREOUS TO VERY POORLY CALCAREOUS, POSSIBLY SOME FAINT ROOT TUBULES (LOESS?)

2512.00 - 2119.00	105.0 - 498.0	SILTSTONE, PALE-YELLOWISH-BROWN, SANDY, CLAYEY, POORLY FISSILE TO MASSIVE; NONCALCAREOUS TO POORLY CALCAREOUS, SOME THIN TUBULAR CHERTY CLASTS, VERY SANDY FROM 137 TO 147 FEET AND VERY SANDY WITH HIGH ELECTRICAL RESISTIVITY AT 266 TO 374 FEET (ROSEBUD FORMATION)
2119.00 - 2076.00	498.0 - 541.0	CLAYSTONE, YELLOWISH-GRAY, SILTY, FISSILE TO POORLY FISSILE; NONCALCAREOUS (BRULE FORMATION?)
2076.00 - 2018.00	541.0 - 599.0	SILTSTONE, GRAYISH-ORANGE, SANDY, CLAYEY, POORLY FISSILE; NONCALCAREOUS TO VERY POORLY CALCAREOUS (BRULE FORMATION?)
2018.00 - 1993.00	599.0 - 624.0	SILTSTONE, PALE-OLIVE, CLAYEY, SLIGHTLY SANDY, POORLY FISSILE TO MASSIVE; VERY POORLY CALCAREOUS TO NONCALCAREOUS, HIGHER GAMMA READING FROM 612 TO 624 FEET (CHADRON FORMATION)
1993.00 - 1975.00	624.0 - 642.0	SAND, LIGHT-OLIVE-GRAY, MEDIUM TO COARSE, SUBROUNDED TO SUBANGULAR; PRIMARILY COLORLESS QUARTZ WITH SOME REDDISH FELDSPAR AND SOME LITHIC AND CHERT FRAGMENTS, NONCALCAREOUS (CHADRON FORMATION)
1975.00 - 1940.00	642.0 - 677.0	CLAYSTONE, OLIVE-BLACK, POORLY FISSILE; SLIGHTLY CALCAREOUS TO CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:NE NW NW NW SEC. 03, T. 035 N., R. 27 W.
County:TODD Location:035N-27W-03BBBA
Basin:KEYA PAHA Latitude:43 02' 45"
Hydrologic Unit Code:10150006 Longitude:100 29' 28"
Land Owner: Ground Surface Elevation (ft.):2670 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:04/20/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-07 Total Drill Hole Depth (ft.):202.0
Samples:

Well Information

SDGS Well Name: R2-94-07 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2672.00 T
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):204.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2670.00 - 2652.00	0.0 - 18.0	SANDSTONE, DUSKY-YELLOW, VERY FINE- TO MEDIUM-GRAINED, SILTY, SUBROUNDED TO SUBANGULAR; CALCAREOUS, MOSTLY POLISHED QUARTZ AND LITHIC GRAINS, SOME WHITE CALCITE, WELL CEMENTED
2652.00 - 2626.00	18.0 - 44.0	SANDSTONE, DUSKY-YELLOW, VERY FINE-GRAINED, VERY SILTY; MODERATELY CEMENTED
2626.00 - 2593.00	44.0 - 77.0	SILTSTONE, LIGHT-OLIVE-BROWN, SANDY; CALCAREOUS, SOME WHITE TO CREAM COLORED ASH SHARDS, SOME CALCAREOUS NODULES, SOME FINE-GRAINED SANDSTONE LENSES
2593.00 - 2564.00	77.0 - 106.0	SILTSTONE, MODERATE-YELLOW-BROWN; SLIGHTLY CALCAREOUS, SOME WHITE TO CREAM COLORED ASH SHARDS
2564.00 - 2503.00	106.0 - 167.0	SILTSTONE, MODERATE-YELLOW-BROWN TO GRAY-ORANGE, CLAYEY, SANDY; SLIGHTLY CALCAREOUS, SANDY LAYERS FROM 145 TO 152 FEET

2503.00 - 2468.00

167.0 - 202.0

SILTSTONE, MODERATE-YELLOW-BROWN, VERY SANDY;
SLIGHTLY CALCAREOUS, SME CHERTY NODULES AND
PEBBLES, SOME CEMENTED SAND BEDS AT 178 O 186
FEET

LITHOLOGY WAS TAKEN FROM TEST HOLE R2-94-01 WHICH WAS DRILLED AT OR VERY NEAR THE
SAME LOCATION.

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Location Information

Legal Location: NW NW NW NW SEC. 03, T. 035 N., R. 27 W.
 County: TODD Location: 035N-27W-03BBBB
 Basin: KEYA PAHA Latitude: 43 02' 45"
 Hydrologic Unit Code: 10150006 Longitude: 100 29' 28"
 Land Owner: Ground Surface Elevation (ft.): 2771 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
 Drill Date: 09/29/1993 Geologist's Log: X
 Company: SDGS Driller: G. JENSEN
 Drilling Method: ROTARY Driller's Log:
 Test Hole Number: R2-93-37 Total Drill Hole Depth (ft.): 47.0
 Samples:

Well Information

SDGS Well Name: R2-93-37 Aquifer:
 Water Rights Well: Management Unit:
 Other Well Name: Casing Top Elevation: 2773.00 T
 Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
 Screen Type: PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.): 20.0
 Total Casing and Screen (ft.): 49.0 Casing Stick-up (ft.): 2.00
 Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
 Natural Gamma: Extra:

FILTER PACK CONSISTED OF 0.65-0.75 MM QUARTZ SAND PLACED AT 49 TO 18 FEET. BENTONITE GROUT WAS PLACED AT 18 TO 5 FEET, AND CEMENT GROUT FROM 5 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2771.00 - 2769.00	0.0 - 2.0	TOPSOIL, BROWN
2769.00 - 2761.00	2.0 - 10.0	SANDSTONE, LIGHT-YELLOW-BROWN, FINE, SUB-ANGULAR TO SUBROUNDED; HIGHLY QUARTZOSE, MANY CALCAREOUS RHIZOLITHS
2761.00 - 2743.00	10.0 - 28.0	SAND, GRAYISH-WHITE, FINE, SUBANGULAR TO SUBROUNDED; CALCAREOUS, HIGHLY QUARTZOSE, SOME CEMENTED LAYERS
2743.00 - 2729.00	28.0 - 42.0	SANDSTONE, LIGHT-YELLOW-BROWN, FINE, SUB-ANGULAR TO SUBROUNDED; HIGHLY QUARTZOSE, CALCAREOUS CEMENTATION, SOME SILTY LAYERS
2729.00 - 2724.00	42.0 - 47.0	SILT, WHITE TO LIGHT-YELLOW-BROWN, SANDY; NONCALCAREOUS

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Location Information

Legal Location: NW NW NW NW SEC. 03, T. 035 N., R. 27 W.
County: TODD Location: 035N-27W-03BBBB 1
Basin: KEYA PAHA Latitude: 43 02' 45"
Hydrologic Unit Code: 10150006 Longitude: 100 29' 28"
Land Owner: Ground Surface Elevation (ft.): 2771 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 10/05/1993 Geologist's Log:
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log: X
Test Hole Number: R2-93-38 Total Drill Hole Depth (ft.): 407.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

TEST HOLE LOST DUE TO EXCESSIVE WATER LOSS. HOLE PLUGGED WITH HIGH SOLIDS BENTONITE GROUT FROM 407 TO 8 FEET, FROM 8 TO 3 FEET WITH CEMENT GROUT AND FROM 3 FEET TO LAND SURFACE WITH NATIVE SOILS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2771.00 - 2769.00	0.0 - 2.0	TOPSOIL, BLACK
2769.00 - 2753.00	2.0 - 18.0	SAND; CEMENTED
2753.00 - 2736.00	18.0 - 35.0	SAND, FINE
2736.00 - 2729.00	35.0 - 42.0	SAND; CEMENTED
2729.00 - 2718.00	42.0 - 53.0	SILTSTONE, TAN
2718.00 - 2713.00	53.0 - 58.0	SILTSTONE, BROWN AND WHITE
2713.00 - 2642.00	58.0 - 129.0	SILTSTONE, BROWN
2642.00 - 2364.00	129.0 - 407.0	SILTSTONE, TAN TO BROWN

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Location Information

Legal Location: NW NW NW NW SEC. 03, T. 035 N., R. 27 W.
County: TODD Location: 035N-27W-03BBBB 2
Basin: KEYA PAHA Latitude: 43 02' 45"
Hydrologic Unit Code: 10150006 Longitude: 100 29' 30"
Land Owner: Ground Surface Elevation (ft.): 2673 T

Project Information

Project: STATEWIDE MONITORING Geologist: L. SCHULZ
Drill Date: 06/27/1994 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: HOLLOWSTEM Driller's Log:
Test Hole Number: R20-94-32 Total Drill Hole Depth (ft.): 38.5
Samples:

Well Information

SDGS Well Name: R20-94-32 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2675.21 T
Casing Type: PVC, SCH. 40 Casing Diameter (in.): 4.0
Screen Type: PVC, SCH. 40, MFG., SLOT=0.010 Screen Length (ft.): 5.4
Total Casing and Screen (ft.): 36.3 Casing Stick-up (ft.): 2.21
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL INFORMATION: SCREENED INTERVAL FROM 36.27 TO 30.90 FEET BELOW CASING TOP.
NATURAL FILTER PACK FROM 38.5 TO 28.7 FEET BELOW LAND SURFACE. ARTIFICIAL PACK FROM
28.7 TO 26 FEET BELOW LAND SURFACE. BENTONITE SLURRY FROM 26 TO 2.4 FEET BELOW LAND
SURFACE. CEMENT GROUT FROM 2.4 FEET BELOW LAND SURFACE TO GROUND LEVEL. EAST OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2673.00 - 2671.00	0.0 - 2.0	TOPSOIL
2671.00 - 2662.00	2.0 - 11.0	SAND, LIGHT-BROWN, FINE; SOME SMALL PEBBLES
2662.00 - 2634.50	11.0 - 38.5	SAND, LIGHT-BROWN-GREEN, FINE, SILTY; SOME SANDSTONE PEBBLES LIGHTLY CEMENTED TOWARD THE BOTTOM

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Location Information

Legal Location: NW NW NW NW SEC. 03, T. 035 N., R. 27 W.
County: TODD Location: 035N-27W-03BBBB 3
Basin: KEYA PAHA Latitude: 43 02' 45"
Hydrologic Unit Code: 10150006 Longitude: 100 29' 30"
Land Owner: Ground Surface Elevation (ft.): 2673 T

Project Information

Project: STATEWIDE MONITORING Geologist: L. SCHULZ
Drill Date: 06/28/1994 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: HOLLOWSTEM Driller's Log:
Test Hole Number: R20-94-33 Total Drill Hole Depth (ft.): 23.0
Samples:

Well Information

SDGS Well Name: R20-94-33 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2675.00 T
Casing Type: PVC, SCH. 40 Casing Diameter (in.): 4.0
Screen Type: PVC, SCH. 40, MFG., SLOT=0.010 Screen Length (ft.): 10.3
Total Casing and Screen (ft.): 22.6 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL INFORMATION: SCREENED INTERVAL FROM 22.62 TO 12.27 FEET BELOW CASING TOP.
NATURAL FILTER PACK FROM 23 TO 16 FEET BELOW LAND SURFACE. ARTIFICIAL PACK FROM 16
TO 9 FEET BELOW LAND SURFACE. GRANULAR BENTONITE FROM 9 TO 2.3 FEET BELOW LAND
SURFACE. CEMENT GROUT FROM 2.3 FEET BELOW LAND SURFACE TO GROUND LEVEL. WEST OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2673.00 - 2671.00	0.0 - 2.0	TOPSOIL
2671.00 - 2662.00	2.0 - 11.0	SAND, LIGHT-BROWN, FINE; SOME SMALL PEBBLES
2662.00 - 2650.00	11.0 - 23.0	SAND, LIGHT-BROWN-GREEN, FINE, SILTY; SOME SANDSTONE PEBBLES

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Location Information

Legal Location: NW NW NW NW SEC. 03, T. 035 N., R. 27 W.
County: TODD Location: 035N-27W-03BBBB 4
Basin: KEYA PAHA Latitude: 43 02' 45"
Hydrologic Unit Code: 10150006 Longitude: 100 29' 28"
Land Owner: Ground Surface Elevation (ft.): 2672 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 04/20/1994 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-94-01 Total Drill Hole Depth (ft.): 747.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

THIS TEST HOLE WAS PLUGGED FROM TOTAL DEPTH TO 8 FEET BELOW LAND SURFACE WITH HIGH-SOLIDS BENTONITE GROUT; 8 FEET TO 3 FEET BELOW LAND SURFACE WITH NEAT CEMENT GROUT; 3 FEET TO LAND SURFACE WITH DRILL CUTTINGS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2672.00 - 2654.00	0.0 - 18.0	SANDSTONE, DUSKY-YELLOW, VERY FINE- TO MEDIUM-GRAINED, SILTY, SUBROUNDED TO SUBANGULAR; CALCAREOUS, MOSTLY POLISHED QUARTZ AND LITHIC GRAINS, SOME WHITE CALCITE, WELL CEMENTED
2654.00 - 2628.00	18.0 - 44.0	SANDSTONE, DUSKY-YELLOW, VERY FINE-GRAINED, VERY SILTY; MODERATELY CEMENTED
2628.00 - 2595.00	44.0 - 77.0	SILTSTONE, LIGHT-OLIVE-BROWN, SANDY; CALCAREOUS, SOME WHITE TO CREAM COLORED ASH SHARDS, SOME CALCAREOUS NODULES, SOME FINE-GRAINED SANDSTONE LENSES
2595.00 - 2566.00	77.0 - 106.0	SILTSTONE, MODERATE-YELLOW-BROWN; SLIGHTLY CALCAREOUS, SOME WHITE TO CREAM COLORED ASH SHARDS
2566.00 - 2505.00	106.0 - 167.0	SILTSTONE, MODERATE-YELLOW-BROWN TO GRAY-ORANGE, CLAYEY, SANDY; SLIGHTLY CALCAREOUS, SANDY LAYERS FROM 145 TO 152 FEET
2505.00 - 2231.00	167.0 - 441.0	SILTSTONE, MODERATE-YELLOW-BROWN, DARK-YELLOW-BROWN FROM 215 TO 230 FEET, VERY SANDY; SLIGHTLY CALCAREOUS, SOME CHERTY NODULES AND PEBBLES, SOME CEMENTED SAND BEDS AT 178 TO 186 FEET, 244 TO 275 FEET, 356 TO 371 FEET, AND 428 TO 437 FEET

2231.00 - 2210.00	441.0 - 462.0	SANDSTONE, MODERATE-YELLOW-BROWN TO PALE-YELLOW-BROWN, VERY SILTY, VERY CLAYEY; MANY SPHEROIDAL CLAY CONCRETIONS, SLIGHTLY CALCAREOUS
2210.00 - 2177.00	462.0 - 495.0	SILTSTONE, DARK-YELLOWISH-BROWN, CLAYEY, SANDY; SOME SPHEROIDAL CLAY CONCRETIONS, SOME SANDY LENSES FROM 470 TO 476 FEET
2177.00 - 2087.00	495.0 - 585.0	CLAYSTONE, MODERATE-YELLOW-BROWN TO LIGHT-BROWN, SILTY, SLIGHTLY SANDY; MANY ASH SHARDS BELOW 530 FEET, MANY SANDY LAYERS AT 535 TO 540 FEET, 545 TO 549 FEET, AND 562 TO 584 FEET (CHADRON FORMATION)
2087.00 - 1982.00	585.0 - 690.0	CLAYSTONE, DARK-YELLOW-BROWN TO MEDIUM-DARK-GRAY, SILTY; VERY CALCAREOUS, MANY ASH SHARDS, DISTINCT GREENISH-GRAY AND MODERATE-YELLOW-BROWN MOTTLING BY 660 FEET (BRULE FORMATION)
1982.00 - 1962.00	690.0 - 710.0	SILTSTONE, MOTTLED MODERATE-YELLOW-GRAY TO GREENISH-GRAY AND MODERATE-YELLOW-BROWN; NONCALCAREOUS TO SLIGHTLY CALCAREOUS (PALEOSOL)
1962.00 - 1925.00	710.0 - 747.0	SHALE, GRAYISH-BLACK; MODERATELY CALCAREOUS, MASSIVE TO PARTLY FISSILE (PIERRE SHALE)

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Location Information

Legal Location:SE NW NW NW SEC. 15, T. 035 N., R. 28 W.
County:TODD Location:035N-28W-15BBBD
Basin:MINNECHADUZA Latitude:43 00' 55"
Hydrologic Unit Code:10150004 Longitude:100 36' 27"
Land Owner:B. COX Ground Surface Elevation (ft.):2750 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/28/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-35 Total Drill Hole Depth (ft.):752.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

TEST HOLE PLUGGED FROM 752 TO 8 FEET WITH HIGH SOLIDS BENTONITE GROUT, FROM 8 TO 3 FEET WITH CEMENT GROUT AND FROM 3 FEET TO GROUND SURFACE WITH NATIVE SOILS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2750.00 - 2749.00	0.0 - 1.0	TOPSOIL, BROWN
2749.00 - 2736.00	1.0 - 14.0	SANDSTONE, YELLOWISH-GRAY, FINE; CALCAREOUS CEMENTATION, MANY RHIZOLITHS PRESENT, QUARTZOSE (ASH HOLLOW FORMATION?)
2736.00 - 2710.00	14.0 - 40.0	SANDSTONE, DUSKY-YELLOW, FINE; QUARTZOSE, CALCAREOUS, SOME SILTSTONE BEDS (OGALLALA GROUP)
2710.00 - 2668.00	40.0 - 82.0	SANDSTONE AND SILTSTONE, MODERATE-YELLOW-BROWN; NONCALCAREOUS (OGALLALA GROUP)
2668.00 - 2644.00	82.0 - 106.0	SILTSTONE, DARK-YELLOWISH-BROWN, MASSIVE; NONCALCAREOUS (ARIKAREE FORMATION)
2644.00 - 2569.00	106.0 - 181.0	SILTSTONE AND SANDSTONE, DARK-YELLOWISH- BROWN, VERY FINE SAND; NONCALCAREOUS
2569.00 - 2454.00	181.0 - 296.0	SILTSTONE, DARK-YELLOWISH-BROWN, CLAYEY, MASSIVE; NONCALCAREOUS
2454.00 - 2424.00	296.0 - 326.0	SILTSTONE AND SANDSTONE, DARK-YELLOWISH- BROWN, VERY FINE SAND; NONCALCAREOUS
2424.00 - 2330.00	326.0 - 420.0	SILTSTONE, DARK-YELLOWISH-BROWN, CLAYEY, MASSIVE; CHANGES TO LIGHT-OLIVE-GRAY BELOW 392 FEET, NONCALCAREOUS
2330.00 - 2232.00	420.0 - 518.0	SILTSTONE, DARK-YELLOWISH-BROWN, CLAYEY,

MASSIVE; NONCALCAREOUS, CHANGES TO LIGHT-GRAY
BELOW 490 FEET

2232.00 - 2180.00	518.0 - 570.0	CLAYSTONE, LIGHT-BROWN, SILTY; NON- CALCAREOUS, BENTONITIC, SOME WHITE AND BLUE-GREEN LAYERS
2180.00 - 2108.00	570.0 - 642.0	CLAYSTONE, PALE-GRAYISH-ORANGE TO PALE- YELLOWISH-BROWN, SILTY, MASSIVE; CALCAREOUS TO SLIGHTLY CALCAREOUS
2108.00 - 2065.00	642.0 - 685.0	CLAYSTONE, LIGHT-BLUIISH-GRAY TO MEDIUM- BLUIISH-GRAY, MASSIVE; NONCALCAREOUS (CHADRON FORMATION?)
2065.00 - 2029.00	685.0 - 721.0	CLAYSTONE, GRAYISH-ORANGE, SILTY; NON- CALCAREOUS, SOME MODERATE RED CLAYS PRESENT
2029.00 - 1998.00	721.0 - 752.0	CLAY, BROWNISH-BLACK; GREASY, CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:SE NW NW NW SEC. 15, T. 035 N., R. 28 W.	
County:TODD	Location:035N-28W-15BBBD 1
Basin:MINNECHADUZA	Latitude:43 00' 55"
Hydrologic Unit Code:10150004	Longitude:100 36' 27"
Land Owner:B. COX	Ground Surface Elevation (ft.):2750 T

Project Information

Project:MELLETTT-TODD CO. STUDY	Geologist:M. JARRETT
Drill Date:09/29/1993	Geologist's Log:X
Company:SDGS	Driller:G. JENSEN
Drilling Method:ROTARY	Driller's Log:
Test Hole Number:R2-93-36	Total Drill Hole Depth (ft.):76.0
Samples:	

Well Information

SDGS Well Name: R2-93-36	Aquifer:
Water Rights Well:	Management Unit:
Other Well Name:	Casing Top Elevation:2752.00 T
Casing Type:PVC, SCH. 80	Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN.	Screen Length (ft.):30.0
Total Casing and Screen (ft.):78.0	Casing Stick-up (ft.):2.00
Well Maintenance Date:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

FILTER PACK COMPRISED OF 850 LBS 0.65-0.75 MM QUARTZ SAND. HIGH SOLIDS BENTONITE GROUT PLACED FROM 45 TO 8 FEET, AND CEMENT GROUT FROM 8 FEET TO SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2750.00 - 2749.00	0.0 - 1.0	TOPSOIL, BROWN
2749.00 - 2736.00	1.0 - 14.0	SANDSTONE, YELLOWISH-GRAY, FINE, QUARTZOSE; CALCAREOUS, RHIZOLITHS PRESENT (ASH HOLLOW FORMATION)
2736.00 - 2710.00	14.0 - 40.0	SANDSTONE, DUSKY-YELLOW, FINE, QUARTZOSE; CALCAREOUS, SOME SILTSTONE BEDS
2710.00 - 2674.00	40.0 - 76.0	SANDSTONE AND SILTSTONE, MODERATE-YELLOW- BROWN; NONCALCAREOUS

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Location Information

Legal Location: NW SW SW NW SEC. 04, T. 035 N., R. 29 W.
County: TODD Location: 035N-29W-04BCCB 1
Basin: MINNECHADUZA Latitude: 43 02' 26"
Hydrologic Unit Code: 10150004 Longitude: 100 44' 52"
Land Owner: Ground Surface Elevation (ft.): 2845 T

Project Information

Project: TODD-MELLETTTE STUDY Geologist: P. HAMMOND
Drill Date: 07/17/1990 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-90-34 Total Drill Hole Depth (ft.): 117.0
Samples:

Well Information

SDGS Well Name: R20-90-34 Aquifer: ARIKAREE GROUP
Water Rights Well: TD-90B Management Unit:
Other Well Name: Casing Top Elevation: 2847.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.): 5.0
Total Casing and Screen (ft.): 115.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity: X
Natural Gamma: X Extra: X

RESISTIVITY NOT WORKING PROPERLY. SCREEN INTERVAL FROM 113 TO 108 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 117 TO 100.5 FEET; BENTONITE 100.5 TO 11 FEET; CEMENT 11 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED. SOUTH WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2845.00 - 2830.00	0.0 - 15.0	SAND AND SANDSTONE, LIGHT-BROWN TO GREEN, FINE
2830.00 - 2823.00	15.0 - 22.0	SAND AND SILTSTONE, LIGHT-BROWN, FINE; SOMEWHAT CALCAREOUS
2823.00 - 2819.00	22.0 - 26.0	SILTSTONE, LIGHT-BROWN TO WHITISH-BROWN; CALCAREOUS
2819.00 - 2789.00	26.0 - 56.0	SAND, LIGHT-BROWN; SOME SILTSTONE, CALCAREOUS
2789.00 - 2786.00	56.0 - 59.0	SANDSTONE, LIGHT-BROWN TO GREENISH-BROWN; SOME SILTSTONE, SLIGHTLY CALCAREOUS
2786.00 - 2783.00	59.0 - 62.0	SILTSTONE AND SANDSTONE, BROWN; CALCAREOUS, SOME WHITE PIECES PRESENT
2783.00 - 2769.00	62.0 - 76.0	SILTSTONE, LIGHT-REDDISH-BROWN; CALCAREOUS, SOME WHITE CALCAREOUS PIECES PRESENT

2769.00 - 2728.00

76.0 - 117.0

SILTSTONE, REDDISH-BROWN, CLAYEY; CALCAREOUS
(ARIKAREE GROUP)

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Location Information

Legal Location: NW SW SW NW SEC. 04, T. 035 N., R. 29 W.
County: TODD Location: 035N-29W-04BCCB 2
Basin: MINNECHADUZA Latitude: 43 02' 26"
Hydrologic Unit Code: 10150004 Longitude: 100 44' 52"
Land Owner: Ground Surface Elevation (ft.): 2845 T

Project Information

Project: TODD-MELLETTTE STUDY Geologist: P. HAMMOND
Drill Date: 07/17/1990 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-90-35 Total Drill Hole Depth (ft.): 53.0
Samples:

Well Information

SDGS Well Name: R20-90-35 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2847.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.): 5.0
Total Casing and Screen (ft.): 55.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 53 TO 48 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 53 TO 38 FEET; BENTONITE 38 TO 9 FEET; CEMENT 9 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED. MIDDLE WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2845.00 - 2830.00	0.0 - 15.0	SAND, BROWNISH-GREEN, FINE TO MEDIUM; SLIGHTLY CALCAREOUS, ROOT CASTS PRESENT
2830.00 - 2823.00	15.0 - 22.0	SAND AND SILTSTONE, BROWN, FINE TO COARSE; CALCAREOUS, ROOT CASTS PRESENT WHICH ARE SLIGHTLY CALCAREOUS
2823.00 - 2819.00	22.0 - 26.0	SILTSTONE, LIGHT-BROWN TO WHITISH-BROWN; CALCAREOUS
2819.00 - 2792.00	26.0 - 53.0	SAND AND SANDSTONE, LIGHT-BROWN TO GREENISH, FINE TO COARSE; SOME SILTSTONE

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Location Information

Legal Location: NW SW SW NW SEC. 04, T. 035 N., R. 29 W.
County: TODD Location: 035N-29W-04BCCB 3
Basin: MINNECHADUZA Latitude: 43 02' 26"
Hydrologic Unit Code: 10150004 Longitude: 100 44' 52"
Land Owner: Ground Surface Elevation (ft.): 2845 T

Project Information

Project: TODD-MELLETTTE STUDY Geologist: P. HAMMOND
Drill Date: 07/17/1990 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-90-36 Total Drill Hole Depth (ft.): 27.0
Samples:

Well Information

SDGS Well Name: R20-90-36 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2848.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 30.0 Casing Stick-up (ft.): 3.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 27 TO 17 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 27 TO 12 FEET; BENTONITE 12 TO 7 FEET; CEMENT 7 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED. NORTH WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2845.00 - 2830.00	0.0 - 15.0	SAND, BROWNISH-GREEN, FINE TO MEDIUM; SLIGHTLY CALCAREOUS, ROOT CASTS PRESENT
2830.00 - 2818.00	15.0 - 27.0	SAND AND SILTSTONE, BROWNISH-GREEN, FINE TO COARSE; CALCAREOUS, ROOT CASTS

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Location Information

Legal Location: NW SE SE NE SEC. 05, T. 035 N., R. 29 W.
County: TODD Location: 035N-29W-05ADDB
Basin: MINNECHADUZA Latitude: 43 02' 24"
Hydrologic Unit Code: 10150004 Longitude: 100 44' 57"
Land Owner: Ground Surface Elevation (ft.): 2845 T

Project Information

Project: TODD-MELLETTTE STUDY Geologist: P. HAMMOND
Drill Date: 07/17/1990 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-90-37 Total Drill Hole Depth (ft.): 27.0
Samples:

Well Information

SDGS Well Name: R20-90-37 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2848.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 30.0 Casing Stick-up (ft.): 3.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 27 TO 17 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 27 TO 11.5 FEET; BENTONITE 11.5 TO 7 FEET; CEMENT 7 TO 0 FEET; STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2845.00 - 2830.00	0.0 - 15.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO MEDIUM; SLIGHTLY CALCAREOUS, ROOT CASTS PRESENT
2830.00 - 2818.00	15.0 - 27.0	SAND AND SILTSTONE, LIGHT-BROWN, FINE TO COARSE; CALCAREOUS, ROOT CASTS PRESENT

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Location Information

Legal Location:NE SE SE NW SEC. 05, T. 035 N., R. 29 W.
County:TODD Location:035N-29W-05BDDA
Basin:MINNECHADUZA Latitude:43 02' 24"
Hydrologic Unit Code:10150004 Longitude:100 45' 31"
Land Owner: Ground Surface Elevation (ft.):2855 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:06/24/1991 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-91-27 Total Drill Hole Depth (ft.):47.0
Samples:

Well Information

SDGS Well Name: R20-91-27 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2857.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):45.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 43 TO 33 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 47 TO 25 FEET; BENTONITE 25 TO 19 FEET; CEMENT 19 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. CASING AND SCREEN ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2855.00 - 2854.00	0.0 - 1.0	TOPSOIL, BLACK, SANDY
2854.00 - 2838.00	1.0 - 17.0	SAND, GREENISH-BROWN, VERY FINE TO FINE
2838.00 - 2826.00	17.0 - 29.0	SAND, LIGHT-BROWN, VERY FINE TO FINE; SOME SILT; MANY ROOT CASTS PRESENT; CALCAREOUS
2826.00 - 2816.00	29.0 - 39.0	SAND AND SANDSTONE, WHITISH-BROWN, VERY FINE TO FINE SAND, VERY SILTY; SOME SILTSTONE; HIGHLY CALCAREOUS
2816.00 - 2808.00	39.0 - 47.0	SAND AND SILTSTONE, WHITISH-BROWN, VERY FINE TO FINE, VERY SILTY; HIGHLY CALCAREOUS

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Location Information

Legal Location:SE NE SE NE SEC. 06, T. 035 N., R. 29 W.
County:TODD Location:035N-29W-06ADAD
Basin:MINNECHADUZA Latitude:43 02' 26"
Hydrologic Unit Code:10150004 Longitude:100 46' 04"
Land Owner: Ground Surface Elevation (ft.):2895 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:06/25/1991 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-91-28 Total Drill Hole Depth (ft.):74.0
Samples:

Well Information

SDGS Well Name: R20-91-28 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2897.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):75.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 73 TO 63 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 74 TO 55 FEET; BENTONITE 55 TO 20 FEET; CEMENT 20 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. CASING AND SCREEN ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2895.00 - 2893.00	0.0 - 2.0	TOPSOIL, BLACK
2893.00 - 2876.00	2.0 - 19.0	SAND AND SANDSTONE, LIGHT-BROWN, VERY FINE TO MEDIUM; SOME SILTSTONE; CALCAREOUS
2876.00 - 2854.00	19.0 - 41.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO FINE; SOME SILTSTONE, CALCAREOUS
2854.00 - 2847.00	41.0 - 48.0	SAND AND SANDSTONE, TAN, VERY FINE TO MEDIUM, CLAYEY; SOME SILTSTONE; CALCAREOUS
2847.00 - 2837.00	48.0 - 58.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO MEDIUM; SOME SILTSTONE; CALCAREOUS
2837.00 - 2821.00	58.0 - 74.0	SAND AND SANDSTONE, LIGHT-BROWN, VERY FINE TO MEDIUM; SILTSTONE; ROOT CASTS PRESENT; CALCAREOUS

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Location Information

Legal Location: NW NW NW NW SEC. 07, T. 035 N., R. 29 W.
County: TODD Location: 035N-29W-07BBBB
Basin: MINNECHADUZA Latitude: 43 01' 48"
Hydrologic Unit Code: 10150004 Longitude: 100 47' 10"
Land Owner: Ground Surface Elevation (ft.): 2903 T

Project Information

Project: WATER RIGHTS Geologist: M. TIPTON
Drill Date: 10/05/1959 Geologist's Log: X
Company: GRIMSHAW-GROSCH Driller: FOX
Drilling Method: Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 200.0
Samples:

Well Information

SDGS Well Name: Aquifer: OGALLALA
Water Rights Well: TD-59A Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: STEEL Casing Diameter (in.): 1.3
Screen Type: UNKNOWN Screen Length (ft.):
Total Casing and Screen (ft.): 84.8 Casing Stick-up (ft.): 1.70
Well Maintenance Date: 06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

ORIGINAL OBSERVATION WELL NAME NC-4.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2903.00 - 2893.00	0.0 - 10.0	SANDSTONE, FINE TO MEDIUM; CALCAREOUS AND NONCALCAREOUS CEMENTED, FEW PIECES CONTAINING ROOT-LIKE STRUCTURES
2893.00 - 2843.00	10.0 - 60.0	SAND, FINE TO COARSE, SUBANGULAR TO ROUNDED; MOSTLY QUARTZ WITH SOME FELDSPAR AND DARK MINERALS, SOME SANDSTONE, FINE TO MEDIUM FROM 50 TO 60 FEET, CALCAREOUS CEMENTED, FEW PIECES BUFF LIMESTONE
2843.00 - 2813.00	60.0 - 90.0	SAND, FINE TO COARSE, SUBANGULAR TO ROUNDED; SAME AS INTERVAL FROM 10 TO 60 FEET, WITH INCREASED AMOUNT OF SANDSTONE, SOME SANDSTONE FORMED INTO ROOT-LIKE STRUCTURES
2813.00 - 2793.00	90.0 - 110.0	SAND, FINE TO COARSE, SUBANGULAR TO ROUNDED; SAME AS INTERVAL FROM 60 TO 90 FEET, SANDSTONE DARKER COLORED, LARGE AMOUNT OF LOOSE SAND FROM 100 TO 160 FEET

2793.00 - 2783.00	110.0 - 120.0	SAND, FINE TO COARSE, WELL-SORTED, SUBANGULAR TO ROUNDED; LOOSE, MOSTLY QUARTZ WITH SOME FELDSPAR AND DARK MINERALS
2783.00 - 2703.00	120.0 - 200.0	SANDSTONE, BUFF, VERY FINE, SILTY; NONCALCAREOUS, WITH SOME LOOSE SAND INCREASING FROM 140 TO 150 AND 170 TO 180 FEET, SANDSTONE SILTIER AND FEW PIECES HAVE PINKISH CAST FROM 190 TO 200 FEET

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Location Information

Legal Location:SE SE NE NE SEC. 20, T. 035 N., R. 29 W.
County:TODD Location:035N-29W-20AADD
Basin:MINNECHADUZA Latitude:42 59' 57"
Hydrologic Unit Code:10150004 Longitude:100 44' 53"
Land Owner: Ground Surface Elevation (ft.):2890 T

Project Information

Project:WATER RIGHTS Geologist:M. TIPTON
Drill Date:11/03/1959 Geologist's Log:X
Company:GRIMSHAW-GROSCH Driller:FOX
Drilling Method: Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):200.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-59B Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type:STEEL Casing Diameter (in.):1.3
Screen Type: Screen Length (ft.):
Total Casing and Screen (ft.):128.9 Casing Stick-up (ft.):1.30
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

ORIGINAL OBSERVATION WELL NAME NC-5.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2890.00 - 2880.00	0.0 - 10.0	SAND, MEDIUM; LOOSE, MOSTLY QUARTZ WITH FELDSPAR AND DARK MINERALS
2880.00 - 2870.00	10.0 - 20.0	SAND; LOOSE, WITH INCREASED SANDSTONE
2870.00 - 2780.00	20.0 - 110.0	SAND; LOOSE, SHALE-LIKE PIECES OF ORGANIC MATTER 60 TO 70 FEET, SOME CALICHIE 70 TO 90 FEET
2780.00 - 2770.00	110.0 - 120.0	SANDSTONE, FINE TO MEDIUM; LOOSELY CEMENTED WITH A CALCAREOUS CEMENT WITH MUCH LOOSE SAND
2770.00 - 2690.00	120.0 - 200.0	SAND, SILTY, BUFF-GRAY; WITH OCCASIONAL ASH SHARD, LOOSELY CEMENTED IN PART

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Location Information

Legal Location:SE SE NE NE SEC. 20, T. 035 N., R. 29 W.
County:TODD Location:035N-29W-20AADD 1
Basin:MENNESHADUZA Latitude:42 59' 57"
Hydrologic Unit Code:10150004 Longitude:100 44' 53"
Land Owner: Ground Surface Elevation (ft.):2890 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:05/23/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-08 Total Drill Hole Depth (ft.):106.0
Samples:

Well Information

SDGS Well Name: R2-94-08 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2892.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):105.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2890.00 - 2880.00	0.0 - 10.0	SAND, MEDIUM; LOOSE, MOSTLY QUARTZ WITH FELDSPAR AND DARK MINERALS
2880.00 - 2870.00	10.0 - 20.0	SAND; LOOSE, WITH INCREASED SANDSTONE
2870.00 - 2784.00	20.0 - 106.0	SAND; LOOSE, SHALE-LIKE PIECES OF ORGANIC MATTER 60 TO 70 FEET, SOME CALICHE 70 TO 90 FEET

NO GEOLOGIST LOG AVAILABLE FOR THIS WELL. LITHOLOGY WAS TAKEN FROM WATER RIGHTS WELL TD-59B.

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Location Information

Legal Location: NW NW NW NW SEC. 21, T. 035 N., R. 29 W.
County: TODD Location: 035N-29W-21BBBB
Basin: MINNECHADUZA Latitude: 43 00' 05"
Hydrologic Unit Code: 10150004 Longitude: 100 44' 52"
Land Owner: Ground Surface Elevation (ft.): 2875 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 09/22/1993 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-93-34 Total Drill Hole Depth (ft.): 977.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

THIS HOLE WAS PLUGGED FROM 977 TO 8 FEET WITH HIGH SOLIDS BENTONITE GROUT, FROM 8 TO 3 FEET WITH CEMENT GROUT AND FROM 3 FEET TO LAND SURFACE WITH NATIVE SOILS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2875.00 - 2822.00	0.0 - 53.0	SANDSTONE, YELLOWISH-GRAY TO WHITE, VERY FINE TO FINE, VERY SILTY; VERY CALCAREOUS, LARGELY CLEAR TO WHITE SUBROUNDED TO SUBANGULAR QUARTZ WITH COMMON LITHIC, CHERT AND PINK FELDSPAR CLASTS, ABUNDANT WHITE ROOT OR BURROW CASTS (OGALLALA GROUP)
2822.00 - 2792.00	53.0 - 83.0	SAND, YELLOWISH-GRAY, VERY FINE TO MEDIUM GRAINED, SILTY; CALCAREOUS, MOSTLY CLEAR TO WHITE, FROSTED AND POLISHED SUBROUNDED TO SUBANGULAR QUARTZ, SOME LITHIC CLASTS, POOR TO NO CEMENTATION, ABUNDANT ROOT OR BURROW CASTS, WHITE ASH BEDS AT 70-73 FEET (OGALLALA GROUP)
2792.00 - 2768.00	83.0 - 107.0	SANDSTONE, YELLOWISH-GRAY, VERY FINE TO MEDIUM, SILTY; CALCAREOUS, MOSTLY CLEAR TO WHITE POLISHED AND FROSTED QUARTZ, SUBROUNDED TO SUBANGULAR, SOME LITHIC AND REDDISH FELDSPAR CLASTS, CEMENTED TO POORLY CEMENTED, ABUNDANT ROOT AND BURROW CASTS (OGALLALA GROUP)
2768.00 - 2687.00	107.0 - 188.0	SILTSTONE, PALE-YELLOWISH-BROWN, SLIGHTLY SANDY AND CLAYEY, POORLY FISSILE TO MASSIVE (ARIKAREE GROUP)
2687.00 - 2640.00	188.0 - 235.0	SILTSTONE, LIGHT-BROWN, VERY SANDY; SLIGHTLY CALCAREOUS (ROSEBUD FORMATION)
2640.00 - 2359.00	235.0 - 516.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SLIGHTLY SANDY,

POORLY FISSILE TO MASSIVE; SLIGHTLY CALCAREOUS,
SANDY BELOW 450 FEET, HIGHER GAMMA LOG VALUES
FROM 480 TO 500 FEET (ROSEBUD FORMATION?)

2359.00 - 2350.00	516.0 - 525.0	SAND, LIGHT-BROWN, VERY FINE; LARGELY SUBANGULAR TO SUBROUNDED CLEAR QUARTZ WITH ABUNDANT LITHIC, CHERT AND DARK ORGANIC CLASTS, SLIGHTLY CALCAREOUS, POOR TO NO CEMENTATION (ARIKAREE GROUP)
2350.00 - 2207.00	525.0 - 668.0	SILTSTONE, PALE-YELLOWISH-BROWN, SANDY, CLAYEY, POORLY FISSILE TO MASSIVE; POORLY CALCAREOUS (ROSEBUD FORMATION?)
2207.00 - 2079.00	668.0 - 796.0	SILTSTONE, PALE-YELLOWISH-BROWN, CLAYEY, SANDY; SLIGHTLY CALCAREOUS
2079.00 - 1998.00	796.0 - 877.0	SILTSTONE, PALE-OLIVE TO GRAYISH-ORANGE, SANDY, CLAYEY, MASSIVE TO POORLY FISSILE; CALCAREOUS, OXIDIZED INTERVALS MAY BE PALEOSOLS (BRULE FORMATION?)
1998.00 - 1940.00	877.0 - 935.0	SILTSTONE, DARK-YELLOW-ORANGE TO DUSKY- YELLOW, CLAYEY, SLIGHTLY SANDY
1940.00 - 1898.00	935.0 - 977.0	CLAYSTONE, OLIVE-BLACK, SOMEWHAT FISSILE; CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:SW SW SE SE SEC. 05, T. 035 N., R. 30 W.
County:TODD Location:035N-30W-05DDCC
Basin:MINNECHADUZA Latitude:43 01' 53"
Hydrologic Unit Code:10150004 Longitude:100 52' 13"
Land Owner: Ground Surface Elevation (ft.):2842 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:09/15/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-33 Total Drill Hole Depth (ft.):1022.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

THIS TEST WAS PLUGGED WITH BENTONITE GROUT FROM 1022 TO 8 FEET, WITH CEMENT GROUT FROM 8 TO 3 FEET AND NATIVE SOIL FROM 3 FEET TO LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2842.00 - 2840.00	0.0 - 2.0	TOPSOIL, BLACK, VERY SANDY; CALCAREOUS
2840.00 - 2799.00	2.0 - 43.0	SANDSTONE, GRAYISH-YELLOW-GREEN, FINE, SUBROUNDED TO SUBANGULAR; CALCITE CEMENT, PRIMARILY QUARTZ GRAINS, SOME LAYERS VERY TIGHTLY CEMENTED, ABUNDANT CALCITE ROOT CASTS OR ANIMAL BURROWS FROM 10 TO 43 FEET (ASH HOLLOW FORMATION?)
2799.00 - 2735.00	43.0 - 107.0	SANDSTONE, YELLOWISH-GRAY, FINE, PRIMARILY ROUNDED TO SUBANGULAR QUARTZ GRAINS; CALCAREOUS TO POORLY CALCAREOUS, SOME SILTY BEDS (VALENTINE FORMATION)
2735.00 - 2719.00	107.0 - 123.0	SILTSTONE, PALE-YELLOWISH-BROWN, MASSIVE(?); SLIGHTLY CALCAREOUS (LOESS?)
2719.00 - 2560.00	123.0 - 282.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SLIGHTLY SANDY; HARD, SLIGHTLY CALCAREOUS TO NONCALCAREOUS, SANDY FROM 210 TO 240 FEET, HARD CHERTY BED AT 210 FEET, HIGH GAMMA READING FROM 240 TO 263 FEET (ROSEBUD FORMATION?)
2560.00 - 2505.00	282.0 - 337.0	SILTSTONE, PALE-YELLOWISH-BROWN, VERY SANDY; SLIGHTLY CALCAREOUS TO NON- CALCAREOUS (ROSEBUD FORMATION?)
2505.00 - 2470.00	337.0 - 372.0	SILTSTONE, PALE-YELLOWISH-BROWN, SLIGHTLY SANDY; SLIGHTLY CALCAREOUS (ROSEBUD FORMATION)

2470.00 - 2455.00	372.0 - 387.0	SANDSTONE, GRAYISH-ORANGE, VERY FINE, SILTY; NONCALCAREOUS, VERY POORLY CEMENTED (ROSEBUD FORMATION)
2455.00 - 2445.00	387.0 - 397.0	SILTSTONE, LIGHT-BROWN, SANDY; NON- CALCAREOUS (ROSEBUD FORMATION)
2445.00 - 2436.00	397.0 - 406.0	SILTSTONE, VERY PALE-ORANGE, CLAYEY; CALCAREOUS, BLOCKY STRUCTURE
2436.00 - 2358.00	406.0 - 484.0	SILTSTONE, LIGHT-BROWN, SLIGHTLY CLAYEY, SANDY TO VERY SANDY FROM 435 TO 445 FEET; VERY POORLY CALCAREOUS TO NON- CALCAREOUS (ROSEBUD FORMATION)
2358.00 - 2337.00	484.0 - 505.0	SILTSTONE, PALE-YELLOWISH-BROWN, CLAYEY; CALCAREOUS, HIGH GAMMA TRACE (ROSEBUD FORMATION)
2337.00 - 2281.00	505.0 - 561.0	SANDSTONE, PALE-YELLOWISH-BROWN, VERY FINE, SILTY; SILTSTONE LENS AT 526 TO 536 FEET (ROSEBUD FORMATION?)
2281.00 - 2062.00	561.0 - 780.0	SILTSTONE, GRAYISH-YELLOW, CLAYEY, SANDY; SLIGHTLY CALCAREOUS, SOME INTERVALS OXIDIZED TO LIGHT-BROWN, SEVERAL HARD ASHY BEDS (BRULE FORMATION?)
2062.00 - 2009.00	780.0 - 833.0	SILTSTONE, LIGHT-OLIVE-GRAY, SANDY, CLAYEY; SLIGHTLY CALCAREOUS (BRULE FORMATION?)
2009.00 - 1933.00	833.0 - 909.0	CLAYSTONE, PALE-OLIVE, VERY SILTY, SANDY; SOME INTERVALS WEATHERED TO DUSKY- YELLOW (CHADRON FORMATION?)
1933.00 - 1884.00	909.0 - 958.0	CLAYSTONE, GRAYISH-GREEN, VERY SILTY, SOMEWHAT FISSILE; SLIGHTLY CALCAREOUS TO NONCALCAREOUS (CHADRON FORMATION)
1884.00 - 1846.00	958.0 - 996.0	CLAYSTONE, DUSKY-YELLOW, SLIGHTLY SILTY; VERY CALCAREOUS (CHADRON FORMATION)
1846.00 - 1820.00	996.0 - 1022.0	CLAYSTONE, GRAYISH-BLACK, SLIGHTLY FISSILE; SLIGHTLY CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:SW SW SE SE SEC. 05, T. 035 N., R. 30 W.
County:TODD Location:035N-30W-05DDCC 1
Basin:MINNECHADUZA Latitude:43 01' 53"
Hydrologic Unit Code:10150004 Longitude:100 52' 13"
Land Owner: Ground Surface Elevation (ft.):2842 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/15/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-37 Total Drill Hole Depth (ft.):322.0
Samples:

Well Information

SDGS Well Name: R2-96-37 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2844.00 T
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.018 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):324.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

THIS WELL WAS FILTER PACKED FROM 322 TO 294 FEET; THE ANNULAR SPACE WAS FILLED WITH BENTONITE GROUT FROM 294 TO 20 FEET; CEMENT GROUT FROM 20 FEET TO LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2842.00 - 2840.00	0.0 - 2.0	TOPSOIL, BLACK, VERY SANDY; CALCAREOUS
2840.00 - 2799.00	2.0 - 43.0	SANDSTONE, GRAYISH-YELLOW-GREEN, FINE, SUBROUNDED TO SUBANGULAR; CALCITE CEMENT, PRIMARILY QUARTZ GRAINS, SOME LAYERS VERY TIGHTLY CEMENTED, ABUNDANT CALCITE ROOT CASTS OR ANIMAL BURROWS FROM 10 TO 43 FEET (ASH HOLLOW FORMATION?)
2799.00 - 2735.00	43.0 - 107.0	SANDSTONE, YELLOWISH-GRAY, FINE, PRIMARILY ROUNDED TO SUBANGULAR QUARTZ GRAINS; CALCAREOUS TO POORLY CALCAREOUS, SOME SILTY BEDS (VALENTINE FORMATION)
2735.00 - 2719.00	107.0 - 123.0	SILTSTONE, PALE-YELLOWISH-BROWN, MASSIVE(?); SLIGHTLY CALCAREOUS (LOESS?)
2719.00 - 2560.00	123.0 - 282.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SLIGHTLY SANDY; HARD, SLIGHTLY CALCAREOUS TO

NONCALCAREOUS, SANDY FROM 210 TO 240 FEET, HARD
CHERTY BED AT 210 FEET (ROSEBUD FORMATION?)

2560.00 - 2520.00

282.0 - 322.0

SILTSTONE, PALE-YELLOWISH-BROWN, VERY SANDY;
SLIGHTLY CALCAREOUS TO NONCALCAREOUS (ROSEBUD
FORMATION)

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Location Information

Legal Location:SW SW SE SE SEC. 05, T. 035 N., R. 30 W.
County:TODD Location:035N-30W-05DDCC 2
Basin:MINNECHADUZA Latitude:43 01' 53"
Hydrologic Unit Code:10150004 Longitude:100 52' 13"
Land Owner: Ground Surface Elevation (ft.):2842 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/16/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-38 Total Drill Hole Depth (ft.):108.0
Samples:

Well Information

SDGS Well Name: R2-96-38 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2844.00 T
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):110.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

THIS WELL WAS FILTER PACKED FROM 108 TO 90 FEET; THE ANNULAR SPACE WAS FILLED WITH BENTONITE GROUT FROM 90 TO 20 FEET; CEMENT GROUT FROM 20 FEET TO LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2842.00 - 2840.00	0.0 - 2.0	TOPSOIL, BLACK, VERY SANDY; CALCAREOUS
2840.00 - 2799.00	2.0 - 43.0	SANDSTONE, GRAYISH-YELLOW-GREEN, FINE, SUBROUNDED TO SUBANGULAR; CALCITE CEMENT, PRIMARILY QUARTZ GRAINS, SOME LAYERS VERY TIGHTLY CEMENTED, ABUNDANT CALCITE ROOT CASTS OR ANIMAL BURROWS FROM 10 TO 43 FEET (ASH HOLLOW FORMATION?)
2799.00 - 2734.00	43.0 - 108.0	SANDSTONE, YELLOWISH-GRAY, FINE, PRIMARILY ROUNDED TO SUBANGULAR QUARTZ GRAINS; CALCAREOUS TO POORLY CALCAREOUS, SOME SILTY BEDS (VALENTINE FORMATION)

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Location Information

Legal Location:SE SE SE SE SEC. 06, T. 035 N., R. 30 W.
County:TODD Location:035N-30W-06DDDD
Basin:MINNECHADUZA Latitude:43 01' 53"
Hydrologic Unit Code:10150004 Longitude:100 53' 11"
Land Owner: Ground Surface Elevation (ft.):2855 T

Project Information

Project:STATEWIDE MONITORING Geologist:L. SCHULZ
Drill Date:07/05/1994 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:HOLLOWSTEM Driller's Log:
Test Hole Number:R20-94-36 Total Drill Hole Depth (ft.):55.0
Samples:

Well Information

SDGS Well Name: R20-94-36 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2857.20 T
Casing Type:PVC, SCH. 40 Casing Diameter (in.):4.0
Screen Type:PVC, SCH. 40, MFG., SLOT=0.010 Screen Length (ft.):5.2
Total Casing and Screen (ft.):48.3 Casing Stick-up (ft.):2.20
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL INFORMATION: SCREENED INTERVAL FROM 48.31 TO 43.08 FEET BELOW CASING TOP.
NATURAL FILTER PACK FROM 48 TO 33.5 FEET BELOW LAND SURFACE. GRANULAR BENTONITE FROM
33.5 TO 2.1 FEET BELOW LAND SURFACE. CEMENT GROUT FROM 2.1 FEET TO GROUND LEVEL. ONE
STEEL WELL PROTECTOR INSTALLED. EAST WELL OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2855.00 - 2853.00	0.0 - 2.0	TOPSOIL
2853.00 - 2851.00	2.0 - 4.0	SAND, LIGHT-BROWN-GREEN, FINE; CLEAN
2851.00 - 2850.00	4.0 - 5.0	SANDSTONE, LIGHT-GREEN, FINE; LIGHTLY CEMENTED; HARD DRILLING
2850.00 - 2845.00	5.0 - 10.0	SAND, LIGHT-GREEN-BROWN, FINE; CLEAN, LIGHTLY CEMENTED AT 9 FEET
2845.00 - 2820.00	10.0 - 35.0	SAND AND SILT, LIGHT-GREEN, FINE SAND; HARD DRILLING
2820.00 - 2800.00	35.0 - 55.0	SAND, LIGHT-GREEN, FINE, SILTY; CLEAN, LOOSE, EASY DRILLING

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Location Information

Legal Location:SE SE SE SE SEC. 06, T. 035 N., R. 30 W.
County:TODD Location:035N-30W-06DDDD 1
Basin:MINNECHADUZA Latitude:43 01' 53"
Hydrologic Unit Code:10150004 Longitude:100 53' 11"
Land Owner: Ground Surface Elevation (ft.):2855 T

Project Information

Project:STATEWIDE MONITORING Geologist:L. SCHULZ
Drill Date:07/12/1994 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:HOLLOWSTEM Driller's Log:
Test Hole Number:R20-94-37 Total Drill Hole Depth (ft.):30.0
Samples:

Well Information

SDGS Well Name: R20-94-37 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2857.27 T
Casing Type:PVC, SCH. 40 Casing Diameter (in.):4.0
Screen Type:PVC, SCH. 40, MFG., SLOT=0.010 Screen Length (ft.):10.3
Total Casing and Screen (ft.):30.9 Casing Stick-up (ft.):2.27
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL INFORMATION: SCREENED INTERVAL FROM 30.98 TO 20.65 FEET BELOW CASING TOP.
NATURAL FILTER PACK FROM 30 TO 22.6 FEET BELOW LAND SURFACE. ARTIFICIAL PACK FROM
22.6 TO 15.2 FEET BELOW LAND SURFACE. GRANULAR BENTONITE FROM 15.2 TO 1.9 FEET BELOW
LAND SURFACE. CEMENT GROUT FROM 1.9 FEET TO GROUND LEVEL. WEST WELL OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2855.00 - 2853.00	0.0 - 2.0	TOPSOIL
2853.00 - 2851.00	2.0 - 4.0	SAND, LIGHT-BROWN-GREEN, FINE; CLEAN
2851.00 - 2850.00	4.0 - 5.0	SANDSTONE, LIGHT-GREEN, FINE; LIGHTLY CEMENTED; HARD DRILLING
2850.00 - 2845.00	5.0 - 10.0	SAND, LIGHT-GREEN-BROWN, FINE; CLEAN, LIGHTLY CEMENTED AT 9 FEET
2845.00 - 2825.00	10.0 - 30.0	SAND AND SILT, LIGHT-GREEN, FINE SAND; HARD DRILLING

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Location Information

Legal Location:SW NW NW SW SEC. 10, T. 035 N., R. 31 W.
County:TODD Location:035N-31W-10CBBC
Basin:MINNECHADUZA Latitude:43 01' 20"
Hydrologic Unit Code:10150004 Longitude:100 57' 49"
Land Owner: Ground Surface Elevation (ft.):2823 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/01/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-31 Total Drill Hole Depth (ft.):57.0
Samples:

Well Information

SDGS Well Name: R2-93-31 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2825.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):20.0
Total Casing and Screen (ft.):57.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

FILTER PACK CONSISTED OF 0.65-0.75 MM QUARTZ SAND, CEMENT GROUT PLACED FROM 30 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2823.00 - 2821.00	0.0 - 2.0	TOPSOIL, BLACK
2821.00 - 2766.00	2.0 - 57.0	SAND, PALE-YELLOW-BROWN, MEDIUM TO FINE; PRIMARILY SUBROUNDED TO SUBANGULAR CLEAR QUARTZ GRAINS WITH SOME LITHIC AND FELDSPAR GRAINS, NONCALCAREOUS, SOME THIN SILTY LENSES (VALENTINE FORMATION)

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Location Information

Legal Location:SW NW NW SW SEC. 10, T. 035 N., R. 31 W.
County:TODD Location:035N-31W-10CBBC 1
Basin:MINNECHADUZA Latitude:43 01' 20"
Hydrologic Unit Code:10150004 Longitude:100 57' 49"
Land Owner: Ground Surface Elevation (ft.):2823 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/07/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-32 Total Drill Hole Depth (ft.):962.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

HOLE PLUGGED WITH HIGH SOLIDS BENTONITE FROM 962 FEET TO SURFACE. AFTER ALLOWING TIME FOR SETTLEMENT, REMAINING OPEN HOLE WAS PLUGGED WITH CEMENT GROUT. EXPERIENCED PROBLEMS WITH LOGGER ON ORIGINAL LOG OBTAINING GOOD DATA FROM 961 TO 188 FEET. RAN SECOND LOG 09-13-1993 FROM 354 FEET TO SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2823.00 - 2813.00	0.0 - 10.0	SAND, PALE-YELLOWISH-BROWN AND DUSKY- BROWN, VERY FINE, VERY SILTY; CALCAREOUS, SOME ORGANICS (ALLUVIUM)
2813.00 - 2770.00	10.0 - 53.0	SAND, PALE-YELLOWISH-BROWN, MEDIUM TO FINE, PRIMARILY SUBROUNDED TO SUBANGULAR; MOSTLY CLEAR QUARTZ GRAINS WITH SOME LITHIC AND FELDSPAR GRAINS, NONCALCAREOUS, SOME NODULES AND ROOT CASTS, EQUID TOOTH IN 30-40 FOOT SAMPLE (VALENTINE FORMATION)
2770.00 - 2701.00	53.0 - 122.0	SANDSTONE, GRAYISH-ORANGE-PINK, VERY FINE, VERY SILTY; NONCALCAREOUS TO VERY POORLY CALCAREOUS, SOME CLAYEY SILT- STONE BEDS AT 75 TO 78 FEET (ROSEBUD FORMATION?)
2701.00 - 2533.00	122.0 - 290.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SANDY, CLAYEY; SLIGHTLY CALCAREOUS TO NONCALCAREOUS, MODERATE CEMENTING, MORE CLAYEY BELOW 180 FEET, SANDY LENSES FROM 215 TO 228 FEET (ROSEBUD FORMATION?)
2533.00 - 2489.00	290.0 - 334.0	SANDSTONE, LIGHT-BROWN, VERY FINE, SILTY; QUARTZOSE WITH SOME LITHIC AND ORGANIC CLASTS; NONCALCAREOUS TO VERY POORLY CALCAREOUS, SILTSTONE FROM 299 TO 308 FEET AND 317 TO 322 FEET (ROSEBUD FORMATION)

2489.00 - 2349.00	334.0 - 474.0	SILTSTONE, LIGHT-BROWN, SANDY, CLAYEY, POORLY FISSILE TO MASSIVE; VERY POORLY CALCAREOUS, MODERATE CEMENTING
2349.00 - 2327.00	474.0 - 496.0	SANDSTONE, PALE-YELLOWISH-BROWN, VERY FINE, VERY SILTY; CALCAREOUS
2327.00 - 2314.00	496.0 - 509.0	SILTSTONE, LIGHT-BROWN, SANDY, CLAYEY, POORLY FISSILE TO MASSIVE; SLIGHTLY CALCAREOUS, MODERATE CEMENTING
2314.00 - 2283.00	509.0 - 540.0	SANDSTONE, PALE-YELLOWISH-BROWN, MEDIUM TO COARSE GRAINED, SUBROUNDED TO SUB- ANGULAR; PRIMARILY FROSTED QUARTZ GRAINS WITH SOME PLATY LITHIC AND CHERT CLASTS, SOME FINE WHITE ASH SHARDS, SILTSTONE LAYER AT 516 TO 523 FEET (BRULE FORMATION?)
2283.00 - 2217.00	540.0 - 606.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SANDY, POORLY TO MODERATELY FISSILE; CALCAREOUS, ABUNDANT HARD ANGULAR WHITE ASH FRAGMENTS
2217.00 - 1970.00	606.0 - 853.0	SILTSTONE, PALE-OLIVE TO GRAYISH-WHITE, VERY CLAYEY, SLIGHTLY SANDY; CALCAREOUS TO POORLY CALCAREOUS, SOME TABULAR CALCITE LENSES OR FRACTURE FILL; SOME PALEOSOLS(?) OXIDIZED TO PALE-YELLOW- ISH-BROWN WITH CORRESPONDING HIGH GAMMA SPIKE, MANY ASH SHARDS (BRULE FM.?)
1970.00 - 1903.00	853.0 - 920.0	CLAYSTONE, PALE-OLIVE TO LIGHT-OLIVE- GRAY, SILTY, FISSILE TO MASSIVE; CALCAREOUS TO NONCALCAREOUS, SOME OXIDIZED INTERVALS (CHADRON FORMATION?)
1903.00 - 1861.00	920.0 - 962.0	CLAYSTONE, BROWNISH-BLACK; SLIGHTLY CALCAREOUS, HARD (PIERRE SHALE)

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Location Information

Legal Location: NW NW NE NW SEC. 09, T. 035 N., R. 32 W.
County: TODD Location: 035N-32W-09BABB
Basin: WHITE Latitude: 43 01' 52"
Hydrologic Unit Code: 10140203 Longitude: 101 05' 47"
Land Owner: MUSTANG MEADOWS Ground Surface Elevation (ft.): 2926 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 10/27/1992 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-92-56 Total Drill Hole Depth (ft.): 770.0
Samples:

Well Information

SDGS Well Name: R2-92-56 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2928.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.): 20.0
Total Casing and Screen (ft.): 680.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra: X

40 FEET OF OPEN BOTTOMED BLANK CASING BELOW SCREEN. FILTER PACK FROM 680 TO 600 FEET, GRAIN SIZE 0.030 IN. CONDUCTIVITY TRACE ALSO AVAILABLE AS 'E' LOG.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2926.00 - 2905.00	0.0 - 21.0	SAND, PALE-YELLOWISH-BROWN, FINE, SLIGHTLY SILTY, WELL-SORTED; QUARTZOSE
2905.00 - 2893.00	21.0 - 33.0	SILT, DARK-YELLOWISH-BROWN INTERBEDDED WITH OLIVE-BLACK; MICACEOUS(?), VERY CALCAREOUS, LOW DENSITY, SOME SANDY BEDS, SOME GASTROPOD SHELLS
2893.00 - 2864.00	33.0 - 62.0	SAND, PALE-YELLOW-BROWN, VERY FINE, SLIGHTLY SILTY, WELL-SORTED; QUARTZOSE
2864.00 - 2854.00	62.0 - 72.0	SAND, DARK-YELLOWISH-BROWN, VERY FINE TO FINE, SLIGHTLY SILTY; MODERATELY CEMENTED
2854.00 - 2773.00	72.0 - 153.0	SILTSTONE, YELLOWISH-BROWN, SANDY; SOME PALE-OLIVE BEDS, MASSIVE(?), NON-CALCAREOUS WITH SOME THIN CALCAREOUS BEDS, VERY CLAYEY AT 135 TO 153 FEET
2773.00 - 2746.00	153.0 - 180.0	SAND, YELLOWISH-BROWN, VERY FINE, VERY SILTY;

NONCALCAREOUS

2746.00 - 2720.00	180.0 - 206.0	SILTSTONE, YELLOWISH-BROWN, CLAYEY, SLIGHTLY SANDY; MASSIVE(?), NON- CALCAREOUS
2720.00 - 2629.00	206.0 - 297.0	SILTSTONE, LIGHT-BROWN, VERY CLAYEY; NONCALCAREOUS, MASSIVE(?), GRADES TO YELLOWISH-BROWN BELOW 220 FEET, SANDY FROM 260 TO 276 FEET
2629.00 - 2536.00	297.0 - 390.0	SILTSTONE, LIGHT-BROWN, VERY CLAYEY; NON-CALCAREOUS, MASSIVE(?), GRADES TO YELLOW-BROWN BELOW 330 FEET, SOME THIN LIMESTONE BEDS AT 385 TO 390 FEET
2536.00 - 2500.00	390.0 - 426.0	SILTSTONE, DARK-YELLOWISH-ORANGE, CLAYEY, SLIGHTLY SANDY; SOMEWHAT NODULAR, NON-CALCAREOUS, MASSIVE(?)
2500.00 - 2453.00	426.0 - 473.0	SAND, GRAYISH-ORANGE, VERY FINE, SILTY; SILTSTONE LENS AT 452 TO 462 FEET
2453.00 - 2330.00	473.0 - 596.0	SILTSTONE, LIGHT-BROWN, SANDY; NON- CALCAREOUS
2330.00 - 2310.00	596.0 - 616.0	SILTSTONE, BROWN GRADING TO LIGHT-BROWN, CLAYEY; NONCALCAREOUS
2310.00 - 2287.00	616.0 - 639.0	SANDSTONE, LIGHT-BROWN, VERY FINE, SILTY; THIN AND HARD WELL-CEMENTED BED AT 630 FEET
2287.00 - 2246.00	639.0 - 680.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SANDY AT 660 TO 680 FEET; NONCALCAREOUS
2246.00 - 2156.00	680.0 - 770.0	SILTSTONE, PALE-OLIVE, CLAYEY; SOME HARD BEDS, NONCALCAREOUS, VERY POOR CUTTINGS BELOW 700 FEET DUE TO BOREHOLE WASHOUT AT SURFACE, ABANDONED HOLE AT 770 FEET (BRULE FORMATION?)

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Location Information

Legal Location: NW NW NE NW SEC. 09, T. 035 N., R. 32 W.
County: TODD Location: 035N-32W-09BABB 1
Basin: WHITE Latitude: 43 01' 52"
Hydrologic Unit Code: 10140203 Longitude: 101 05' 47"
Land Owner: MUSTANG MEADOWS Ground Surface Elevation (ft.): 2928 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/03/1993 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-93-21 Total Drill Hole Depth (ft.): 457.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

HOLE COLLAPSED WITH RESULTANT LOSS OF HOLE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2928.00 - 2900.00	0.0 - 28.0	SAND, PALE-YELLOWISH-BROWN, FINE, SLIGHTLY SILTY, WELL-SORTED, SUBANGULAR TO SUBROUNDED; NONCALCAREOUS, QUARTZOSE, SOME LITHI FRAGMENTS
2900.00 - 2886.00	28.0 - 42.0	SILT, DARK-YELLOWISH-BROWN TO GRAYISH- BROWN, MICACEOUS(?); VERY CALCAREOUS, SOME SANDY BEDS, FEW SCATTERED GASTROPOD SHELLS (ORGANIC LAKE SILTS?)
2886.00 - 2856.00	42.0 - 72.0	SAND, PALE-OLIVE, VERY FINE, SLIGHTLY SILTY TO SILTY, FAIR SORTING, SUB- ROUNDED TO SUBANGULAR, QUARTZOSE; ABUNDANT LITHIC FRAGMENTS, WHITE ROOT CASTS OR FINE BURROWS TO 5 MM IN DIA. AT 50 TO 65 FEET, CALCAREOUS, MODERATE CEMENTING (ASH HOLLOW FORMATION)
2856.00 - 2802.00	72.0 - 126.0	SILTSTONE, DARK-YELLOWISH-BROWN, VERY SANDY, WELL CEMENTED; NONCALCAREOUS TO VERY SLIGHTLY CALCAREOUS
2802.00 - 2746.00	126.0 - 182.0	SILTSTONE, DARK-YELLOWISH-BROWN TO MODERATE-BROWN, VERY SANDY, MODERATELY CEMENTED, MASSIVE(?); NONCALCAREOUS, SEVERAL SANDY LAYERS (ARIKAREE GROUP?)
2746.00 - 2650.00	182.0 - 278.0	SILTSTONE, MODERATE-BROWN, CLAYEY, SLIGHTLY SANDY, MASSIVE(?); NONCALCAREOUS TO SLIGHTLY CALCAREOUS, VERY SANDY AT 246 TO 256 FEET AND 262 TO 274 FEET

2650.00 - 2544.00	278.0 - 384.0	SILTSTONE, LIGHT-BROWN, CLAYEY, MASSIVE; NONCALCAREOUS
2544.00 - 2501.00	384.0 - 427.0	SILTSTONE, DARK-YELLOWISH-ORANGE, CLAYEY, SLIGHTLY SANDY; NONCALCAREOUS TO VERY SLIGHTLY CALCAREOUS, SOME NODULES TO 7 MM IN DIAMETER
2501.00 - 2471.00	427.0 - 457.0	SAND, GRAYISH-ORANGE, VERY FINE, SILTY; SLIGHTLY CALCAREOUS

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Location Information

Legal Location: NW NW NE NW SEC. 09, T. 035 N., R. 32 W.
County: TODD Location: 035N-32W-09BABB 2
Basin: WHITE Latitude: 43 01' 52"
Hydrologic Unit Code: 10140203 Longitude: 101 05' 47"
Land Owner: MUSTANG MEADOWS Ground Surface Elevation (ft.): 2928 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/11/1993 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-93-24 Total Drill Hole Depth (ft.): 1092.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

THIS HOLE WAS PLUGGED FROM 1092 TO 9 FEET WITH BENTONITE GROUT (30% SOLIDS, 9.7 POUNDS PER GALLON), FROM 8 TO 3 FEET WITH CEMENT GROUT AND FROM 3 FEET TO LAND SURFACE WITH NATIVE MATERIALS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2928.00 - 2900.00	0.0 - 28.0	SAND, PALE-YELLOWISH-BROWN, FINE, SLIGHTLY SILTY, WELL-SORTED, SUBANGULAR TO SUBROUNDED; NONCALCAREOUS, QUARTZOSE, SOME LITHIC FRAGMENTS
2900.00 - 2886.00	28.0 - 42.0	SILT, DARK-YELLOWISH-BROWN TO GRAYISH- BROWN; MICACEOUS(?), VERY CALCAREOUS, SOME SANDY BEDS, FEW SCATTERED GASTROPOD SHELLS (ORGANIC LAKE SILTS?)
2886.00 - 2856.00	42.0 - 72.0	SAND, PALE-OLIVE, VERY FINE, SLIGHTLY SILTY TO SILTY, FAIR SORTING, SUB- ROUNDED TO SUBANGULAR, QUARTZOSE; ABUNDANT LITHIC FRAGMENTS, WHITE ROOT CASTS OR FINE BURROWS TO 5 MM IN DIA. AT 50 TO 65 FEET, CALCAREOUS, MODERATE CEMENTING (ASH HOLLOW FORMATION)
2856.00 - 2802.00	72.0 - 126.0	SILTSTONE, DARK-YELLOWISH-BROWN, VERY SANDY, WELL CEMENTED; NONCALCAREOUS TO VERY SLIGHTLY CALCAREOUS
2802.00 - 2746.00	126.0 - 182.0	SILTSTONE, DARK-YELLOWISH-BROWN TO MODERATE-BROWN, VERY SANDY, MODERATELY CEMENTED, MASSIVE(?); NONCALCAREOUS, SEVERAL SANDY LAYERS (ARIKAREE GROUP?)
2746.00 - 2650.00	182.0 - 278.0	SILTSTONE, MODERATE-BROWN, CLAYEY, SLIGHTLY SANDY, MASSIVE(?); NON- CALCAREOUS TO SLIGHTLY CALCAREOUS, VERY SANDY AT 246 TO 256 FEET AND

262 TO 274 FEET

2650.00 - 2544.00	278.0 - 384.0	SILTSTONE, LIGHT-BROWN, CLAYEY, MASSIVE; NONCALCAREOUS
2544.00 - 2501.00	384.0 - 427.0	SILTSTONE, DARK-YELLOWISH-ORANGE, CLAYEY, SLIGHTLY SANDY; NONCALCAREOUS TO VERY SLIGHTLY CALCAREOUS, SOME NODULES TO 7 MM IN DIAMETER
2501.00 - 2454.00	427.0 - 474.0	SAND, GRAYISH-ORANGE, VERY FINE, SILTY; SLIGHTLY CALCAREOUS, SILTSTONE LENS AT 454 TO 463 FEET
2454.00 - 2343.00	474.0 - 585.0	SILTSTONE, LIGHT-BROWN, SANDY, CLAYEY; SLIGHTLY CALCAREOUS TO NONCALCAREOUS
2343.00 - 2311.00	585.0 - 617.0	SILTSTONE, PALE-YELLOWISH-BROWN, CLAYEY, SLIGHTLY SANDY; SLIGHTLY CALCAREOUS
2311.00 - 2288.00	617.0 - 640.0	SANDSTONE, PALE-YELLOWISH-BROWN, VERY FINE, VERY SILTY, QUARTZOSE; SLIGHTLY CALCAREOUS TO CALCAREOUS
2288.00 - 2248.00	640.0 - 680.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SANDY AT 663 TO 680 FEET; SLIGHTLY CALCAREOUS TO NONCALCAREOUS
2248.00 - 2056.00	680.0 - 872.0	SILTSTONE, PALE-OLIVE, VERY CLAYEY; NON- CALCAREOUS, SOME HARD AND THIN ASH LAYERS, HIGHLY VARIABLE GAMMA TRACE (BRULE FORMATION?)
2056.00 - 2000.00	872.0 - 928.0	CLAYSTONE, LIGHT-OLIVE-GRAY TO PALE- OLIVE, SILTY; NONCALCAREOUS TO POORLY CALCAREOUS (CHADRON FORMATION?)
2000.00 - 1943.00	928.0 - 985.0	CLAYSTONE, LIGHT-OLIVE-GRAY, SILTY, SOMEWHAT FISSILE; CALCAREOUS
1943.00 - 1860.00	985.0 - 1068.0	CLAYSTONE, DARK-YELLOWISH-ORANGE, SILTY; SLIGHTLY CALCAREOUS
1860.00 - 1836.00	1068.0 - 1092.0	CLAYSTONE, GREENISH-BLACK, FISSILE; SLIGHTLY CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location: NW NW NE NW SEC. 09, T. 035 N., R. 32 W.
County: TODD Location: 035N-32W-09BABB 3
Basin: WHITE Latitude: 43 01' 52"
Hydrologic Unit Code: 10140203 Longitude: 101 05' 47"
Land Owner: MUSTANG MEADOWS Ground Surface Elevation (ft.): 2928 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
Drill Date: 08/17/1993 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-93-25 Total Drill Hole Depth (ft.): 452.0
Samples:

Well Information

SDGS Well Name: R2-93-25 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2930.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 454.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

FILTER PACK COMPRISED OF 600 LBS OF 0.65-0.75 MM QUARTZ SAND. HIGH SOLIDS BENTONITE GROUT PLACED IN REMAINDER OF HOLE. AFTER ALLOWING FOR SETTLEMENT TIME, TOP FEW FEET OF HOLE WAS FILLED WITH CEMENT GROUT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2928.00 - 2900.00	0.0 - 28.0	SAND, PALE-YELLOWISH-BROWN, FINE, SLIGHTLY SILTY, WELL-SORTED, SUBANGULAR TO SUBROUNDED; NONCALCAREOUS, QUARTZOSE, SOME LITHIC FRAGMENTS
2900.00 - 2886.00	28.0 - 42.0	SILT, DARK-YELLOWISH-BROWN TO GRAYISH- BROWN; MICACEOUS(?); VERY CALCAREOUS, SOME SANDY BEDS (ORGANIC LAKE SILTS?)
2886.00 - 2856.00	42.0 - 72.0	SAND, PALE-OLIVE, VERY FINE, SLIGHTLY SILTY TO SILTY, FAIR SORTING, SUB- ROUNDED TO SUBANGULAR, QUARTZOSE; ABUNDANT LITHIC FRAGMENTS, WHITE ROOT CASTS OR FINE BURROWS TO 5 MM IN DIA. AT 50 TO 65 FEET, CALCAREOUS, MODERATE CEMENTING (ASH HOLLOW FORMATION)
2856.00 - 2802.00	72.0 - 126.0	SILTSTONE, DARK-YELLOWISH-BROWN, VERY SANDY, WELL CEMENTED; NONCALCAROUS TO VERY SLIGHTLY CALCAREOUS

2802.00 - 2746.00	126.0 - 182.0	SILTSTONE, DARK-YELLOWISH-BROWN TO MODERATE-BROWN, VERY SANDY, MODERATELY CEMENTED, MASSIVE(?); NONCALCAREOUS, SEVERAL SANDY LAYERS (ARIKAREE GROUP?)
2746.00 - 2650.00	182.0 - 278.0	SILTSTONE, MODERATE-BROWN, CLAYEY, SLIGHTLY SANDY, MASSIVE(?); NON- CALCAREOUS TO SLIGHTLY CALCAREOUS, VERY SANDY AT 246 TO 256 AND 262 TO 274 FEET
2650.00 - 2544.00	278.0 - 384.0	SILTSTONE, LIGHT-BROWN, CLAYEY, MASSIVE; NONCALCAREOUS
2544.00 - 2501.00	384.0 - 427.0	SILTSTONE, DARK-YELLOWISH-ORANGE, CLAYEY, SLIGHTLY SANDY; NONCALCAREOUS TO VERY SLIGHTLY CALCAREOUS, SOME NODULES TO 7 MM IN DIAMETER
2501.00 - 2476.00	427.0 - 452.0	SAND, GRAYISH-ORANGE, VERY FINE, SILTY; SLIGHTLY CALCAREOUS

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Location Information

Legal Location: NW NW NE NW SEC. 09, T. 035 N., R. 32 W.
County: TODD Location: 035N-32W-09BABB 4
Basin: WHITE Latitude: 43 01' 52"
Hydrologic Unit Code: 10140203 Longitude: 101 05' 47"
Land Owner: MUSTANG MEADOWS Ground Surface Elevation (ft.): 2928 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/04/1993 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-93-22 Total Drill Hole Depth (ft.): 67.0
Samples:

Well Information

SDGS Well Name: R2-93-22 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2930.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.): 20.0
Total Casing and Screen (ft.): 69.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

FILTER PACK COMPRISED OF 800 LBS OF 0.65-0.75 MM QUARTZ SAND. REMAINDER OF OPEN HOLE FILLED WITH HIGH SOLIDS BENTONITE GROUT. AFTER ALLOWING FOR SETTLEMENT, TOP FEW FEET FILLED WITH CEMENT GROUT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2928.00 - 2900.00	0.0 - 28.0	SAND, PALE-YELLOWISH-BROWN, FINE, SLIGHTLY SILTY, WELL-SORTED, SUBANGULAR TO SUBROUNDED; NONCALCAREOUS, QUARTZOSE, SOME LITHIC FRAGMENTS
2900.00 - 2886.00	28.0 - 42.0	SILT, DARK-YELLOWISH-BROWN TO GRAYISH- BROWN; MICACEOUS(?), VERY CALCAREOUS, SOME SANDY BEDS (ORGANIC LAKE SILTS?)
2886.00 - 2861.00	42.0 - 67.0	SAND, PALE-OLIVE, VERY FINE, SLIGHTLY SILTY TO SILTY, FAIR SORTING, SUB- ROUNDED TO SUBANGULAR, QUARTZOSE; ABUNDANT LITHIC FRAGMENTS, WHITE ROOT CASTS OR FINE BURROWS TO 5 MM IN DIA. AT 50 TO 65 FEET, CALCAREOUS, MODERATE CEMENTING (ASH HOLLOW FORMATION)

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Location Information

Legal Location:SE SE SE NE SEC. 12, T. 036 N., R. 25 W.
County:TODD Location:036N-25W-12ADDD
Basin:KEYA PAHA Latitude:43 06' 40"
Hydrologic Unit Code:10150006 Longitude:100 11' 54"
Land Owner: Ground Surface Elevation (ft.):2360 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:08/10/1993 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-93-50 Total Drill Hole Depth (ft.):48.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

DRILL HOLE ABANDONED DUE TO EXCESSIVE WATER LOSS. HOLE PLUGGED WITH HIGH SOLIDS BENTONITE FROM 48 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2360.00 - 2354.00	0.0 - 6.0	SAND, PALE-YELLOWISH-BROWN, FINE TO MEDIUM
2354.00 - 2346.00	6.0 - 14.0	SILTSTONE, GRAYISH-ORANGE
2346.00 - 2332.00	14.0 - 28.0	SANDSTONE AND SILTSTONE, GRAYISH-ORANGE, FINE-GRAINED SANDSTONE
2332.00 - 2328.00	28.0 - 32.0	SAND, FINE TO MEDIUM
2328.00 - 2312.00	32.0 - 48.0	SILTSTONE, PALE-YELLOWISH-BROWN; SOME CLAY

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Location Information

Legal Location:NE NE NE NE SEC. 18, T. 036 N., R. 26 W.
County:TODD Location:036N-26W-18AAAA
Basin:KEYA PAHA Latitude:43 06' 14"
Hydrologic Unit Code:10150006 Longitude:100 24' 48"
Land Owner: Ground Surface Elevation (ft.):2547 T

Project Information

Project:MELLETTTODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/30/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-43 Total Drill Hole Depth (ft.):507.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma:X Extra:X

INDUCTION LOG WAS RUN ON THIS TEST HOLE; NATURAL GAMMA, CONDUCTIVITY, AND RESISTIVITY. THIS HOLE WAS PLUGGED FROM 507 TO 8 FEET BELOW LAND SURFACE WITH HIGH-SOLIDS BENTONITE GROUT, 8 TO 2 FEET BELOW LAND SURFACE WITH NEAT CEMENT GROUT, AND 2 FEET TO LAND SURFACE WITH NATIVE SEDIMENT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2547.00 - 2546.00	0.0 - 1.0	TOPSOIL, DARK-BROWN, SILTY
2546.00 - 2543.00	1.0 - 4.0	SAND, PALE-OLIVE, MODERATE- TO FINE-GRAINED; COMPOSED PRIMARILY OF CLEAN, YELLOW-GRAY QUARTZ AND FELDSPAR GRAINS WITHSOME LITHIC CLASTS
2543.00 - 2513.00	4.0 - 34.0	SILTSTONE, LIGHT-BROWN, SANDY; NONCALCAREOUS TO POORLY CALCAREOUS, MASSIVE TO POORLY BEDDED (ROSEBUD FORMATION?)
2513.00 - 2484.00	34.0 - 63.0	SILTSTONE, GRAYISH-ORANGE, VERY SANDY; NONCALCAREOUS, SOME PALE-YELLOWISH-BROWN WELL-CEMENTED ASHY BEDS FROM 34 TO 38 FEET AND 48 TO 55 FEET (ROSEBUD FORMATION)
2484.00 - 2265.00	63.0 - 282.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SANDY, CLAYEY; NONCALCAREOUS TO 90 FEET, SANDY LAYERS AT 102 TO 124 FEET, 180 TO 233 FEET, AND 267 TO 272 FEET (ROSEBUD FORMATION)
2265.00 - 2137.00	282.0 - 410.0	SILTSTONE, YELLOWISH-GRAY TO GRAYISH-ORANGE, SANDY, CLAYEY; VERY CALCAREOUS, VARIABLY CEMENTED, POORLY TO WELL BEDDED (BRULE FORMATION?)
2137.00 - 2070.00	410.0 - 477.0	CLAYSTONE, PALE-OLIVE TO GRAYISH-ORANGE, VERY SILTY; POORLY CALCAREOUS TO NONCALCAREOUS, POORLY BEDDED, SOME HARD CLAYSTONE AND ASHY

BEDS; SOME COARSE SAND AND GRANULES COMPOSED OF CLEAR QUARTZ AND CHERT IN LOWER 10 FEET OF THIS INTERVAL (CHADRON FORMATION)

2070.00 - 2059.00	477.0 - 488.0	CLAYSTONE, DARK-GRAY; POORLY CALCAREOUS, FISSILE (PIERRE SHALE)
2059.00 - 2040.00	488.0 - 507.0	CLAYSTONE, DARK-GRAY-BROWN; CALCAREOUS, POORLY FISSILE, ABUNDANT LIGHT-GRAY CALCAREOUS SPECKS-FORAM DEBRIS(?) (PIERRE SHALE)

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Location Information

Legal Location:NE NE NE NE SEC. 18, T. 036 N., R. 26 W.
County:TODD Location:036N-26W-18AAAA 1
Basin:KEYA PAHA Latitude:43 06' 14"
Hydrologic Unit Code:10150006 Longitude:100 24' 48"
Land Owner: Ground Surface Elevation (ft.):2547 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/30/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-44 Total Drill Hole Depth (ft.):233.0
Samples:

Well Information

SDGS Well Name: R2-96-44 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2549.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):235.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2547.00 - 2546.00	0.0 - 1.0	TOPSOIL, DARK-BROWN, SILTY
2546.00 - 2543.00	1.0 - 4.0	SAND, PALE-OLIVE, MODERATE- TO FINE-GRAINED; COMPOSED PRIMARILY OF CLEAN, YELLOW-GRAY QUARTZ AND FELDSPAR GRAINS WITH SOME LITHIC CLASTS
2543.00 - 2513.00	4.0 - 34.0	SILTSTONE, LIGHT-BROWN, SANDY; NONCALCAREOUS TO POORLY CALCAREOUS, MASSIVE TO POORLY BEDDED (ROSEBUDE FORMATION?)
2513.00 - 2484.00	34.0 - 63.0	SILTSTONE, GRAYISH-ORANGE, VERY SANDY; NONCALCAREOUS, SOME PALE-YELLOWISH-BROWN, WELL-CEMENTED ASHY BEDS FROM 34 TO 38 FEET AND 48 TO 55 FEET (ROSEBUD FORMATION)
2484.00 - 2314.00	63.0 - 233.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SANDY, CLAYEY; NONCALCAREOUS TO 90 FEET, SANDY LAYERS AT 102 TO 124 FEET, 180 TO 233 FEET (ROSEBUD FORMATION)

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Location Information

Legal Location:NE NE SE SE SEC. 31, T. 036 N., R. 26 W.
County:TODD Location:036N-26W-31DDAA
Basin:KEYA PAHA Latitude:43 02' 58"
Hydrologic Unit Code:10150006 Longitude:100 24' 49"
Land Owner: Ground Surface Elevation (ft.):2620 T

Project Information

Project:USGS HIGH PLAINS PROJECT Geologist:
Drill Date:09/25/1980 Geologist's Log:
Company:GRIMSHAW DRILLING Driller:L. WOLD
Drilling Method:ROTARY Driller's Log:X
Test Hole Number: Total Drill Hole Depth (ft.):360.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-80E Management Unit:
Other Well Name:TD 80-4 Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC, MFG. Screen Length (ft.):45.0
Total Casing and Screen (ft.):121.5 Casing Stick-up (ft.):2.00
Well Maintenance Date:06/27/1984

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

BOTTOM SECTION OF CASING WAS ATTACHED SANDPOINT. WELL GRAVEL PACKED, STAKED AND WIRE SECURED. BACKFILLED WITH MUD. CASING SLOTTED BETWEEN 60 AND 100 FEET. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148. SANDPOINT SLOTTED 120 TO 125 FEET.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2620.00 - 2560.00	0.0 - 60.0	SANDSTONE, LIGHT-TAN; LAYERS OF SILT
2560.00 - 2540.00	60.0 - 80.0	SANDSTONE, TAN; CARBONATE, GREENISH SILT, AND SAND
2540.00 - 2520.00	80.0 - 100.0	SILTSTONE, LIGHT-BROWN; BROWN, FINE- GRAINED SAND BEGINS AT ABOUT 90 FEET
2520.00 - 2500.00	100.0 - 120.0	SILTSTONE, LIGHT-BROWN; BROWN, FINE- GRAINED SAND
2500.00 - 2495.00	120.0 - 125.0	SAND POINT SLOTTED 120 TO 125 FEET
2495.00 - 2440.00	125.0 - 180.0	SILTSTONE, LIGHT-BROWN TO TAN
2440.00 - 2380.00	180.0 - 240.0	SITLSTONE, BROWN; GREEN, BLACK, AND TAN SANDS, SOME WHITE ASH, HARD DRILLING
2380.00 - 2360.00	240.0 - 260.0	SILT AND SILTSTONE, BROWN; SOME GRAY SILTSTONE

2360.00 - 2320.00	260.0 - 300.0	SILTSTONE, BROWN; WHITE CLAY
2320.00 - 2260.00	300.0 - 360.0	SILTSTONE, BROWN; GRAY CLAY, SOME PINK CLAY

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Location Information

Legal Location: NW NW NW NW SEC. 10, T. 036 N., R. 28 W.
County: TODD Location: 036N-28W-10BBBB
Basin: KEYA PAHA Latitude: 43 12' 05"
Hydrologic Unit Code: 10150006 Longitude: 100 37' 49"
Land Owner: Ground Surface Elevation (ft.): 2823 T

Project Information

Project: WATER RIGHTS Geologist: G. SELKEN
Drill Date: 12/10/1976 Geologist's Log: X
Company: COATS WELL DRILLING Driller: C. COATS
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 230.0
Samples:

Well Information

SDGS Well Name: Aquifer: OGALLALA
Water Rights Well: TD-76J Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC Screen Length (ft.): 5.0
Total Casing and Screen (ft.): 185.2 Casing Stick-up (ft.): 2.70
Well Maintenance Date: 06/25/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2823.00 - 2822.00	0.0 - 1.0	TOPSOIL
2822.00 - 2800.00	1.0 - 23.0	SAND, BROWN, FINE
2800.00 - 2797.00	23.0 - 26.0	SILTSTONE, WHITE
2797.00 - 2793.00	26.0 - 30.0	SAND, BROWN, FINE
2793.00 - 2792.00	30.0 - 31.0	SILTSTONE, WHITE; VERY HARD
2792.00 - 2761.00	31.0 - 62.0	SAND, BROWN, FINE
2761.00 - 2759.00	62.0 - 64.0	SILTSTONE, WHITE
2759.00 - 2745.00	64.0 - 78.0	SAND, BROWN, FINE
2745.00 - 2744.00	78.0 - 79.0	SILTSTONE, WHITE; VERY HARD
2744.00 - 2739.00	79.0 - 84.0	SAND, BROWN, FINE
2739.00 - 2738.00	84.0 - 85.0	SILTSTONE, WHITE; VERY HARD DRILLING
2738.00 - 2727.00	85.0 - 96.0	SAND, BROWN, FINE; TRACES OF CLAY

2727.00 - 2726.00	96.0 - 97.0	SILTSTONE, WHITE; HARD
2726.00 - 2719.00	97.0 - 104.0	CLAY, WHITE TO GRAY
2719.00 - 2674.00	104.0 - 149.0	SAND, BROWN, FINE
2674.00 - 2670.00	149.0 - 153.0	SILTSTONE, GREENISH-WHITE
2670.00 - 2657.00	153.0 - 166.0	SAND, BROWN, FINE
2657.00 - 2654.00	166.0 - 169.0	SAND, BROWN, FINE; TRACES OF CLAY
2654.00 - 2628.00	169.0 - 195.0	SAND, BROWN, FINE
2628.00 - 2606.00	195.0 - 217.0	CLAY, RED, SILTY
2606.00 - 2598.00	217.0 - 225.0	CLAY; MIXED WITH SAND; RED ROCK AT 225 FEET (ARIKAREE GROUP)

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Location Information

Legal Location:NE NW NE NW SEC. 15, T. 036 N., R. 28 W.
County:TODD Location:036N-28W-15BABA
Basin:KEYA PAHA Latitude:43 06' 13"
Hydrologic Unit Code:10150006 Longitude:100 36' 25"
Land Owner: Ground Surface Elevation (ft.):2778 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/23/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-40 Total Drill Hole Depth (ft.):867.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma:X Extra:X

INDUCTION LOG WAS RUN ON THIS TEST HOLE; NATURAL GAMMA, CONDUCTIVITY, AND RESISTIVITY. THIS HOLE WAS PLUGGED FROM 867 TO 8 FEET BELOW LAND SURFACE WITH HIGH-SOLIDS BENTONITE GROUT, 8 TO 3 FEET BELOW LAND SURFACE WITH NEAT CEMENT GROUT, AND 2 FEET TO LAND SURFACE WITH NATIVE SEDIMENT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2778.00 - 2765.00	0.0 - 13.0	SAND, PALE-YELLOWISH-BROWN, FINE- TO VERY FINE-GRAINED, WELL-ROUNDED TO SUBROUNDED; NONCALCAREOUS, COMPOSED OF COLORLESS TO PINK AND LIGHT-GREEN QUARTZ, FELDSPAR, AND SILTSTONE CLASTS (SAND HILLS FORMATION)
2765.00 - 2717.00	13.0 - 61.0	SANDSTONE, PALE-YELLOWISH-BROWN, FINE- TO VERY FINE-GRAINED, WELL-ROUNDED TO SUBROUNDED; WELL CEMENTED, CALCAREOUS, COMPOSED OF SIMILAR CLAST AS ABOVE, WHITE TUBULAR ROOT CASTS ARE COMMON (ASH HOLLOW FORMATION?)
2717.00 - 2690.00	61.0 - 88.0	SANDSTONE, GRAYISH-ORANGE-PINK, VERY FINE- TO FINE-GRAINED, SUBROUNDED, SILTY; VARIABLY CEMENTED, CALCAREOUS; PRIMARILY QUARTZ, FELDSPAR, AND WHITE SILTSTONE GRAINS
2690.00 - 2564.00	88.0 - 214.0	SANDSTONE, DARK-YELLOWISH-ORANGE, VERY FINE-GRAINED, VERY SILTY; VARIABLY CEMENTED; NONCALCAREOUS TO POORLY CALCAREOUS BELOW 130 FEET (ROSEBUD FORMATION)
2564.00 - 2414.00	214.0 - 364.0	SILTSTONE, LIGHT-BROWN, SANDY; MODERATELY CEMENTED, NONCALCAREOUS TO POORLY CALCAREOUS; SEVERAL THIN VERY FINE-GRAINED SAND LENSES BELOW 240 FEET (ROSEBUD FORMATION)
2414.00 - 2321.00	364.0 - 457.0	SILTSTONE, LIGHT-BROWN, VERY SANDY, VERY

FINE-GRAINED; POORLY TO MODERATELY CEMENTED,
NONCALCAREOUS (ROSEBUD FORMATION?)

2321.00 - 2270.00	457.0 - 508.0	SILTSTONE, GRAYISH-ORANGE-PINK, CLAYEY; CALCAREOUS, ABUNDANT MEDIUM- TO COARSE-GRAINED QUARTZ AND LITHIC SAND GRAINS WHICH ARE MATRIX SUPPORTED (ROSEBUD FORMATION?)
2270.00 - 2257.00	508.0 - 521.0	SILTSTONE, PALE-OLIVE; SLIGHTLY CALCAREOUS, MASSIVE (LOESS?)
2257.00 - 2220.00	521.0 - 558.0	SILTSTONE, LIGHT-BROWN WITH SOME PALE-OLIVE BEDS, SANDY; NONCALCAREOUS GRADING TO CALCAREOUS BELOW 540 FEET (ROSEBUD FORMATION?)
2220.00 - 2014.00	558.0 - 764.0	SILTSTONE, GRAYISH-ORANGE-PINK TO OLIVE, CLAYEY; NONCALCAREOUS TO POORLY CALCAREOUS; POORLY FISSILE; HIGH GAMMA COUNT FROM 609 TO 612 FEET (BRULE FORMATION?)
2014.00 - 1958.00	764.0 - 820.0	SILTSTONE, GRAYISH-OLIVE, CLAYEY; WELL INDURATED; POORLY CALCAREOUS; POOR SAMPLES BELOW 750 FEET (CHADRON FORMATION?)
1958.00 - 1940.00	820.0 - 838.0	SANDSTONE, YELLOWISH-GRAY, SILTY, FINE-GRAINED; COMPOSED MAINLY OF SUBANGULAR TO ROUNDED QUARTZ GRAINS (CHADRON FORMATION)
1940.00 - 1911.00	838.0 - 867.0	CLAYSTONE, DARK-OLIVE-GRAY; POORLY CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location: NE NW NE NW SEC. 15, T. 036 N., R. 28 W.
County: TODD Location: 036N-28W-15BABA 1
Basin: KEYA PAHA Latitude: 43 06' 13"
Hydrologic Unit Code: 10150006 Longitude: 100 36' 25"
Land Owner: Ground Surface Elevation (ft.): 2778 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 07/24/1996 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-96-41 Total Drill Hole Depth (ft.): 394.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2778.00 - 2765.00	0.0 - 13.0	SAND, PALE-YELLOWISH-BROWN, FINE- TO VERY FINE-GRAINED, WELL-ROUNDED TO SUBROUNDED; NONCALCAREOUS, COMPOSED OF COLORLESS TO PINK AND LIGHT-GREEN QUARTZ, FELDSPAR, AND SILTSTONE CLASTS (SAND HILLS FORMATION)
2765.00 - 2717.00	13.0 - 61.0	SANDSTONE, PALE-YELLOWISH-BROWN, FINE- TO VERY FINE-GRAINED, WELL-ROUNDED T SUBROUNDED; WELL CEMENTED, CALCAREOUS, COMPOSED OF SIMILAR CLASTS AS ABOVE, WHITE TUBULAR ROOT CASTS ARE COMMON (ASH HOLLOW FORMATION?)
2717.00 - 2690.00	61.0 - 88.0	SANDSTONE, GRAYISH-ORANGE-PINK, VERY FINE- TO FINE-GRAINED, SUBROUNDED, SILTY; VARIABLY CEMENTED, CALCAREOUS; PRIMARILY QUARTZ, FELDSPAR, AND WHITE SILTSTONE GRAINS
2690.00 - 2564.00	88.0 - 214.0	SANDSTONE, DARK-YELLOWISH-ORANGE, VERY FINE-GRAINED, VERY SILTY; VARIABLY CEMENTED; NONCALCAREOUS BELOW 130 FEET (ROSEBUD FORMATION)
2564.00 - 2414.00	214.0 - 364.0	SILTSTONE, LIGHT-BROWN, SANDY; MODERATELY CEMENTED, NONCALCAREOUS TO POORLY CALCAREOUS; SEVERAL THIN TO VERY FINE-GRAINED SAND LENSES BELOW 240 FEET (ROSEBUD FORMATION)
2414.00 - 2384.00	364.0 - 394.0	SILTSTONE, LIGHT-BROWN, VERY SANDY, VERY FINE-GRAINED; POORLY TO MODERATELY CEMENTED, NONCALCAREOUS (ROSEBUD FORMATION?)

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Location Information

Legal Location:NE NW NE NW SEC. 15, T. 036 N., R. 28 W.
County:TODD Location:036N-28W-15BABA 2
Basin:KEYA PAHA Latitude:43 06' 13"
Hydrologic Unit Code:10150006 Longitude:100 36' 25"
Land Owner: Ground Surface Elevation (ft.):2778 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/29/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-42 Total Drill Hole Depth (ft.):76.0
Samples:

Well Information

SDGS Well Name: R2-96-42 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2780.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):78.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2778.00 - 2765.00	0.0 - 13.0	SAND, PALE-YELLOWISH-BROWN, FINE- TO VERY FINE-GRAINED, WELL-ROUNDED TO SUBROUNDED; NONCALCAREOUS, COMPOSED OF COLORLESS TO PINK AND LIGHT-GREEN QUARTZ, FELDSPAR, AND SILTSTONE CLASTS (SAND HILLS FORMATION)
2765.00 - 2717.00	13.0 - 61.0	SANDSTONE, PALE-YELLOWISH-BROWN, FINE TO VERY FINE-GRAINED, WELL-ROUNDED TO SUBROUNDED; WELL CEMENTED, CALCAREOUS, COMPOSED OF SIMILAR CLAST AS ABOVE, WHITE TUBULAR ROOT CASTS ARE COMMON (ASH HOLLOW FORMATION?)
2717.00 - 2702.00	61.0 - 76.0	SANDSTONE, GRAYISH-ORANGE-PINK, VERY FINE- TO FINE-GRAINED, SUBROUNDED, SILTY; VARIABLY CEMENTED, CALCAREOUS; PRIMARILY QUARTZ, FELDSPAR, AND WHITE SILTSTONE GRAINS

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Location Information

Legal Location: NW NE NE NE SEC. 08, T. 036 N., R. 29 W.
County: TODD Location: 036N-29W-08AAAB
Basin: KEYA PAHA Latitude: 43 07' 05"
Hydrologic Unit Code: 10150006 Longitude: 100 45' 05"
Land Owner: Ground Surface Elevation (ft.): 2870 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/02/1994 Geologist's Log:
Company: SDGS Driller: D. IVERSON
Drilling Method: HOLLOWSTEM Driller's Log: X
Test Hole Number: R20-94-48 Total Drill Hole Depth (ft.): 78.0
Samples:

Well Information

SDGS Well Name: R20-94-48 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2872.00 T
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., 0.010 IN. SLOT Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 79.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

NO GEOLOGIST LOG AVAILABLE; DRILLERS LOG ONLY.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2870.00 - 2861.00	0.0 - 9.0	SAND, TAN, FINE-GRAINED
2861.00 - 2792.00	9.0 - 78.0	SAND AND SANDSTONE, TAN TO DARK-TAN, FINE-GRAINED; SOME SILT (SANDHILLS FORMATION?)
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Location Information

Legal Location:SE SE SE SE SEC. 14, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-14DDDD
Basin:KEYA PAHA Latitude:43 05' 22"
Hydrologic Unit Code:10150006 Longitude:100 41' 19"
Land Owner: Ground Surface Elevation (ft.):2885 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:06/01/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-11 Total Drill Hole Depth (ft.):972.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2885.00 - 2883.00	0.0 - 2.0	TOPSOIL, GRAYISH-BROWN (5YR 3/2)
2883.00 - 2880.00	2.0 - 5.0	SAND, DARK-YELLOWISH-BROWN (10YR 4/2), FINE- TO VERY FINE-GRAINED, SUBROUNDED; MOSTLY QUARTZ WITH ABUNDANT DARK, ORGANIC CLAY IN MATRIX, SLIGHTLY CALCAREOUS
2880.00 - 2834.00	5.0 - 51.0	SANDSTONE, PALE-OLIVE (10Y 6/2), MEDIUM- TO VERY FINE-GRAINED, SILTY, VERY SILTY AND CLAYEY FROM 42 TO 51 FEET; WELL CEMENTED TO FRIABLE, CALCAREOUS, ABUNDANT WHITE RHIZOLITHS AND ROOT CASTS FROM 10 TO 40 FEET; PREDOMINANTLY QUARTZ AND FELDSPAR GRAINS WITH FROSTED AND POLISHED SURFACES; SOME SCATTERED GRAYISH-BROWN (5YR 3/2) ORGANIC BEDS
2834.00 - 2824.00	51.0 - 61.0	SILTSTONE, LIGHT-OLIVE-GRAY (5Y 5/2), SANDY; POORLY CALCAREOUS; MODERATE-REDDISH-BROWN (10R 4/6) CLAY SEAM NEAR 55 FEET
2824.00 - 2661.00	61.0 - 224.0	SANDSTONE, LIGHT-OLIVE-GRAY (5Y 5/2) TO PALE-YELLOWISH-BROWN (10YR 6/2), MEDIUM- TO VERY FINE-GRAINED; VARIABLY CEMENTED FROM UNCONSOLIDATED TO TIGHT ARGILLACEOUS CEMENTED SANDSTONE; TIGHTLY CEMENTED AT 155 TO 190 FEET; NONCALCAREOUS; PRIMARILY QUARTZ AND FELDSPAR GRAINS BOTH FROSTED AND POLISHED SURFACES, SOME LITHIC AND CHERT CLASTS; ABUNDANT WHITE RHIZOLITHS; SOME WHITE TUFFACEOUS BEDS AT 90 AND 115 FEET, SOME CLEAN QUARTZ SAND FROM 192 TO 224 FEET (OGALLALA GROUP)

2661.00 - 2228.00	224.0 - 657.0	SILTSTONE, PALE-OLIVE (10Y 6/2) TO MODERATE-YELLOW-BROWN (10YR 5/4), SLIGHTLY SANDY, CLAYEY; NONCALCAREOUS TO POORLY CALCAREOUS, POORLY LAMINATED TO MASSIVE; BECOMING VERY SANDY AT 395 TO 402 FEET, 525 TO 537 FEET, 542 TO 548 FEET, AND 618 TO 625 FEET; TUFFACEOUS BEDS AT 505 TO 515 FEET; BLACK ORGANIC SILTSTONE LENS NEAR 655 FEET (ARIKAREE GROUP?)
2228.00 - 2005.00	657.0 - 880.0	CLAYSTONE, GRAYISH-ORANGE (10YR 7/4) TO GRAYISH-GREEN (10GY 5/2), SILTY, SLIGHTLY SANDY; NONCALCAREOUS TO SLIGHTLY CALCAREOUS (BRULE FORMATION?)
2005.00 - 1937.00	880.0 - 948.0	SILTSTONE, GRAYISH-OLIVE-GRAY (5GY 3/2) TO LIGHT-BROWN (5YR 6/4), VERY CLAYEY, SLIGHTLY SANDY; POORLY CALCAREOUS; SOME TAN TO DARK-OLIVE BANDED CHERT BEDS (CHADRON FORMATION?)
1937.00 - 1932.00	948.0 - 953.0	SAND, WHITE, COARSE- TO MEDIUM-GRAINED, SUBANGULAR TO WELL-ROUNDED; UNCONSOLIDATED; NONCALCAREOUS, MAINLY POLISHED QUARTZ, FELDSPAR, AND CHERT WITH SOME LITHIC AND DARKER MAFIC CLASTS (CHADRON FORMATION)
1932.00 - 1920.00	953.0 - 965.0	CLAYSTONE, DARK-YELLOWISH-ORANGE (10YR 6/6); NONCALCAREOUS; APPEARS WEATHERED (PIERRE SHALE)
1920.00 - 1913.00	965.0 - 972.0	CLAYSTONE, BROWNISH-BLACK (5YR 2/1); SLIGHTLY CALCAREOUS; POORLY FISSILE (PIERRE SHALE)

OGALLALA GROUP TO 224 FEET.

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Location Information

Legal Location:SE SE SE SE SEC. 14, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-14DDDD 1
Basin:KEYA PAHA Latitude:43 05' 22"
Hydrologic Unit Code:10150006 Longitude:100 41' 19"
Land Owner: Ground Surface Elevation (ft.):2885 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:06/01/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-12 Total Drill Hole Depth (ft.):225.0
Samples:

Well Information

SDGS Well Name: R2-94-12 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2887.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):227.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2885.00 - 2883.00	0.0 - 2.0	TOPSOIL, GRAYISH-BROWN (5YR 3/2)
2883.00 - 2880.00	2.0 - 5.0	SAND, DARK-YELLOWISH-BROWN (10YR 4/2), FINE- TO VERY FINE-GRAINED, SUBROUNDED; MOSTLY QUARTZ WITH ABUNDANT DARK, ORGANIC CLAY IN MATRIX, SLIGHTLY CALCAREOUS
2880.00 - 2834.00	5.0 - 51.0	SANDSTONE, PALE-OLIVE (10Y 6/2), MEDIUM- TO VERY FINE-GRAINED, SILTY, VERY SILTY AND CLAYEY FROM 42 TO 51 FEET; WELL CEMENTED TO FRIABLE, CALCAREOUS; ABUNDANT WHITE RHIZOLITHS AND ROOT CASTS FROM 10 TO 40 FEET; PREDOMINANTLY QUARTZ AND FELDSPAR GRAINS WITH FROSTED AND POLISHED SURFACES; SOME SCATTERED GRAYISH-BROWN (5YR 3/2) ORGANIC BEDS
2834.00 - 2824.00	51.0 - 61.0	SILTSTONE, LIGHT-OLIVE-GRAY (5Y 5/2), SANDY; POORLY CALCAREOUS; MODERATE-REDDISH-BROWN (10R 4/6) CLAY SEAM NEAR 55 FEET
2824.00 - 2660.00	61.0 - 225.0	SANDSTONE, LIGHT-OLIVE-GRAY (5Y 5/2) TO PALE-YELLOWISH-BROWN (10YR 6/2), MEDIUM- TO

VERY FINE-GRAINED; VARIABLY CEMENTED FROM
UNCONSOLIDATED TO TIGHT ARGILLACEOUS CEMENTED
SANDSTONE; TIGHTLY CEMENTED AT 155 TO 190 FEET;
NONCALCAREOUS; PRIMARILY QUARTZ AND FELDSPAR
GRAINS BOTH FROSTED AND POLISHED SURFACE, SOME
LITHIC AND CHERT CLASTS; ABUNDANT WHITE
RHIZOLITHS; SOME WHITE TUFFACEOUS BEDS AT 90
AND 115 FEET, SOME CLEAN QUARTZ SAND FROM 192
TO 224 FEET (OGALLALA GROUP)

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Location Information

Legal Location:SE SE SE SE SEC. 14, T. 036 N., R. 29 W.	
County:TODD	Location:036N-29W-14DDDD 2
Basin:KEYA PAHA	Latitude:43 05' 22"
Hydrologic Unit Code:10150006	Longitude:100 41' 19"
Land Owner:	Ground Surface Elevation (ft.):2885 T

Project Information

Project:MELLETTTE-TODD CO. STUDY	Geologist:R. HAMMOND
Drill Date:06/01/1994	Geologist's Log:X
Company:SDGS	Driller:G. JENSEN
Drilling Method:CORE	Driller's Log:
Test Hole Number:R20-94-44	Total Drill Hole Depth (ft.):40.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2885.00 - 2883.00	0.0 - 2.0	TOPSOIL, GRAYISH-BROWN (5YR 3/2)
2883.00 - 2880.00	2.0 - 5.0	SAND, DARK-YELLOWISH-BROWN (10YR 4/2), FINE- TO VERY FINE-GRAINED, SUBROUNDED; MOSTLY QUARTZ WITH ABUNDANT DARK, ORGANIC CLAY IN MATRIX, SLIGHTLY CALCAREOUS
2880.00 - 2845.00	5.0 - 40.0	SANDSTONE, PALE-OLIVE (10Y 6/2), MEDIUM- TO VERY FINE-GRAINED, SILTY, VERY SILTY AND CLAYEY, WELL CEMENTED TO FRIABLE; CALCAREOUS; ABUNDANT WHITE RHIZOLITHS AND ROOT CASTS FROM 10 TO 40 FEET; PREDOMINANTLY QUARTZ AND FELDSPAR GRAINS WITH FROSTED AND POLISHED SURFACES; SOME SCATTERED GRAYISH-BROWN (5YR 3/2) ORGANIC BEDS (OGALLALA GROUP)

CORE LOCATION IS LISTED AS 036N-29W-14CC IN THE SDGS CORE AND CUTTINGS DATABASE. NO DETAILED DESCRIPTION HAS BEEN FOUND FOR THIS CORE. THE LITHOLOGIC DESCRIPTIONS ARE FROM TEST HOLE R2-94-11 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION.

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Location Information

Legal Location:NE NE NE NE SEC. 16, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-16AAAA
Basin:KEYA PAHA Latitude:43 06' 13"
Hydrologic Unit Code:10150006 Longitude:100 43' 43"
Land Owner: Ground Surface Elevation (ft.):2862 T

Project Information

Project:WATER RIGHTS Geologist:G. SELKEN
Drill Date:12/08/1976 Geologist's Log:X
Company:COATS WELL DRILLING Driller:C. COATS
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):245.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-76F Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC Screen Length (ft.):
Total Casing and Screen (ft.):226.6 Casing Stick-up (ft.):2.10
Well Maintenance Date:06/24/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2862.00 - 2861.00	0.0 - 1.0	TOPSOIL, BLACK
2861.00 - 2837.00	1.0 - 25.0	SAND, GREENISH-BROWN, FINE; ROCK AT 9 FEET
2837.00 - 2785.00	25.0 - 77.0	SAND, BROWN, FINE
2785.00 - 2784.00	77.0 - 78.0	SILTSTONE, WHITE; HARD DRILLING
2784.00 - 2766.00	78.0 - 96.0	SAND, BROWN, VERY FINE; HIT ROCK AT 96 FEET, VERY HARD DRILLING
2766.00 - 2761.00	96.0 - 101.0	SILTSTONE, WHITE TO GRAY
2761.00 - 2709.00	101.0 - 153.0	SAND, BROWN, FINE
2709.00 - 2701.00	153.0 - 161.0	SAND, FINE; MIXED WITH GRAYISH CLAY
2701.00 - 2690.00	161.0 - 172.0	CLAY, YELLOWISH-BROWN; MIXED WITH BROWN SAND
2690.00 - 2674.00	172.0 - 188.0	SAND, BROWN, FINE
2674.00 - 2669.00	188.0 - 193.0	SAND, BROWN, FINE; MIXED WITH YELLOWISH-BROWNISH CLAY

2669.00 - 2654.00	193.0 - 208.0	SAND, BROWN, FINE
2654.00 - 2651.00	208.0 - 211.0	SILTSTONE, WHITE; HARD
2651.00 - 2626.00	211.0 - 236.0	SAND, BROWN, FINE
2626.00 - 2620.00	236.0 - 242.0	SILTSTONE LAYERS WITH SAND LAYERS
2620.00 - 2617.00	242.0 - 245.0	SANDSTONE, RED (ARIKAREE GROUP)

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Location Information

Legal Location: NW NE NE NE SEC. 17, T. 036 N., R. 29 W.
County: TODD Location: 036N-29W-17AAAB
Basin: KEYA PAHA Latitude: 43 06' 13"
Hydrologic Unit Code: 10150006 Longitude: 100 45' 00"
Land Owner: Ground Surface Elevation (ft.): 2885 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/02/1994 Geologist's Log:
Company: SDGS Driller: D. IVERSON
Drilling Method: HOLLOWSTEM Driller's Log: X
Test Hole Number: R20-94-47 Total Drill Hole Depth (ft.): 71.0
Samples:

Well Information

SDGS Well Name: R20-94-47 Aquifer: OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2887.00 T
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., 0.010 IN. SLOT Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 71.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

NO GEOLOGISTS LOG AVAILABLE; DRILLERS LOG ONLY.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2885.00 - 2880.00	0.0 - 5.0	SAND, TAN, FINE-GRAINED
2880.00 - 2865.00	5.0 - 20.0	SANDSTONE, DARK-TAN, FINE-GRAINED; SOME WHITE SILT
2865.00 - 2863.00	20.0 - 22.0	SILTSTONE AND SANDSTONE, WHITE SILTSTONE, TAN SANDSTONE
2863.00 - 2855.00	22.0 - 30.0	CLAY, CREAM-WHITE, SILTY
2855.00 - 2829.00	30.0 - 56.0	SANDSTONE, DARK-TAN, FINE-GRAINED
2829.00 - 2826.00	56.0 - 59.0	CLAY, TAN, SANDY, SILTY
2826.00 - 2814.00	59.0 - 71.0	SANDSTONE, DARK-TAN TO OLIVE-TAN, FINE-GRAINED

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Location Information

Legal Location:SE SE NE NE SEC. 17, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-17AADD 1
Basin:KEYA PAHA Latitude:43 06' 04"
Hydrologic Unit Code:10150006 Longitude:100 44' 54"
Land Owner: Ground Surface Elevation (ft.):2890 T

Project Information

Project:TODD-MELLETT STUDY Geologist:P. HAMMOND
Drill Date:07/10/1990 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-90-30 Total Drill Hole Depth (ft.):247.0
Samples:

Well Information

SDGS Well Name: R20-90-30 Aquifer:OGALLALA
Water Rights Well:TD-90A Management Unit:
Other Well Name: Casing Top Elevation:2892.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.):5.0
Total Casing and Screen (ft.):245.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:X
Natural Gamma:X Extra:X

RESISTIVITY NOT WORKING PROPERLY. 40 FT OF BLANK CASING (CLOSED AT BOTTOM, OPEN TO SCREEN) 243 TO 203 FT; SCREEN 203 TO 198 FT; FILTER PACK (NATIVE SEDIMENT) 247 TO 243 FT, (VERY COARSE QUARTZ SAND) 243 TO 181 FT; BENTONITE 181 TO 3 FT; CEMENT 3 TO 0 FT; LOCKING STEEL WELL PROTECTOR. SCREEN AND CASING ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2890.00 - 2867.00	0.0 - 23.0	SAND AND SANDSTONE, GREENISH TO WHITISH- BROWN, MEDIUM TO COARSE
2867.00 - 2856.00	23.0 - 34.0	SAND, GREENISH-BROWN, FINE
2856.00 - 2854.00	34.0 - 36.0	SILTSTONE, GREENISH TO WHITE; CALCAREOUS
2854.00 - 2849.00	36.0 - 41.0	SANDSTONE AND SAND, GREENISH TO WHITISH; CEMENTED SANDSTONE TO SAND
2849.00 - 2818.00	41.0 - 72.0	SAND, GREENISH-BROWN, FINE TO MEDIUM; HARDER CEMENT LAYER FROM 60 TO 61 FEET
2818.00 - 2810.00	72.0 - 80.0	SAND AND SILTSTONE, TAN, FINE TO MEDIUM
2810.00 - 2796.00	80.0 - 94.0	SAND, GREENISH-BROWN, FINE TO MEDIUM
2796.00 - 2788.00	94.0 - 102.0	SAND AND SILTSTONE, LIGHT-TAN TO WHITISH, FINE

TO MEDIUM; SMALL ROOT CASTS PRESENT

2788.00 - 2782.00	102.0 - 108.0	SAND AND SILTSTONE, GREENISH-BROWN, FINE TO MEDIUM; CALCAREOUS
2782.00 - 2775.00	108.0 - 115.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO COARSE; CALCAREOUS
2775.00 - 2750.00	115.0 - 140.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO MEDIUM; CALCAREOUS
2750.00 - 2746.00	140.0 - 144.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO COARSE; CALCAREOUS, SMALL ROOT CASTS PRESENT
2746.00 - 2738.00	144.0 - 152.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO COARSE; CALCAREOUS
2738.00 - 2731.00	152.0 - 159.0	SAND, GREENISH-BROWN, FINE TO MEDIUM; NONCALCAREOUS
2731.00 - 2678.00	159.0 - 212.0	SAND, BROWN TO GREENISH-BROWN, FINE TO MEDIUM; VERY CLEAN QUARTZ SAND, SOME VERY FINE GRAVEL AT BOTTOM OF INTERVAL
2678.00 - 2660.00	212.0 - 230.0	SILTSTONE AND CLAY, BROWNISH-PINK
2660.00 - 2643.00	230.0 - 247.0	CLAY, BROWN-RED, SANDY (ARIKAREE GROUP)

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Location Information

Legal Location:SE SE NE NE SEC. 17, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-17AADD 2
Basin:KEYA PAHA Latitude:43 06' 04"
Hydrologic Unit Code:10150006 Longitude:100 44' 54"
Land Owner: Ground Surface Elevation (ft.):2890 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:07/11/1990 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-90-31 Total Drill Hole Depth (ft.):124.0
Samples:

Well Information

SDGS Well Name: R20-90-31 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2892.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.):5.0
Total Casing and Screen (ft.):125.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREENED INTERVAL FROM 123 TO 118 FEET; FILTER PACK (VERY COARSE QUARTZ SAND) 124 TO 112 FEET; BENTONITE 112 TO 3 FEET; CEMENT 3 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED. MIDDLE WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2890.00 - 2864.00	0.0 - 26.0	SAND AND SANDSTONE, GREENISH TO WHITISH- BROWN, MEDIUM TO COARSE
2864.00 - 2858.00	26.0 - 32.0	SILTSTONE, GREENISH TO WHITE; CALCAREOUS
2858.00 - 2850.00	32.0 - 40.0	SAND AND SANDSTONE, GREENISH TO WHITISH- BROWN, MEDIUM TO COARSE
2850.00 - 2830.00	40.0 - 60.0	SAND, GREENISH TO WHITISH-BROWN, MEDIUM TO COARSE, COARSE AT TOP OF INTERVAL
2830.00 - 2816.00	60.0 - 74.0	SAND, GREENISH-BROWN, FINE TO MEDIUM
2816.00 - 2791.00	74.0 - 99.0	SAND AND SANDSTONE, GREENISH, FINE TO COARSE
2791.00 - 2789.00	99.0 - 101.0	SAND, LIGHT-TAN TO WHITISH, FINE TO COARSE; SOME CLAY

2789.00 - 2782.00 101.0 - 108.0 SAND AND SANDSTONE, LIGHT-GREENISH- BROWN, FINE
TO COARSE

2782.00 - 2766.00 108.0 - 124.0 SAND AND SANDSTONE, GREENISH-BROWN, FINE TO
COARSE

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Location Information

Legal Location:SE SE NE NE SEC. 17, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-17AADD 3
Basin:KEYA PAHA Latitude:43 06' 04"
Hydrologic Unit Code:10150006 Longitude:100 44' 54"
Land Owner: Ground Surface Elevation (ft.):2890 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:07/11/1990 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-90-32 Total Drill Hole Depth (ft.):78.0
Samples:

Well Information

SDGS Well Name: R20-90-32 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2892.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):80.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREENED INTERVAL FROM 78 TO 68 FEET; FILTER PACK (VERY COARSE QUARTZ SAND) 78 TO 60 FEET; BENTONITE 60 TO 11 FEET; CEMENT 11 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED. NORTH WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2890.00 - 2864.00	0.0 - 26.0	SAND AND SANDSTONE, GREENISH-BROWN, MEDIUM TO COARSE; SOME WHITE PIECES LOWER 8 FEET
2864.00 - 2857.00	26.0 - 33.0	SILTSTONE, GREEN TO WHITE; CALCAREOUS
2857.00 - 2850.00	33.0 - 40.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO MEDIUM SAND
2850.00 - 2845.00	40.0 - 45.0	SAND AND SANDSTONE, GREENISH-BROWN, MEDIUM TO COARSE
2845.00 - 2812.00	45.0 - 78.0	SAND, GREENISH-BROWN, FINE TO MEDIUM

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Location Information

Legal Location:NE NE SW NE SEC. 17, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-17ACAA
Basin:KEYA PAHA Latitude:43 06' 00"
Hydrologic Unit Code:10150006 Longitude:100 45' 08"
Land Owner: Ground Surface Elevation (ft.):2930 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:07/16/1990 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-90-33 Total Drill Hole Depth (ft.):107.0
Samples:

Well Information

SDGS Well Name: R20-90-33 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2932.50 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):110.0 Casing Stick-up (ft.):2.50
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREENED INTERVAL FROM 107 TO 97 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 107 TO 80 FEET; BENTONITE 80 TO 22 FEET; CEMENT 22 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2930.00 - 2904.00	0.0 - 26.0	SAND, LIGHT-BROWN, FINE TO MEDIUM
2904.00 - 2897.00	26.0 - 33.0	SAND, BROWN, FINE TO COARSE; SOME FINE PEBBLE GRAVEL, SLIGHTLY CALCAREOUS
2897.00 - 2890.00	33.0 - 40.0	SAND, BROWN, FINE TO MEDIUM; SOME FINE PEBBLE GRAVEL, NONCALCAREOUS
2890.00 - 2870.00	40.0 - 60.0	SAND, BROWN, FINE TO MEDIUM
2870.00 - 2856.00	60.0 - 74.0	SAND, BROWN, FINE TO COARSE; CALCAREOUS
2856.00 - 2823.00	74.0 - 107.0	SAND, BROWN, FINE TO MEDIUM; NONCALCAREOUS

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Location Information

Legal Location:SW NW SW NE SEC. 17, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-17ACBC
Basin:KEYA PAHA Latitude:43 05' 56"
Hydrologic Unit Code:10150006 Longitude:100 45' 25"
Land Owner: Ground Surface Elevation (ft.):2925 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:06/19/1991 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-91-25 Total Drill Hole Depth (ft.):110.0
Samples:

Well Information

SDGS Well Name: R20-91-25 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2927.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):110.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 108 TO 98 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 110 TO 90 FEET; BENTONITE 90 TO 20 FEET; CEMENT 20 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. CASING AND SCREEN ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2925.00 - 2924.00	0.0 - 1.0	TOPSOIL, BLACK
2924.00 - 2903.00	1.0 - 22.0	SAND AND SANDSTONE, WHITISH-GREENISH- BROWN, VERY FINE TO FINE, SILTY
2903.00 - 2895.00	22.0 - 30.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO FINE; SMALL AMOUNT OF WHITE CLAY PRESENT; NONCALCAREOUS
2895.00 - 2887.00	30.0 - 38.0	SAND AND SANDSTONE, GREENISH-GRAY, VERY FINE TO FINE; SOME CLAY
2887.00 - 2876.00	38.0 - 49.0	SAND AND SANDSTONE, GREEN-BROWN, VERY FINE TO FINE
2876.00 - 2866.00	49.0 - 59.0	SILTSTONE, LIGHT-WHITISH-BROWN; CALCAREOUS
2866.00 - 2853.00	59.0 - 72.0	SAND, GREENISH-BROWN, FINE TO MEDIUM; ROOT CASTS PRESENT

2853.00 - 2815.00

72.0 - 110.0

SAND, BROWN, FINE TO MEDIUM; ROOT CASTS PRESENT

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Location Information

Legal Location:SE SE NE NE SEC. 18, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-18AADD
Basin:MINNECHADUZA Latitude:43 06' 03"
Hydrologic Unit Code:10150004 Longitude:100 46' 05"
Land Owner: Ground Surface Elevation (ft.):2940 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:06/19/1991 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-91-26 Total Drill Hole Depth (ft.):127.0
Samples:

Well Information

SDGS Well Name: R20-91-26 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2942.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):125.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 123 TO 113 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 127 TO 97 FEET; BENTONITE 97 TO 22 FEET; CEMENT 22 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. CASING AND SCREEN ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2940.00 - 2913.00	0.0 - 27.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO FINE, CLAYEY
2913.00 - 2901.00	27.0 - 39.0	SAND AND SANDSTONE, GREENISH-GRAY, VERY FINE TO FINE; WITH GREEN CLAY
2901.00 - 2895.00	39.0 - 45.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO FINE, SILTY; CALCAREOUS
2895.00 - 2878.00	45.0 - 62.0	SILTSTONE, LIGHT-WHITISH-GRAY; CALCAREOUS
2878.00 - 2845.00	62.0 - 95.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO MEDIUM; SOME SILT
2845.00 - 2822.00	95.0 - 118.0	SAND, LIGHT-GREENISH-BROWN
2822.00 - 2813.00	118.0 - 127.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO MEDIUM; MANY ROOT CASTS PRESENT

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Location Information

Legal Location:SE SE SE NE SEC. 29, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-29ADDD
Basin:MINNECHADUZA Latitude:43 04' 04"
Hydrologic Unit Code:10150004 Longitude:100 44' 53"
Land Owner: Ground Surface Elevation (ft.):2855 T

Project Information

Project:STATEWIDE MONITORING Geologist:L. SCHULZ
Drill Date:06/29/1994 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:HOLLOWSTEM Driller's Log:
Test Hole Number:R20-94-34 Total Drill Hole Depth (ft.):44.0
Samples:

Well Information

SDGS Well Name: R20-94-34 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2857.23 T
Casing Type:PVC, SCH. 40 Casing Diameter (in.):4.0
Screen Type:PVC, SCH. 40, MFG., SLOT=0.010 Screen Length (ft.):5.4
Total Casing and Screen (ft.):44.6 Casing Stick-up (ft.):2.23
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL INFORMATION: SCREENED INTERVAL FROM 44.57 TO 39.20 FEET BELOW CASING TOP.
NATURAL FILTER PACK FROM 44 TO 18 FEET BELOW LAND SURFACE. GRANULAR BENTONITE FROM
18 TO 1.3 FEET BELOW LAND SURFACE. CEMENT GROUT FROM 1.3 FEET TO GROUND LEVEL. ONE
STEEL WELL PROTECTOR INSTALLED. SOUTH WELL OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2855.00 - 2851.00	0.0 - 4.0	TOPSOIL
2851.00 - 2812.00	4.0 - 43.0	SAND, LIGHT-BROWN, FINE; SOME SILT; WET AT 18 FEET; HARD DRILLING AT 19 FEET
2812.00 - 2811.00	43.0 - 44.0	SILTSTONE(?); NO RETURN, TOUGH DRILLING

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Location Information

Legal Location:SE SE SE NE SEC. 29, T. 036 N., R. 29 W.
County:TODD Location:036N-29W-29ADDD 1
Basin:MINNECHADUZA Latitude:43 04' 04"
Hydrologic Unit Code:10150004 Longitude:100 44' 53"
Land Owner: Ground Surface Elevation (ft.):2855 T

Project Information

Project:STATEWIDE MONITORING Geologist:L. SCHULZ
Drill Date:06/29/1994 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:HOLLOWSTEM Driller's Log:
Test Hole Number:R20-94-35 Total Drill Hole Depth (ft.):25.0
Samples:

Well Information

SDGS Well Name: R20-94-35 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2856.40 T
Casing Type:PVC, SCH. 40 Casing Diameter (in.):4.0
Screen Type:PVC, SCH. 40, MFG., SLOT=0.010 Screen Length (ft.):10.3
Total Casing and Screen (ft.):25.2 Casing Stick-up (ft.):1.40
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL INFORMATION: SCREENED INTERVAL FROM 25.23 TO 14.90 FEET BELOW CASING TOP.
NATURAL FILTER PACK FROM 25 TO 20 FEET BELOW LAND SURFACE. ARTIFICIAL PACK FROM 20
TO 12 FEET BELOW LAND SURFACE. GRANULAR BENTONITE FROM 12 TO 2.5 FEET BELOW LAND
SURFACE. CEMENT GROUT FROM 2.5 FEET TO GROUND LEVEL. NORTH WELL OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2855.00 - 2851.00	0.0 - 4.0	TOPSOIL
2851.00 - 2830.00	4.0 - 25.0	SAND, LIGHT-BROWN, FINE; SOME SILT; WET AT 18 FEET; HARD DRILLING AT 19 FEET

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Location Information

Legal Location: NW NW NW NW SEC. 13, T. 036 N., R. 30 W.
County: TODD Location: 036N-30W-13BBBB
Basin: MINNECHADUZA Latitude: 43 06' 12"
Hydrologic Unit Code: 10150004 Longitude: 100 48' 21"
Land Owner: Ground Surface Elevation (ft.): 2916 T

Project Information

Project: WATER RIGHTS Geologist: G. SELKEN
Drill Date: 12/06/1976 Geologist's Log: X
Company: COATS WELL DRILLING Driller: C. COATS
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 245.0
Samples:

Well Information

SDGS Well Name: Aquifer: OGALLALA
Water Rights Well: TD-76E Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC Screen Length (ft.): 5.0
Total Casing and Screen (ft.): 226.6 Casing Stick-up (ft.): 2.40
Well Maintenance Date: 06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2916.00 - 2915.00	0.0 - 1.0	TOPSOIL
2915.00 - 2836.00	1.0 - 80.0	SAND, BROWN, FINE
2836.00 - 2816.00	80.0 - 100.0	SAND, BROWN, FINE; LAYERS OF WHITE SILTSTONE
2816.00 - 2806.00	100.0 - 110.0	SAND, BROWN, FINE
2806.00 - 2795.00	110.0 - 121.0	SAND, BROWN, FINE; WITH LAYERS OF WHITE SILTSTONE
2795.00 - 2791.00	121.0 - 125.0	SILTSTONE, WHITE; HARD DRILLING
2791.00 - 2730.00	125.0 - 186.0	SAND, BROWN, FINE; WITH WHITE SILTSTONE LAYERS AT 128 TO 129, 147 TO 178 AND 176 TO 179 FEET, HARD DRILLING
2730.00 - 2726.00	186.0 - 190.0	SILTSTONE, GRAY TO GREEN; HARD DRILLING
2726.00 - 2716.00	190.0 - 200.0	SAND, BROWN, FINE
2716.00 - 2712.00	200.0 - 204.0	SILTSTONE, GRAY TO WHITE

2712.00 - 2698.00	204.0 - 218.0	SAND, BROWN, FINE
2698.00 - 2696.00	218.0 - 220.0	SILTSTONE, GRAY TO GREEN; VERY HARD DRILLING
2696.00 - 2694.00	220.0 - 222.0	SAND, BROWN, FINE
2694.00 - 2671.00	222.0 - 245.0	SILTSTONE, GRAY, GREEN; 2 FOOT LAYERS MIXED WITH FINE, BROWN SAND (ARIKAREE GROUP)

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Location Information

Legal Location: NE SW SW SW SEC. 06, T. 036 N., R. 31 W.
County: TODD Location: 036N-31W-06CCCA
Basin: WHITE Latitude: 43 07' 12"
Hydrologic Unit Code: 10140203 Longitude: 101 01' 20"
Land Owner: Ground Surface Elevation (ft.): 2612 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/18/1993 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-93-26 Total Drill Hole Depth (ft.): 767.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

THIS TEST HOLE WAS PLUGGED WITH HIGH SOLIDS BENTONITE FROM 767 TO 8 FEET, AND FROM 8 TO 3 FEET WITH CEMENT GROUT AND FROM 3 FEET TO GROUND SURFACE WITH NATIVE SOILS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2612.00 - 2600.00	0.0 - 12.0	SAND, GRAYISH-ORANGE, VERY FINE TO COARSE, PEBBLY, VERY POORLY SORTED, ANGULAR TO ROUNDED; QUARTZOSE WITH ABUNDANT LITHIC GRAINS, NONCALCAREOUS (TERRACE SANDS)
2600.00 - 2574.00	12.0 - 38.0	SAND, PALE-YELLOWISH-BROWN, FINE TO MEDIUM, SUBANGULAR TO ROUNDED; QUARTZOSE, SOME LITHIC GRAINS, NON-CALCAREOUS
2574.00 - 2562.00	38.0 - 50.0	SILTSTONE, DARK-YELLOWISH-BROWN, CLAYEY; NONCALCAREOUS (ROSEBUD FORMATION?)
2562.00 - 2498.00	50.0 - 114.0	SANDSTONE, LIGHT-BROWN, MEDIUM TO VERY COARSE, SUBROUNDED TO ANGULAR, POORLY SORTED, MODERATELY WELL CEMENTED; POORLY CALCAREOUS, PRIMARILY LOCAL LITHIC FRAGMENTS WITH COMMON TO ABUNDANT MEDIUM TO FINE QUARTZ SAND
2498.00 - 2470.00	114.0 - 142.0	SILTSTONE, MODERATE YELLOWISH-BROWN, SANDY, MASSIVE; NONCALCAREOUS (ROSEBUD FORMATION)
2470.00 - 2445.00	142.0 - 167.0	SAND, GRAYISH-ORANGE, FINE TO VERY FINE, SILTY; NONCALCAREOUS
2445.00 - 2343.00	167.0 - 269.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, CLAYEY; NONCALCAREOUS TO POORLY CALCAREOUS, SOME CHERT CHIPS, HIGH GAMMA VALUES IN POSSIBLE ASH BED AT 228 TO 232 FEET, SANDY AND CALCAREOUS AT 238 TO 269 FEET

2343.00 - 2251.00	269.0 - 361.0	SILTSTONE, MODERATE-BROWN, SANDY; CALCAREOUS, INTERBEDDED WITH PALE- OLIVE, CLAYEY SILTSTONE BELOW 310 FEET, SOME WELL BEDDED INTERVALS
2251.00 - 2223.00	361.0 - 389.0	SILTSTONE, PALE-OLIVE INTERBEDDED WITH LIGHT-BROWN, VERY CLAYEY; SEVERAL FISSILE INTERVALS, HIGH GAMMA SPIKES NEAR 360 FEET, NONCALCAREOUS (BRULE FORMATION?)
2223.00 - 2163.00	389.0 - 449.0	SILTSTONE, GRAYISH-ORANGE TO PALE-OLIVE, SANDY, SLIGHTLY CLAYEY, FISSILE TO MASSIVE; SLIGHTLY CALCAREOUS TO NON- CALCAREOUS, HIGH GAMMA SPIKE AT 409 TO 412 FEET (BRULE FORMATION?)
2163.00 - 2014.00	449.0 - 598.0	SILTSTONE, GRAYISH-ORANGE TO PALE-OLIVE, SANDY, SLIGHTLY CLAYEY, FISSILE TO MASSIVE; SLIGHTLY CALCAREOUS TO NON- CALCAREOUS, GRAYISH-ORANGE PALEOSOLS(?) AT 449 TO 460 FEET, 481 TO 486 FEET, 516 TO 532 FEET, 540 TO 552 FEET AND 560 TO 573 FEET (BRULE FORMATION?)
2014.00 - 1897.00	598.0 - 715.0	SILTSTONE, YELLOWISH-GRAY INTERBEDDED WITH DARK-YELLOWISH-ORANGE, CLAYEY, SANDY, MASSIVE; POORLY CALCAREOUS TO NONCALCAREOUS (CHADRON FORMATION?)
1897.00 - 1876.00	715.0 - 736.0	SILTSTONE, PALE-YELLOWISH-ORANGE, VERY CLAYEY, SANDY; CALCAREOUS (CHADRON FORMATION?)
1876.00 - 1845.00	736.0 - 767.0	CLAYSTONE, OLIVE-GRAY, MASSIVE TO POORLY FISSILE; SLIGHTLY CALCAREOUS TO CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:SE SW SW SE SEC. 12, T. 036 N., R. 31 W.
County:TODD Location:036N-31W-12DCCD
Basin:MINNECHADUZA Latitude:43 06' 13"
Hydrologic Unit Code:10150004 Longitude:100 54' 50"
Land Owner: Ground Surface Elevation (ft.):2899 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/16/1996 Geologist's Log:
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:X
Test Hole Number:R2-96-39 Total Drill Hole Depth (ft.):202.0
Samples:

Well Information

SDGS Well Name: R2-96-39 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2902.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.018 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):196.0 Casing Stick-up (ft.):3.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma:X Extra:X

INDUCTION LOG WAS RUN ON THIS WELL; NATURAL GAMMA, CONDUCTIVITY, AND RESISTIVITY.
WELL WAS FILTER PACKED FROM 202 TO 172 FEET BELOW LAND SURFACE; BENTONITE GROUT FROM
172 TO 20 FEET BELOW LAND SURFACE; NEAT CEMENT GROUT FROM 20 FEET TO LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2899.00 - 2897.00	0.0 - 2.0	TOPSOIL
2897.00 - 2865.00	2.0 - 34.0	SAND, FINE
2865.00 - 2814.00	34.0 - 85.0	SANDSTONE, TAN-OLIVE-GREEN
2814.00 - 2697.00	85.0 - 202.0	SILT, BROWN

NO GEOLOGISTS LOG WAS AVAILABLE FOR THIS WELL; DRILLERS LOG ONLY. BOTTOM HOLE
FORMATION IS BELIEVED TO BE ARIKAREE(?).

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Location Information

Legal Location:SE SW SW SE SEC. 12, T. 036 N., R. 31 W.
County:TODD Location:036N-31W-12DCCD 1
Basin:MINNECHADUZA Latitude:43 06' 13"
Hydrologic Unit Code:10150004 Longitude:100 54' 50"
Land Owner: Ground Surface Elevation (ft.):2899 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/07/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-46 Total Drill Hole Depth (ft.):715.0
Samples:X

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

THIS HOLE WAS PLUGGED FROM 715 TO 8 FEET WITH HIGH SOLIDS BENTONITE GROUT; 8 TO 2 FEET WITH NEAT CEMENT GROUT; 2 FEET TO LAND SURFACE WITH NATIVE SEDIMENTS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2899.00 - 2895.00	0.0 - 4.0	SAND, DUSKY-YELLOW, MEDIUM- TO FINE-GRAINED, SUBROUNDED; PRIMARILY YELLOWISH AND CLEAN QUARTZ GRAINS, SOME LITHIC AND FELDSPAR GRAINS; ABUNDANT BONE-WHITE SILTSTONE RHIZOLITHS
2895.00 - 2805.00	4.0 - 94.0	SILTSTONE, YELLOWISH-GRAY TO WHITE, SANDY; CALCAREOUS; ALTERNATING BEDS OF HARD WELL CEMENTED AND SOFTER UNCONSOLIDATED INTERVALS
2805.00 - 2797.00	94.0 - 102.0	SILTSTONE, PALE-OLIVE, SANDY; POORLY CALCAREOUS TO NONCALCAREOUS; WELL CEMENTED ASH BED AT 98 FEET (ROSEBUD FORMATION)
2797.00 - 2364.00	102.0 - 535.0	SILTSTONE, GRAYISH-ORANGE-PINK, SANDY, VERY SANDY FROM 144 TO 195 FEET AND 275 TO 360 FEET; POORLY CALCAREOUS TO NONCALCAREOUS BELOW 340 FEET; SEVERAL LIGHT-BROWN, NONCALCAREOUS PALEOSOLS(?)
2364.00 - 2209.00	535.0 - 690.0	SILTSTONE, LIGHT-BROWN, CLAYEY, WELL CEMENTED; POORLY CALCAREOUS; ABUNDANT WHITE, WELL CEMENTED ASH(?) BEDS; MODERATE-BROWN PALEOSOL(?) AT 645 TO 650 FEET (BRULE FORMATION?)
2209.00 - 2184.00	690.0 - 715.0	SILTSTONE, LIGHT-OLIVE-GRAY TO LIGHT-BROWN, CLAYEY; POORLY CALCAREOUS (CHADRON FORMATION)

THIS HOLE WAS ABANDONED PREMATURELY DUE TO ENGINE PROBLEMS. NO ELECTRIC LOG WAS ATTEMPTED. POOR RETURN OF CUTTINGS BELOW 350 FEET. DESCRIPTIONS BELOW 350 FEET ARE SUSPECT.

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Location Information

Legal Location:NE NE NE NW SEC. 14, T. 036 N., R. 31 W.
County:TODD Location:036N-31W-14BAAA
Basin:WHITE Latitude:43 06' 12"
Hydrologic Unit Code:10140203 Longitude:100 56' 05"
Land Owner: Ground Surface Elevation (ft.):2980 T

Project Information

Project:USGS HIGH PLAINS PROJECT Geologist:
Drill Date:10/16/1979 Geologist's Log:
Company:MIDLAND DRILLING Driller:
Drilling Method:ROTARY Driller's Log:X
Test Hole Number: Total Drill Hole Depth (ft.):259.0
Samples:

Well Information

SDGS Well Name: Aquifer:ARIKAREE
Water Rights Well:TD-79B Management Unit:
Other Well Name:TD-79-2 Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):1.5
Screen Type:PVC, HM. Screen Length (ft.):40.0
Total Casing and Screen (ft.):141.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

BOTTOM SECTION OF CASING IS CAPPED. WELL GRAVEL PACKED, STAKED AND WIRE SECURED.
BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST
SANDS IN THE ARIKAREE. CASING SLOTTED BETWEEN 120 AND 160 FEET. SOURCE OF DATA: USGS
OPEN-FILE REPORT 84-148.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2980.00 - 2961.00	0.0 - 19.0	SANDSTONE, LIGHT-COLORED, FINE-GRAINED; SOME DARK-COLORED PARTILCES
2961.00 - 2946.00	19.0 - 34.0	SANDSTONE, LIGHT-COLORED, FINE-GRAINED; SOME DARK-COLORED SANDSTONE
2946.00 - 2931.00	34.0 - 49.0	CLAY, LIGHT-COLORED; FINE-GRAINED SANDSTONE AT 40 FEET
2931.00 - 2916.00	49.0 - 64.0	CLAY AND SILT, CLAY IS STICKY, SILT IS LIGHT-COLORED; FINE-GRAINED SANDSTONE
2916.00 - 2901.00	64.0 - 79.0	CLAY, SILT, AND FINE-GRAINED SANDSTONE, LIGHT-COLORED; WHITE STICKY CLAY
2901.00 - 2881.00	79.0 - 99.0	CLAY, SILT, SAND, AND FINE-GRAINED SANDSTONE, LIGHT-COLORED; WHITE, STICKY CLAY

2881.00 - 2861.00	99.0 - 119.0	SILT, SAND, AND FINE-GRAINED SANDSTONE, LIGHT-COLORED; SANDIER THAN INTERVAL FROM 79 TO 99 FEET
2861.00 - 2841.00	119.0 - 139.0	SILT, SAND, AND FINE-GRAINED SANDSTONE, LIGHT-COLORED; SOME DARK GRAINS
2841.00 - 2823.00	139.0 - 157.0	SILT AND SAND, LIGHT-COLORED; SOME SANDSTONE AND SOME DARK MINERAL GRAINS
2823.00 - 2803.00	157.0 - 177.0	CLAY AND SILT, WHITE; SOME WHITE STICKY CLAY, SMALL FRAGMENTS OF GREEN MUDSTONE BEGIN ABOUT 170 FEET
2803.00 - 2783.00	177.0 - 197.0	CLAY, SAND, AND SILTSTONE, LIGHT-COLORED; SMALL FRAGMENTS OF GREEN MUDSTONE
2783.00 - 2762.00	197.0 - 218.0	SILT AND SAND, LIGHT-COLORED, FINE- GRAINED
2762.00 - 2721.00	218.0 - 259.0	CLAY AND SILT, RED; WHITE CLAY, SOME SANDSTONE PIECES

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Location Information

Legal Location:SE NW SE SW SEC. 02, T. 036 N., R. 32 W.
County:TODD Location:036N-32W-02CDBD
Basin:WHITE Latitude:43 07' 15"
Hydrologic Unit Code:10140203 Longitude:101 03' 19"
Land Owner: Ground Surface Elevation (ft.):2655 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/04/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-23 Total Drill Hole Depth (ft.):45.0
Samples:

Well Information

SDGS Well Name: R2-93-23 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2657.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):45.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

FILTER PACK CONSISTED OF 350 LBS OF 0.65-0.75 MM QUARTZ SAND PLACED AT 43 TO 30 FEET. CEMENT GROUT WAS PLACED FROM 30 FEET TO LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2655.00 - 2653.00	0.0 - 2.0	TOPSOIL, DARK-BROWN, SANDY
2653.00 - 2625.00	2.0 - 30.0	SAND, PALE-YELLOWISH-BROWN, FINE, SILTY
2625.00 - 2620.00	30.0 - 35.0	SAND, MODERATE-YELLOWISH-BROWN, FINE TO MEDIUM, SILTY
2620.00 - 2610.00	35.0 - 45.0	SAND, MODERATE-YELLOWISH-BROWN, FINE TO MEDIUM; CEMENTED

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Location Information

Legal Location:SE SE SE SE SEC. 25, T. 036 N., R. 32 W.
County:TODD Location:036N-32W-25DDDD
Basin:WHITE Latitude:43 03' 38"
Hydrologic Unit Code:10140203 Longitude:101 01' 14"
Land Owner: Ground Surface Elevation (ft.):2841 T

Project Information

Project:USGS HIGH PLAINS PROJECT Geologist:
Drill Date:09/23/1980 Geologist's Log:X
Company:GRIMSHAW DRILLING Driller:
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):500.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-80B Management Unit:
Other Well Name:TD 80-2 Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC, HM. Screen Length (ft.):45.0
Total Casing and Screen (ft.):123.5 Casing Stick-up (ft.):3.00
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

BOTTOM SECTION OF CASING HAS ATTACHED SANDPIONT. WELL IS GRAVEL PACKED, STAKED AND WIRE SECURED. BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST SANDS IN THE ARIKAREE. CASING SLOTTED BETWEEN 80 AND 120 FEET. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2841.00 - 2821.00	0.0 - 20.0	CLAY AND SAND, LIGHT-TAN, SILTY SAND, VERY FINE- TO FINE-GRAINED
2821.00 - 2761.00	20.0 - 80.0	SAND, GRAY, MEDIUM-GRAINED
2761.00 - 2741.00	80.0 - 100.0	SAND, GRAY, MEDIUM-GRAINED; BECOMING SOMEWHAT CONSOLIDATED AT 95 FEET
2741.00 - 2721.00	100.0 - 120.0	SAND, GRAY, MEDIUM-GRAINED; LIGHT-TAN CLAY, FINE-GRAINED SANDSTONE, AND SILTSTONE
2721.00 - 2701.00	120.0 - 140.0	SAND, BROWN, COARSE-GRAINED; HARD DRILLING
2701.00 - 2681.00	140.0 - 160.0	SAND, BROWN, FINE TO VERY COARSE-GRAINED
2681.00 - 2481.00	160.0 - 360.0	SILTSONE, BROWN
2481.00 - 2461.00	360.0 - 380.0	SILTSTONE, BROWN; FINE-GRAINED SAND

2461.00 - 2441.00	380.0 - 400.0	SILT, SAND, AND SILTSTONE, BROWN; SAND IS FINE-GRAINED
2441.00 - 2421.00	400.0 - 420.0	SAND AND SILTSTONE, BROWN AND TAN, SAND IS VERY FINE-GRAINED
2421.00 - 2401.00	420.0 - 440.0	SILTSTONE, BROWN AND TAN
2401.00 - 2341.00	440.0 - 500.0	SILTSTONE, BROWN AND TAN; SOME MULTI- COLORED, COARSE-GRAINED, QUARTZ SAND

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Location Information

Legal Location:NE NE NE NE SEC. 02, T. 037 N., R. 25 W.
County:TODD Location:037N-25W-02AAAA
Basin:KEYA PAHA Latitude:43 12' 55"
Hydrologic Unit Code:10150006 Longitude:100 14' 00"
Land Owner: Ground Surface Elevation (ft.):2497 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/20/1993 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-93-41 Total Drill Hole Depth (ft.):347.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

THIS HOLE WAS PLUGGED WITH HIGH SOLIDS BENTONITE GROUT FROM 347 FEET TO 8 FEET; WITH CEMENT GROUT FROM 8 FEET TO 3 FEET AND BACKFILLED WITH DRILL CUTTINGS FROM 3 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2497.00 - 2445.00	0.0 - 52.0	SAND, DUSKY-YELLOW IN UPPER 10 FEET TO GRAYISH-ORANGE; WELL-SORTED, SUB- ANGULAR TO WELL-ROUNDED; BOTH POLISHED AND FROSTED GRAINS, HIGHLY QUARTZOSE; POORLY CEMENTED, SILTY INTERVAL WITH FINE CARBONACEOUS DEBRIS FROM 28 TO 32 FEET (VALENTINE FORMATION)
2445.00 - 2439.00	52.0 - 58.0	SILTSTONE, GRAYISH-YELLOW-GREEN, NODULAR TO MASSIVE; VERY HARD, NONCALCAREOUS
2439.00 - 2401.00	58.0 - 96.0	SILTSTONE, PALE-YELLOWISH-BROWN TO GRAYISH-ORANGE, NODULAR TO MASSIVE; VERY HARD, NONCALCAROUS TO POORLY CALCAREOUS, SOME VERY HARD YELLOWISH- GRAY VERY CALCAREOUS TABULAR CLASTS PROBABLY CALCITE-RICH BURROW OR FRACTURE FILLS?
2401.00 - 2310.00	96.0 - 187.0	SILTSTONE, LIGHT-BROWN, SLIGHTLY SANDY, GRANULAR TO MASSIVE; SLIGHTLY CALCAREOUS TO NONCALCAREOUS, VERY SANDY FROM 120 TO 147 FEET, WELL- CEMENTED FROM 147 TO 187 FEET
2310.00 - 2219.00	187.0 - 278.0	SILTSTONE, LIGHT-BROWN TO PALE-YELLOWISH-BROWN, CLAYEY, MASSIVE TO NODULAR; SLIGHTLY CALCAREOUS TO NONCALCAREOUS, SOME BLACK CLAY ARMORED 5 TO 10 MM SPHERICLES AT 220 TO 240 FEET, SOME WELL-CEMENTED LAYERS AT 238 TO 278 FEET (ROSEBUD FORMATION?)

2219.00 - 2190.00	278.0 - 307.0	CLAYSTONE, GREENISH-GRAY TO LIGHT-OLIVE- GRAY, SILTY, SOME SANDY BEDS; STRONG GAMMA LOG KICK AT 278 TO 283 FEET, SOME ANGULAR CHERT CLASTS, NON- CALCAREOUS, YELLOWISH-ORANGE INTERVAL AT 300 TO 303 FEET
2190.00 - 2184.00	307.0 - 313.0	SAND, PALE-YELLOWISH-BROWN, FINE, SOMEWHAT SILTY, FAIR TO POOR SORTING, SUBANGULAR TO SUBROUNDED; SLIGHTLY CALCAREOUS, LARGELY QUARTZ CLASTS WITH MINOR LITHIC CLASTS AND CARBONACEOUS DEBRIS
2184.00 - 2150.00	313.0 - 347.0	CLAYSTONE, BROWNISH-BLACK, SLIGHTLY SILTY; SLIGHTLY CALCAREOUS TO CALCAREOUS, POORLY FISSILE, SOME THIN SOFT WHITE BENTONITE BEDS (PIERRE SHALE)

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Location Information

Legal Location: NW NW NW NW SEC. 12, T. 037 N., R. 25 W.
County: TODD Location: 037N-25W-12BBBB
Basin: KEYA PAHA Latitude: 43 12' 03"
Hydrologic Unit Code: 10150006 Longitude: 100 14' 00"
Land Owner: Ground Surface Elevation (ft.): 2403 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
Drill Date: 08/04/1993 Geologist's Log: X
Company: SDGS Driller: D. IVERSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-48 Total Drill Hole Depth (ft.): 243.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

HOLE PLUGGED WITH HIGH SOLIDS BENTONITE FROM 243 FEET TO SURFACE. AFTER ALLOWING FOR SETTLEMENT, TOP 10 FEET WAS PLUGGED WITH CEMENT GROUT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2403.00 - 2385.00	0.0 - 18.0	SAND, MODERATE-YELLOW-BROWN, FINE, SILTY, SUBANGULAR TO SUBROUNDED, WELL-SORTED; HIGHLY QUARTZOSE (VALENTINE FORMATION?)
2385.00 - 2378.00	18.0 - 25.0	SILTSTONE, DARK-YELLOWISH-ORANGE TO DARK-YELLOWISH-BROWN, SANDY, MASSIVE TO NODULAR; NONCALCAREOUS
2378.00 - 2351.00	25.0 - 52.0	SILTSTONE, DARK-YELLOWISH-BROWN TO REDDISH-BROWN, MASSIVE TO NODULAR; NONCALCAREOUS TO SLIGHTLY CALCAREOUS
2351.00 - 2304.00	52.0 - 99.0	SILTSTONE TO CLAYSTONE, PALE-YELLOWISH-BROWN, CLAYEY, MASSIVE; NONCALCAREOUS
2304.00 - 2275.00	99.0 - 128.0	SILTSTONE, PALE-YELLOWISH-BROWN, MASSIVE TO GRANULAR; NONCALCAREOUS TO SLIGHTLY CALCAREOUS
2275.00 - 2244.00	128.0 - 159.0	SILTSTONE TO CLAYSTONE, PALE-YELLOWISH-BROWN, CLAYEY, NODULAR TO MASSIVE; CALCAREOUS
2244.00 - 2218.00	159.0 - 185.0	SILTSTONE, MODERATE-YELLOWISH-BROWN TO DARK-YELLOW-BROWN, NODULAR TO MASSIVE; NONCALCAREOUS
2218.00 - 2204.00	185.0 - 199.0	SILTSTONE, MEDIUM-DARK-GRAY, NODULAR TO MASSIVE; NONCALCAREOUS, SLIGHTLY GREASY
2204.00 - 2201.00	199.0 - 202.0	SAND, GRAY, FINE TO VERY FINE, WELL-SORTED; QUARTZOSE

2201.00 - 2160.00

202.0 - 243.0

CLAY, GRAYISH-BLACK; HIGHLY CALCAREOUS (PIERRE
SHALE)

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Location Information

Legal Location: NW NW NW NW SEC. 12, T. 037 N., R. 25 W.
County: TODD Location: 037N-25W-12BBBB 1
Basin: KEYA PAHA Latitude: 43 12' 03"
Hydrologic Unit Code: 10150006 Longitude: 100 14' 00"
Land Owner: Ground Surface Elevation (ft.): 2403 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
Drill Date: 08/09/1993 Geologist's Log: X
Company: SDGS Driller: D. IVERSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-49 Total Drill Hole Depth (ft.): 52.0
Samples:

Well Information

SDGS Well Name: R20-93-49 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2405.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, SLOT SIZE 0.010 IN. Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 50.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

CASING THREADED TO SCREEN. FILTER PACK FROM 52 FEET TO 33 FEET OF 0.65 TO 0.75 MM QUARTZ SAND. BENTONITE GROUT FROM 33 FEET TO 3 FEET. METAL WELL PROTECTOR SUPPORTED BY CEMENT GROUT IN TOP 3 FEET OF HOLE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2403.00 - 2385.00	0.0 - 18.0	SAND, MODERATE-YELLOW-BROWN, FINE, SILTY, SUBANGULAR TO SUBROUNDED, WELL-SORTED; HIGHLY QUARTZOSE (VALENTINE FORMATION?)
2385.00 - 2378.00	18.0 - 25.0	SILTSTONE, DARK-YELLOWISH-ORANGE TO DARK-YELLOWISH-BROWN, SANDY, MASSIVE TO NODULAR; NONCALCAREOUS
2378.00 - 2351.00	25.0 - 52.0	SILTSTONE, DARK-YELLOWISH-BROWN TO REDDISH-BROWN, MASSIVE TO NODULAR; NONCALCAREOUS TO SLIGHTLY CALCAREOUS

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Location Information

Legal Location:NE SE SE NE SEC. 23, T. 037 N., R. 25 W.
County:TODD Location:037N-25W-23ADDA
Basin:KEYA PAHA Latitude:43 09' 56"
Hydrologic Unit Code:10150006 Longitude:100 14' 01"
Land Owner: Ground Surface Elevation (ft.):2300 T

Project Information

Project:WATER RIGHTS Geologist:D. DRISCOLL
Drill Date:08/09/1957 Geologist's Log:X
Company:GRIMSHAW DRILLING Driller:J. HUTMACHER
Drilling Method: Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):35.0
Samples:

Well Information

SDGS Well Name: Aquifer:ALLUVIUM
Water Rights Well:TD-57C Management Unit:
Other Well Name:K-3 Casing Top Elevation:
Casing Type:STEEL Casing Diameter (in.):1.3
Screen Type:UNKNOWN Screen Length (ft.):
Total Casing and Screen (ft.):29.9 Casing Stick-up (ft.):1.90
Well Maintenance Date:06/27/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2300.00 - 2286.00	0.0 - 14.0	SAND, FINE
2286.00 - 2265.00	14.0 - 35.0	SAND; VERY FIRM, HARD LAYER 2 FEET THICK, CEMENTED, ALTERNATING HARD AND SOFT CLAY, SAND LAYERS TO 35 FEET, SOME VERY HARD 1 FOOT THICK LAYERS

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Location Information

Legal Location: NW NW SW NW SEC. 24, T. 037 N., R. 25 W.
County: TODD Location: 037N-25W-24BCBB
Basin: KEYA PAHA Latitude: 43 10' 04"
Hydrologic Unit Code: 10150006 Longitude: 100 14' 00"
Land Owner: Ground Surface Elevation (ft.): 2291 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 07/19/1993 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-38 Total Drill Hole Depth (ft.): 67.0
Samples:

Well Information

SDGS Well Name: R20-93-38 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2294.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, SLOT SIZE 0.010 IN. Screen Length (ft.): 30.0
Total Casing and Screen (ft.): 62.0 Casing Stick-up (ft.): 3.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

550 LBS OF 0.65 - 0.75 MM QUARTZ SAND USED AS FILTER PACK. WELL DEVELOPED BY BACKFLUSHING WITH 500 GALLONS.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2291.00 - 2282.00	0.0 - 9.0	SAND, GRAYISH-ORANGE-PINK, MEDIUM TO COARSE, WELL-ROUNDED TO SUBANGULAR; LARGELY POLISHED QUARTZ AND LITHIC GRAINS, NONCALCAREOUS, UNCEMENTED (ALLUVIUM)
2282.00 - 2263.00	9.0 - 28.0	GRAVEL, LIGHT-BROWN, FINE TO 7 MM. IN DIAMETER, VERY SANDY, POORLY SORTED, SUBROUNDED TO SUBANGULAR; LARGELY SILTSTONE AND SANDSTONE PEBBLES, SOME FINER QUARTZ CLASTS, SLIGHTLY CALCAREOUS, SOME SLIGHTLY CEMENTED BEDS (ROSEBUD FORMATION?)
2263.00 - 2249.00	28.0 - 42.0	SILTSTONE, LIGHT-BROWN, CLAYEY, BLOCKY TO MASSIVE; SLIGHTLY CALCAREOUS, HARD (ROSEBUD FORMATION?)
2249.00 - 2233.00	42.0 - 58.0	SILTSTONE, PALE-YELLOWISH-BROWN, SANDY; APPEARS TO BE REWORKED INTO SUBROUNDED CLASTS UP TO 8 MM. IN DIAMETER, POOR RESISTIVITY RESPONSE,

CALCAREOUS TO SLIGHTLY CALCAREOUS (ROSEBUD
FORMATION?)

2233.00 - 2224.00

58.0 - 67.0

SILTSTONE, GRAYISH-ORANGE TO LIGHT-
GREENISH-GRAY, VERY CLAYEY; VERY SLIGHTLY
CALCAREOUS, SOME VERY HARD CHERTY BEDS (CHADRON
FORMATION?)

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Location Information

Legal Location: NW NW SW NW SEC. 24, T. 037 N., R. 25 W.
County: TODD Location: 037N-25W-24BCBB 1
Basin: KEYA PAHA Latitude: 43 10' 04"
Hydrologic Unit Code: 10150006 Longitude: 100 14' 00"
Land Owner: Ground Surface Elevation (ft.): 2291 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 07/19/1993 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-39 Total Drill Hole Depth (ft.): 123.0
Samples:

Well Information

SDGS Well Name: R20-93-39 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2298.50 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, SLOT SIZE 0.010 IN. Screen Length (ft.): 20.0
Total Casing and Screen (ft.): 110.0 Casing Stick-up (ft.): 7.50
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

FILTER PACK FOR THIS WELL COMPRISED OF 500 LBS OF 0.65 - 0.75 MM QUARTZ SAND.
REMAINDER OF HOLE WAS GROUTED WITH HIGH SOLIDS BENTONITE GROUT FROM 80 FEET TO 23
FEET, AND CEMENT GROUT FROM 23 FEET TO LAND SURFACE. THIS WELL FLOWS; HEAD ON
07-20-1993 WAS 5.2 FEET ABOVE LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2291.00 - 2282.00	0.0 - 9.0	SAND, GRAYISH-ORANGE-PINK, MEDIUM TO COARSE, WELL-ROUNDED TO SUBANGULAR; LARGELY POLISHED QUARTZ, ABUNDANT FROSTED QUARTZ AND LITHIC GRAINS, NONCALCAREOUS, UNCEMENTED (ALLUVIUM)
2282.00 - 2263.00	9.0 - 28.0	GRAVEL, LIGHT-BROWN, FINE TO 7 MM IN DIAMETER, VERY SANDY, POORLY SORTED, SUBROUNDED TO SUBANGULAR; LARGELY SILTSTONE AND SANDSTONE PEBBLES, SOME FINER QUARTZ CLASTS, SLIGHTLY CALCAREOUS, SOME LIGHTLY CEMENTED BEDS (ROSEBUD FORMATION?)
2263.00 - 2249.00	28.0 - 42.0	SILTSTONE, LIGHT-BROWN, CLAYEY, BLOCKY TO MASSIVE; SLIGHTLY CALCAREOUS (ROSEBUD FORMATION?)
2249.00 - 2233.00	42.0 - 58.0	SILTSTONE, PALE-YELLOWISH-BROWN, SANDY; APPEARS

TO BE REWORKED INTO SUBROUNDED CLASTS UP TO 8
MM IN DIAMETER, POOR RESISTIVITY RESPONSE,
CALCAREOUS TO SLIGHTLY CALCAREOUS (ROSEBUD
FORMATION?)

2233.00 - 2206.00	58.0 - 85.0	SILTSTONE, GRAYISH-ORANGE TO LIGHT- GREENISH-GRAY, VERY CLAYEY; VERY SLIGHTLY CALCAREOUS, SOME VERY HARD CHERTY BEDS (CHADRON FORMATION?)
2206.00 - 2181.00	85.0 - 110.0	SAND, PINKISH-GRAY, MEDIUM TO COARSE, SUBROUNDED TO SUBANGULAR; LARGELY FROSTED GRAINS, SOME CHERT AND SILT- STONE CLASTS, SOME SLIGHTLY CEMENTED BEDS, SLIGHTLY CALCAREOUS (CHADRON FORMATION?)
2181.00 - 2168.00	110.0 - 123.0	CLAYSTONE, OLIVE-BLACK, POORLY FISSILE; SOME FORAMINIFERA TESTS, CALCAREOUS, SOME LIGHT-GREENISH-GRAY BENTONITE BEDS

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Location Information

Legal Location: NW NW SW NW SEC. 24, T. 037 N., R. 25 W.
County: TODD Location: 037N-25W-24BCBB 2
Basin: KEYA PAHA Latitude: 43 10' 04"
Hydrologic Unit Code: 10150006 Longitude: 100 14' 00"
Land Owner: Ground Surface Elevation (ft.): 2291 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 07/20/1993 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-40 Total Drill Hole Depth (ft.): 33.0
Samples:

Well Information

SDGS Well Name: R20-93-40 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2294.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, SLOT SIZE 0.010 IN. Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 30.0 Casing Stick-up (ft.): 3.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DESTROYED IN SEPTEMBER 1993. HOLE PLUGGED WITH HIGH SOLIDS BENTONITE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2291.00 - 2282.00	0.0 - 9.0	SAND, GRAYISH-ORANGE-PINK, MEDIUM TO COARSE, WELL-ROUNDED TO SUBANGULAR; LARGELY POLISHED QUARTZ, ABUNDANT FROSTED QUARTZ AND LITHIC GRAINS, NONCALCAREOUS, UNCEMENTED (ALLUVIUM)
2282.00 - 2263.00	9.0 - 28.0	GRAVEL, LIGHT-BROWN, FINE TO 7 MM IN DIAMETER, VERY SANDY, POORLY SORTED, SUBROUNDED TO ANGULAR; LARGELY SILT- STONE AND SANDSTONE PEBBLES, SOME FINER QUARTZ CLASTS, SLIGHTLY CALCAREOUS, SOME LIGHTLY CEMENTED BEDS (ROSEBUD FORMATION?)
2263.00 - 2258.00	28.0 - 33.0	SILTSTONE, LIGHT-BROWN, CLAYEY, BLOCKY TO MASSIVE; SLIGHTLY CALCAREOUS, HARD (ROSEBUD FORMATION?)

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Location Information

Legal Location: NW NW SW SW SEC. 16, T. 037 N., R. 26 W.
County: TODD Location: 037N-26W-16CCBB
Basin: KEYA PAHA Latitude: 43 10' 37"
Hydrologic Unit Code: 10150006 Longitude: 100 24' 42"
Land Owner: Ground Surface Elevation (ft.): 2530 T

Project Information

Project: USGS HIGH PLAINS PROJECT Geologist:
Drill Date: 10/12/1979 Geologist's Log:
Company: MIDLAND DRILLING Driller:
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 137.0
Samples:

Well Information

SDGS Well Name: Aquifer: ARIKAREE
Water Rights Well: TD-79A Management Unit:
Other Well Name: TD 79-1 Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 1.5
Screen Type: PVC, HM. Screen Length (ft.): 30.0
Total Casing and Screen (ft.): 28.6 Casing Stick-up (ft.):
Well Maintenance Date: 06/28/1984

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

CASING SLOTTED FROM 97 TO 137 FEET. BOTTOM SECTION OF CASING CAPPED. WELL GRAVEL PACKED, STAKED AND WIRE SECURED. BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST SANDS IN THE ARIKAREE. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148. CASING APPARENTLY CAME APART.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2530.00 - 2511.00	0.0 - 19.0	SANDSTONE, WHITISH-GRAY
2511.00 - 2496.00	19.0 - 34.0	SAND AND SANDSTONE, FINE-GRAINED; SOME WHITE FINE-GRAINED SANDSTONE AND DARK-COLORED MINERALS
2496.00 - 2466.00	34.0 - 64.0	CLAY, LIGHT-BROWN, PARTIALLY INTERGRATED; PIECE OF LIMESTONE
2466.00 - 2431.00	64.0 - 99.0	CLAY AND MUDSTONE, BROWN AND GRAY; BUFF-COLORED CLAY
2431.00 - 2393.00	99.0 - 137.0	CLAY AND SILTSTONE, BROWN AND SOME WHITE

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ASH BEDS (BRULE FORMATION?)

2037.00 - 1974.00	760.0 - 823.0	CLAYSTONE, GRAYISH-ORANGE-PINK (5YR 7/2) TO GRAYISH-GREEN (10GY 5/2), SILTY, SLIGHTLY SANDY; SLIGHTLY CALCAREOUS TO NONCALCAREOUS (CHADRON FORMATION?)
1974.00 - 1954.00	823.0 - 843.0	CLAYSTONE, GRAYISH-BLACK (N2), SLIGHTLY SILTY; NONCALCAREOUS, FISSILE TO POORLY FISSILE (PIERRE SHALE)
1954.00 - 1930.00	843.0 - 867.0	CLAYSTONE, BROWNISH-BLACK (5YR 2/1), SILTY; SLIGHTLY CALCAREOUS; POORLY FISSILE TO MASSIVE (PIERRE SHALE)

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Location Information

Legal Location:SW NW NW NW SEC. 07, T. 037 N., R. 28 W.
County:TODD Location:037N-28W-07BBBC 1
Basin:KEYA PAHA Latitude:43 11' 59"
Hydrologic Unit Code:10150006 Longitude:100 41' 22"
Land Owner: Ground Surface Elevation (ft.):2793 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/27/1994 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-94-45 Total Drill Hole Depth (ft.):244.0
Samples:

Well Information

SDGS Well Name: R20-94-45 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2795.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):244.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

NORTH WELL OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2793.00 - 2755.00	0.0 - 38.0	SAND, MODERATE-YELLOWISH-BROWN (10YR 5/4), FINE- TO VERY FINE-GRAINED, ROUNDED TO SUBANGULAR; PRIMARILY QUARTZ AND FELDSPAR WITH SOME LITHIC AND OTHER DARK GRAINS; NONCALCAREOUS (SAND HILLS FORMATION)
2755.00 - 2741.00	38.0 - 52.0	SILTSTONE, PALE-YELLOWISH-GRAY (5Y 7/2), CLAYEY, SLIGHTLY SANDY, POORLY LAMINATED TO MASSIVE; SLIGHTLY CALCAREOUS TO NONCALCAREOUS (ASH HOLLOW FORMATION)
2741.00 - 2549.00	52.0 - 244.0	SANDSTONE, PALE-OLIVE (10Y 6/2), FINE- TO VERY FINE-GRAINED, VERY SILTY, WELL CEMENTED TO MODERATELY CEMENTED; MODERATELY TO SLIGHTLY CALCAREOUS; SEVERAL ASHY LENSES OR THIN BEDS, ABUNDANT BONE-WHITE RHIZOLITHS; SOME MODERATE-BROWN (5YR 3/4) ORGANIC RICH BEDS SCATTERED BELOW 70 FEET; BECOMING LESS SILTY AND ASHY BELOW 190 FEET

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Location Information

Legal Location:SW NW NW NW SEC. 07, T. 037 N., R. 28 W.
County:TODD Location:037N-28W-07BBBC 2
Basin:KEYA PAHA Latitude:43 11' 59"
Hydrologic Unit Code:10150006 Longitude:100 41' 22"
Land Owner: Ground Surface Elevation (ft.):2793 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/01/1994 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-94-46 Total Drill Hole Depth (ft.):98.0
Samples:

Well Information

SDGS Well Name: R20-94-46 Aquifer:HIGH PLAINS
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2795.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):100.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SOUTH WELL OF TWO.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2793.00 - 2755.00	0.0 - 38.0	SAND, MODERATE-YELLOWISH-BROWN (10YR 5/4), FINE- TO VERY FINE-GRAINED, ROUNDED TO SUBANGULAR; PRIMARILY QUARTZ AND FELDSPAR WITH SOME LITHIC AND OTHER DARK GRAINS; NONCALCAREOUS (SAND HILLS FORMATION)
2755.00 - 2741.00	38.0 - 52.0	SILTSTONE, PALE-YELLOWISH-GRAY (5Y 7/2), CLAYEY, SLIGHTLY SANDY, POORLY LAMINATED TO MASSIVE; SLIGHTLY CALCAREOUS TO NONCALCAREOUS (ASH HOLLOW FORMATION)
2741.00 - 2695.00	52.0 - 98.0	SANDSTONE, PALE-OLIVE (10Y 6/2), FINE- TO VERY FINE-GRAINED, VERY SILTY, WELL CEMENTED TO MODERATELY CEMENTED; MODERATELY TO SLIGHTLY CALCAREOUS; SEVERAL ASHY LENSES OR THIN BEDS, ABUNDANT BONE-WHITE RHIZOLITHS; SOME MODERATE-BROWN (5YR 3/4) ORGANIC RICH BEDS SCATTERED BELOW 70 FEET

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Location Information

Legal Location:SW SW SW SW SEC. 21, T. 037 N., R. 28 W.
County:TODD Location:037N-28W-21CCCC
Basin:KEYA PAHA Latitude:43 09' 30"
Hydrologic Unit Code:10150006 Longitude:100 38' 56"
Land Owner: Ground Surface Elevation (ft.):2772 T

Project Information

Project:WATER RIGHTS Geologist:G. SELKEN
Drill Date:12/09/1976 Geologist's Log:X
Company:COATS WELL DRILLING Driller:C. COATS
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):185.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-76H Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC Screen Length (ft.):5.0
Total Casing and Screen (ft.):166.3 Casing Stick-up (ft.):2.70
Well Maintenance Date:06/25/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2772.00 - 2771.00	0.0 - 1.0	TOPSOIL
2771.00 - 2749.00	1.0 - 23.0	SAND, BROWN, FINE
2749.00 - 2726.00	23.0 - 46.0	SAND, BROWN, VERY FINE
2726.00 - 2719.00	46.0 - 53.0	SILTSTONE, WHITE; VERY HARD DRILLING
2719.00 - 2706.00	53.0 - 66.0	SAND, BROWN, FINE
2706.00 - 2704.00	66.0 - 68.0	SILTSTONE, WHITE; HARD
2704.00 - 2695.00	68.0 - 77.0	SAND, BROWN, FINE
2695.00 - 2694.00	77.0 - 78.0	SILTSTONE, WHITE TO GREEN; HARD
2694.00 - 2678.00	78.0 - 94.0	SAND, BROWN, FINE; SOME CLAY
2678.00 - 2662.00	94.0 - 110.0	SAND, BROWN, FINE
2662.00 - 2615.00	110.0 - 157.0	SAND, LIGHT-BROWN, FINE
2615.00 - 2612.00	157.0 - 160.0	SILTSTONE, WHITE; HARD

2612.00 - 2602.00	160.0 - 170.0	SAND, BROWN, FINE; HIT A ROCK AT 170 FEET
2602.00 - 2596.00	170.0 - 176.0	SAND, BROWN, FINE
2596.00 - 2587.00	176.0 - 185.0	SILTSTONE, WHITE TO GREEN; WITH SAND LAYERS

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Location Information

Legal Location:SW SW SW SW SEC. 27, T. 037 N., R. 28 W.
County:TODD Location:037N-28W-27CCCC
Basin:KEYA PAHA Latitude:43 08' 39"
Hydrologic Unit Code:10150006 Longitude:100 37' 43"
Land Owner: Ground Surface Elevation (ft.):2805 T

Project Information

Project:WATER RIGHTS Geologist:G. SELKEN
Drill Date:12/10/1976 Geologist's Log:X
Company:COATS WELL DRILLING Driller:C. COATS
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):185.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-76I Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC Screen Length (ft.):5.0
Total Casing and Screen (ft.):186.5 Casing Stick-up (ft.):4.20
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

OLSONVILLE NW, SD QUAD.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2805.00 - 2804.00	0.0 - 1.0	TOPSOIL, BLACK
2804.00 - 2794.00	1.0 - 11.0	SAND, BROWN, FINE
2794.00 - 2792.00	11.0 - 13.0	SILTSTONE, WHITE; HARD
2792.00 - 2788.00	13.0 - 17.0	SAND, BROWN, FINE
2788.00 - 2786.00	17.0 - 19.0	SILTSTONE, WHITE; HARD DRILLING
2786.00 - 2779.00	19.0 - 26.0	SAND, BROWN, FINE
2779.00 - 2777.00	26.0 - 28.0	SILTSTONE, WHITE
2777.00 - 2745.00	28.0 - 60.0	SAND, BROWN, FINE
2745.00 - 2743.00	60.0 - 62.0	SILTSTONE, WHITE
2743.00 - 2730.00	62.0 - 75.0	SAND, BROWN, FINE

2730.00 - 2726.00	75.0 - 79.0	SILTSTONE, WHITE; VERY HARD DRILLING
2726.00 - 2717.00	79.0 - 88.0	SAND, BROWN, FINE
2717.00 - 2715.00	88.0 - 90.0	SILTSTONE, WHITE; VERY HARD DRILLING
2715.00 - 2663.00	90.0 - 142.0	SAND, BROWN, FINE
2663.00 - 2656.00	142.0 - 149.0	SAND, BROWN, FINE; TRACES OF CLAY
2656.00 - 2649.00	149.0 - 156.0	SAND, BROWN, FINE
2649.00 - 2648.00	156.0 - 157.0	SILTSTONE, WHITE
2648.00 - 2644.00	157.0 - 161.0	SAND, BROWN, FINE
2644.00 - 2642.00	161.0 - 163.0	SILTSTONE, WHITE
2642.00 - 2621.00	163.0 - 184.0	SAND, BROWN, FINE
2621.00 - 2620.00	184.0 - 185.0	SILTSTONE, WHITE TO GREEN

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Location Information

Legal Location:NE NE NW NW SEC. 30, T. 037 N., R. 28 W.
County:TODD Location:037N-28W-30BBAA
Basin:KEYA PAHA Latitude:43 09' 05"
Hydrologic Unit Code:10150006 Longitude:100 41' 03"
Land Owner: Ground Surface Elevation (ft.):2818 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:06/07/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-13 Total Drill Hole Depth (ft.):882.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2818.00 - 2792.00	0.0 - 26.0	SAND, YELLOWISH-GRAY, FINE-GRAINED, SILTY, SUBROUNDED; PRIMARILY HIGHLY QUARTZOSE GRAINS BOTH FROSTED AND POLISHED; SOME WHITE CALICHE
2792.00 - 2767.00	26.0 - 51.0	CLAY, WHITE, SLIGHTLY SILTY; SLIGHTLY CALCAREOUS; MASSIVE
2767.00 - 2757.00	51.0 - 61.0	SANDSTONE, LIGHT-OLIVE-GRAY, FINE- TO MEDIUM-GRAINED; HIGHLY QUARTZOSE; FRIABLE
2757.00 - 2733.00	61.0 - 85.0	SAND AND SANDSTONE, MODERATE-OLIVE-BROWN, FINE- TO MEDIUM-GRAINED; QUARTZOSE GRAINS WITH BOTH FROSTED AND POLISHED SURFACES; NONCALCAREOUS; SOME WHITE SILTY LAYERS
2733.00 - 2696.00	85.0 - 122.0	SILTSTONE AND CLAYSTONE, WHITE; CALCAREOUS; MASSIVE
2696.00 - 2587.00	122.0 - 231.0	SAND, MODERATE-OLIVE-BROWN, FINE- TO MEDIUM-GRAINED, SUBANGULAR TO SUBROUNDED; HIGHLY QUARTZOSE; NONCALCAREOUS; SOME YELLOWISH-GRAY CLAYEY BEDS IN UPPER 30 FEET AND LOWER 20 FEET OF THIS INTERVAL
2587.00 - 2563.00	231.0 - 255.0	CLAY, YELLOWISH-GRAY, SILTY, SANDY; NONCALCAREOUS (OGALLALA GROUP)
2563.00 - 2513.00	255.0 - 305.0	SILTSTONE, MODERATE-BROWN, CLAYEY, SANDY; NONCALCAREOUS; MASSIVE; SOME BENTONITIC HORIZONS
2513.00 - 2501.00	305.0 - 317.0	SANDSTONE, MODERATE-BROWN, FINE- TO

MEDIUM-GRAINED, FAIRLY WELL CEMENTED; SOME THIN INTERBEDDED CLAY LAYERS

2501.00 - 2301.00	317.0 - 517.0	SILTSTONE, MODERATE-BROWN, CLAYEY, SANDY; NONCALCAREOUS, MASSIVE; SOME BENTONITIC LAYERS AT 410 TO 420 FEET, SOME WHITISH-BLACK STREAKED ORGANIC AND CALCAREOUS CLAY AT 435 TO 450 FEET; BECOMING MORE SANDY FROM 390 TO 410 FEET; SOME BLACK ORGANIC LAYERS FROM 470 TO 480 FEET
2301.00 - 2278.00	517.0 - 540.0	CLAY, DARK-YELLOWISH-ORANGE, SILTY; NONCALCAREOUS, MASSIVE; BENTONITIC CLAYS FROM 520 TO 530 FEET
2278.00 - 2238.00	540.0 - 580.0	SILTSTONE, DARK-YELLOWISH-ORANGE, CLAYEY; NONCALCAREOUS; SOME SAND (ARIKAREE GROUP?)
2238.00 - 2208.00	580.0 - 610.0	CLAYSTONE, DUSK-YELLOWISH-BROWN; NONCALCAREOUS; SOME SILTY LAYERS; NODULAR (BRULE FORMATION?)
2208.00 - 2133.00	610.0 - 685.0	CLAY AND CLAYSTONE, DUSK-YELLOWISH-BROWN, SILTY; GREASY, NONCALCAREOUS TO MODERATELY CALCAREOUS; SOME GREENISH-GRAY BEDS PRESENT
2133.00 - 2016.00	685.0 - 802.0	CLAY AND CLAYSTONE, PALE-YELLOWISH-BROWN TO MODERATE-BROWN TO WHITE AND GREENISH-GRAY, MASSIVE; MODERATELY CALCAREOUS TO HIGHLY CALCAREOUS (CHADRON FORMATION?)
2016.00 - 1971.00	802.0 - 847.0	CLAYSTONE, DUSKY-YELLOW-GREEN AND PALE-BROWN, MASSIVE; NONCALCAREOUS; SOME WHITE BENTONITIC CLAY LAYERS
1971.00 - 1963.00	847.0 - 855.0	SAND, CLEAR, MEDIUM- TO COARSE-GRAINED, SUBANGULAR TO SUBROUNDED, CLEAN; HIGHLY QUARTZOSE; A FEW LITHIC GRAINS
1963.00 - 1936.00	855.0 - 882.0	CLAY, DUSK-GRAY; GREASY, NONCALCAREOUS TO SLIGHTLY CALCAREOUS (PIERRE SHALE)

BASE OF THE OGALLALA GROUP AT 255(?) FEET; BASE OF ARIKAREE FORMATION AT 580(?) FEET.

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Location Information

Legal Location:NE NE NW NW SEC. 30, T. 037 N., R. 28 W.
County:TODD Location:037N-28W-30BBAA 1
Basin:KEYA PAHA Latitude:43 09' 05"
Hydrologic Unit Code:10150006 Longitude:100 41' 03"
Land Owner: Ground Surface Elevation (ft.):2818 T

Project Information

Project:MELLETT-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:06/14/1994 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-14 Total Drill Hole Depth (ft.):317.0
Samples:

Well Information

SDGS Well Name: R2-94-14 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2820.00 T
Casing Type:PVC Casing Diameter (in.):
Screen Type: Screen Length (ft.):
Total Casing and Screen (ft.):315.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

THIS IS ASSUMED TO BE A MONITORING WELL DRILLED FOR THE MELLETT-TODD CO. STUDY.
DRILLER REPORTED 315 FEET OF PLASTIC. NO OTHER WELL INFORMATION IS AVAILABLE. THE
STICK-UP IS ASSUMED TO BE 2 FEET.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2818.00 - 2792.00	0.0 - 26.0	SAND, YELLOWISH-GRAY, FINE-GRAINED, SILTY, SUBROUNDED; PRIMARILY HIGHLY QUARTZOSE GRAINS BOTH FROSTED AND POLISHED; SOME WHITE CALICHE
2792.00 - 2767.00	26.0 - 51.0	CLAY, WHITE, SLIGHTLY SILTY; SLIGHTLY CALCAREOUS; MASSIVE
2767.00 - 2757.00	51.0 - 61.0	SANDSTONE, LIGHT-OLIVE-GRAY, FINE- TO MEDIUM-GRAINED; HIGHLY QUARTZOSE; FRIABLE
2757.00 - 2733.00	61.0 - 85.0	SAND AND SANDSTONE, MODERATE-OLIVE-BROWN, FINE- TO MEDIUM-GRAINED; QUARTZOSE GRAINS WITH BOTH FROSTED AND POLISHED SURFACES; NONCALCAREOUS; SOME WHITE SILTY LAYERS
2733.00 - 2696.00	85.0 - 122.0	SILTSTONE AND CLAYSTONE, WHITE; CALCAREOUS; MASSIVE
2696.00 - 2587.00	122.0 - 231.0	SAND, MODERATE-OLIVE-BROWN, FINE- TO

MEDIUM-GRAINED, SUBANGULAR TO SUBROUNDED;
HIGHLY QUARTZOSE; NONCALCAREOUS; SOME
YELLOWISH-GRAY CLAYEY BEDS IN UPPER 30 FEET AND
LOWER 20 FEET OF THIS INTERVAL

2587.00 - 2563.00	231.0 - 255.0	CLAY, YELLOWISH-GRAY, SILTY, SANDY; NONCALCAREOUS (OGALLALA GROUP)
2563.00 - 2513.00	255.0 - 305.0	SILTSTONE, MODERATE-BROWN, CLAYEY, SANDY; NONCALCAREOUS; MASSIVE; SOME BENTONITIC HORIZONS
2513.00 - 2501.00	305.0 - 317.0	SANDSTONE, MODERATE-BROWN, FINE- TO MEDIUM-GRAINED; FAIRLY WELL CEMENTED; SOME THIN INTERBEDDED CLAY LAYERS

NO GEOLOGISTS LOG WAS AVAILABLE FOR THIS WELL. LITHOLOGY IS TAKEN FROM TEST-HOLE
R2-94-13 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION. THE BASE OF THE OGALLALA
GROUP AT 255(?) FEET.

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Location Information

Legal Location: NW SW SW SW SEC. 30, T. 037 N., R. 28 W.
County: TODD Location: 037N-28W-30CCCB
Basin: KEYA PAHA Latitude: 43 08' 42"
Hydrologic Unit Code: 10150006 Longitude: 100 41' 17"
Land Owner: Ground Surface Elevation (ft.): 2770 T

Project Information

Project: WATER RIGHTS Geologist: G. SELKEN
Drill Date: 12/09/1976 Geologist's Log: X
Company: COATS WELL DRILLING Driller: C. COATS
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 200.0
Samples:

Well Information

SDGS Well Name: Aquifer: OGALLALA
Water Rights Well: TD-76G Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC Screen Length (ft.): 5.0
Total Casing and Screen (ft.): 186.4 Casing Stick-up (ft.): 2.30
Well Maintenance Date: 06/25/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2770.00 - 2769.00	0.0 - 1.0	TOPSOIL, BLACK
2769.00 - 2744.00	1.0 - 26.0	SAND, BROWN, FINE
2744.00 - 2733.00	26.0 - 37.0	CLAY, GRAYISH-WHITE; MIXED WITH SAND
2733.00 - 2729.00	37.0 - 41.0	SAND, BROWN, FINE
2729.00 - 2723.00	41.0 - 47.0	CLAY, GRAYISH-WHITE; WITH SAND
2723.00 - 2712.00	47.0 - 58.0	SAND, BROWN, FINE
2712.00 - 2710.00	58.0 - 60.0	SILTSTONE, WHITE; HARD
2710.00 - 2664.00	60.0 - 106.0	SAND, BROWN, FINE
2664.00 - 2662.00	106.0 - 108.0	SILTSTONE, WHITE; HARD
2662.00 - 2630.00	108.0 - 140.0	SAND, BROWN, FINE
2630.00 - 2574.00	140.0 - 196.0	SAND, BROWN, VERY FINE
2574.00 - 2572.00	196.0 - 198.0	SILTSTONE, WHITE TO GREEN; HARD

2572.00 - 2570.00

198.0 - 200.0

SILTSTONE, RED (ARIKAREE GROUP)

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Location Information

Legal Location:NE NE NE NE SEC. 16, T. 037 N., R. 29 W.
County:TODD Location:037N-29W-16AAAA
Basin:WHITE Latitude:43 11' 10"
Hydrologic Unit Code:10140203 Longitude:100 44' 56"
Land Owner: Ground Surface Elevation (ft.):2857 T

Project Information

Project:WATER RIGHTS Geologist:J. GOODMAN
Drill Date:11/30/1976 Geologist's Log:X
Company:COATS WELL DRILLING Driller:F. COATS
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):200.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-76A Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC Screen Length (ft.):5.0
Total Casing and Screen (ft.):186.8 Casing Stick-up (ft.):3.00
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2857.00 - 2856.00	0.0 - 1.0	TOPSOIL, BLACK
2856.00 - 2842.00	1.0 - 15.0	SILTSTONE, BROWN-TAN
2842.00 - 2817.00	15.0 - 40.0	SILTSTONE (GREEN-WHITE)
2817.00 - 2767.00	40.0 - 90.0	SAND, GRAY-BROWN, VERY FINE; WITH WHITE, CARBONATE(?) SILTSTONE LAYERS INTERBEDDED
2767.00 - 2702.00	90.0 - 155.0	SAND, BROWN, FINE, ROUNDED; CLEAN
2702.00 - 2680.00	155.0 - 177.0	SAND, BROWN, FINE, ROUNDED
2680.00 - 2665.00	177.0 - 192.0	SAND, REDDISH-BROWN, FINE; CLEAN
2665.00 - 2657.00	192.0 - 200.0	SILTSTONE, GREEN TO WHITE; SOME RED SILT, PROBABLY ON BEDROCK (ARIKAREE GROUP)

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Location Information

Legal Location:SW SW SW SW SEC. 22, T. 037 N., R. 29 W.
County:TODD Location:037N-29W-22CCCC
Basin:KEYA PAHA Latitude:43 09' 29"
Hydrologic Unit Code:10150006 Longitude:100 44' 51"
Land Owner: Ground Surface Elevation (ft.):2881 T

Project Information

Project:USGS HIGH PLAINS PROJECT Geologist:
Drill Date:09/24/1980 Geologist's Log:X
Company:GRIMSHAW DRILLING Driller:L. WOLD
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):520.0
Samples:

Well Information

SDGS Well Name: Aquifer:ARIKAREE
Water Rights Well:TD-80C Management Unit:
Other Well Name:TD 80-4 Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):
Screen Type:PVC, MFG. Screen Length (ft.):45.0
Total Casing and Screen (ft.):261.9 Casing Stick-up (ft.):
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

CASING SLOTTED FROM 220 TO 260 FEET. BOTTOM SECTION OF CASING HAS ATTACHED 5-FOOT SANDPOINT. WELL GRAVEL PACKED, STAKED AND WIRE SECURED. BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST SANDS IN THE ARIKAREE. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2881.00 - 2861.00	0.0 - 20.0	SANDSTONE, LIGHT-TAN TO LIGHT-GRAY; SOME WHITE VOLCANIC ASH
2861.00 - 2781.00	20.0 - 100.0	SANDSTONE, LIGHT-TAN TO LIGHT-GRAY
2781.00 - 2761.00	100.0 - 120.0	SANDSTONE, LIGHT-TAN; LIGHT-GREEN SAND, SOME CARBONATE
2761.00 - 2721.00	120.0 - 160.0	SANDSTONE, LIGHT-TAN TO GRAY, FINE- GRAINED
2721.00 - 2701.00	160.0 - 180.0	SAND, GRAY, FINE TO MEDIUM; WITH MULTI- COLORED SPECKS.
2701.00 - 2661.00	180.0 - 220.0	SAND, BROWN, FINE
2661.00 - 2641.00	220.0 - 240.0	SILTSTONE, LIGHT-BROWN; FINE, SILTY SAND
2641.00 - 2601.00	240.0 - 280.0	SILTSTONE, LIGHT-BROWN TO TAN

2601.00 - 2581.00	280.0 - 300.0	SILTSTONE, REDDISH-BROWN AND SOME TAN
2581.00 - 2561.00	300.0 - 320.0	SILTSTONE, REDDISH-BROWN; SOME CLAY
2561.00 - 2541.00	320.0 - 340.0	SILTSTONE, BROWN; MULTI-COLORED, COARSE SAND
2541.00 - 2501.00	340.0 - 380.0	SAND AND SILTSTONE, BROWN, VERY FINE SAND; SOME MULTI-COLORED, COARSE SAND
2501.00 - 2461.00	380.0 - 420.0	SILTSTONE, BUFF-COLORED; TAN SANDSTONE
2461.00 - 2441.00	420.0 - 440.0	SILTSTONE, BUFF-COLORED, PINK AND GREEN; COARSE SAND, SMALL CLAY OR ASH BALLS
2441.00 - 2421.00	440.0 - 460.0	SILTSTONE, BUFF-COLORED; GREENISH-GRAY LIMESTONE LAYER AT ABOUT 452 FEET, SMALL PARTICLES OF LIGHT-COLORED ASH
2421.00 - 2401.00	460.0 - 480.0	SILTSTONE, BUFF-COLORED; ASH, MULTI-COLORED, COARSE SAND
2401.00 - 2361.00	480.0 - 520.0	SAND, MULTI-COLORED, MEDIUM TO VERY COARSE; LIMESTONE, SILTSTONE, VERY FINE SAND

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2727.00 - 2705.00	123.0 - 145.0	SAND, BROWNISH-GREEN, FINE
2705.00 - 2688.00	145.0 - 162.0	SAND AND SILTSTONE, BROWNISH-GREEN, FINE TO COARSE; CALCAREOUS
2688.00 - 2686.00	162.0 - 164.0	SAND, BROWNISH-GREEN, FINE TO COARSE
2686.00 - 2674.00	164.0 - 176.0	SAND, BROWNISH-GREEN, FINE TO MEDIUM
2674.00 - 2666.00	176.0 - 184.0	SAND, BROWN, FINE
2666.00 - 2658.00	184.0 - 192.0	SILTSTONE, RED-BROWN, SOMEWHAT CLAYEY; CALCAREOUS (ARIKAREE GROUP)

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Location Information

Legal Location:SW NW NW SW SEC. 27, T. 037 N., R. 29 W.
County:TODD Location:037N-29W-27CBBC 2
Basin:KEYA PAHA Latitude:43 08' 58"
Hydrologic Unit Code:10150006 Longitude:100 44' 55"
Land Owner: Ground Surface Elevation (ft.):2850 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:07/24/1990 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-90-39 Total Drill Hole Depth (ft.):133.0
Samples:

Well Information

SDGS Well Name: R20-90-39 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2852.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN. Screen Length (ft.):5.0
Total Casing and Screen (ft.):135.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 133 TO 128 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 133 TO 118 FEET; BENTONITE 118 TO 3 FEET; CEMENT 3 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED. MIDDLE WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2850.00 - 2841.00	0.0 - 9.0	SAND, SANDSTONE, AND SILTSTONE, BROWNISH-GREEN, FINE TO COARSE; CALCAREOUS
2841.00 - 2821.00	9.0 - 29.0	SAND AND SANDSTONE, BROWNISH-GREEN, FINE TO COARSE; SOME SILTSTONE, SLIGHTLY CALCAREOUS
2821.00 - 2814.00	29.0 - 36.0	SAND, BROWN, FINE
2814.00 - 2790.00	36.0 - 60.0	SAND, GREENISH-BROWN, FINE; SOME SILT IN THE LOWER 5 FEET; SLIGHTLY CALCAREOUS
2790.00 - 2772.00	60.0 - 78.0	SAND AND SILTSTONE, BROWN, FINE TO COARSE; CALCAREOUS
2772.00 - 2768.00	78.0 - 82.0	SILTSTONE, GREENISH-BROWN; SOME WHITE PIECES PRESENT; CALCAREOUS
2768.00 - 2760.00	82.0 - 90.0	SAND AND SILTSTONE, GREENISH-BROWN, FINE TO

COARSE; SOME WHITE PIECES PRESENT; SLIGHTLY
CALCAREOUS

2760.00 - 2756.00	90.0 - 94.0	SAND, GREENISH-BROWN, FINE TO MEDIUM
2756.00 - 2717.00	94.0 - 133.0	SAND, DARK-GREENISH-BROWN, FINE TO MEDIUM

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Location Information

Legal Location:SW NW NW SW SEC. 27, T. 037 N., R. 29 W.	
County:TODD	Location:037N-29W-27CBBC 3
Basin:KEYA PAHA	Latitude:43 08' 58"
Hydrologic Unit Code:10150006	Longitude:100 44' 55"
Land Owner:	Ground Surface Elevation (ft.):2850 T

Project Information

Project:TODD-MELLETTTE STUDY	Geologist:P. HAMMOND
Drill Date:07/24/1990	Geologist's Log:X
Company:SDGS	Driller:D. IVERSON
Drilling Method:ROTARY	Driller's Log:
Test Hole Number:R20-90-40	Total Drill Hole Depth (ft.):80.0
Samples:	

Well Information

SDGS Well Name: R20-90-40	Aquifer:OGALLALA
Water Rights Well:	Management Unit:
Other Well Name:	Casing Top Elevation:2852.00 T
Casing Type:PVC, SCH. 80	Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.018 IN.	Screen Length (ft.):10.0
Total Casing and Screen (ft.):80.0	Casing Stick-up (ft.):2.00
Well Maintenance Date:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

WELL DATA: SCREEN INTERVAL FROM 78 TO 68 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND AND VERY COARSE QUARTZ SAND) 80 TO 58 FEET; BENTONITE 58 TO 4 FEET; CEMENT 4 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. SCREEN AND CASING ARE FLUSH THREADED SOUTH WELL OF THREE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2850.00 - 2821.00	0.0 - 29.0	SAND AND SANDSTONE, GREENISH-BROWN, FINE TO COARSE; SLIGHTLY CALCAREOUS; ROOT CASTS PRESENT
2821.00 - 2814.00	29.0 - 36.0	SAND, BROWN, FINE TO MEDIUM
2814.00 - 2808.00	36.0 - 42.0	SAND, BROWN, FINE TO COARSE
2808.00 - 2790.00	42.0 - 60.0	SAND, GREENISH-BROWN, FINE TO COARSE
2790.00 - 2784.00	60.0 - 66.0	SAND, BROWN, FINE TO COARSE
2784.00 - 2770.00	66.0 - 80.0	SAND AND SILTSTONE, BROWN TO GREENISH- BROWN, FINE TO COARSE; VERY CALCAREOUS

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Location Information

Legal Location:SW SW SW SW SEC. 28, T. 037 N., R. 29 W.
County:TODD Location:037N-29W-28CCCC
Basin:KEYA PAHA Latitude:43 08' 38"
Hydrologic Unit Code:10150006 Longitude:100 46' 02"
Land Owner: Ground Surface Elevation (ft.):2877 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:06/25/1991 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-91-29 Total Drill Hole Depth (ft.):90.0
Samples:

Well Information

SDGS Well Name: R20-91-29 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2879.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):90.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 88 TO 78 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 90 TO 64 FEET; BENTONITE 64 TO 20 FEET; CEMENT 20 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. CASING AND SCREEN ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2877.00 - 2875.00	0.0 - 2.0	TOPSOIL, BLACK
2875.00 - 2867.00	2.0 - 10.0	SAND AND SANDSTONE, GREENISH-BROWN, VERY FINE TO FINE; SOME SILT; CALCAREOUS
2867.00 - 2848.00	10.0 - 29.0	SAND AND SANDSTONE, LIGHT-BROWN, VERY FINE TO FINE; SOME SILT; CALCAREOUS
2848.00 - 2840.00	29.0 - 37.0	SAND AND SANDSTONE, TAN, VERY FINE TO MEDIUM; SOME SILTSTONE; VERY CALCAREOUS
2840.00 - 2812.00	37.0 - 65.0	SAND, LIGHT-GREENISH-BROWN, VERY FINE TO COARSE, CLAYEY; SMALL AMOUNT OF SILT
2812.00 - 2787.00	65.0 - 90.0	SAND, GREENISH-BROWN, VERY FINE TO MEDIUM; SOME COARSE SAND; ROOT CASTS PRESENT

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Location Information

Legal Location:SE SE SE SE SEC. 28, T. 037 N., R. 29 W.
County:TODD Location:037N-29W-28DDDD
Basin:KEYA PAHA Latitude:43 08' 37"
Hydrologic Unit Code:10150006 Longitude:100 44' 54"
Land Owner: Ground Surface Elevation (ft.):2858 T

Project Information

Project:WATER RIGHTS Geologist:J. GOODMAN
Drill Date:11/03/1976 Geologist's Log:X
Company:COATS WELL DRILLING Driller:C. COATS
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):215.0
Samples:

Well Information

SDGS Well Name: Aquifer:OGALLALA
Water Rights Well:TD-76D Management Unit:
Other Well Name:TD-76-4 Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC Screen Length (ft.):5.0
Total Casing and Screen (ft.):196.1 Casing Stick-up (ft.):1.40
Well Maintenance Date:06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2858.00 - 2857.00	0.0 - 1.0	TOPSOIL, BLACK
2857.00 - 2849.00	1.0 - 9.0	SAND, BROWN, FINE
2849.00 - 2842.00	9.0 - 16.0	SILTSTONE, GRAY-GREEN, SANDY
2842.00 - 2839.00	16.0 - 19.0	SILTSTONE, WHITE; CARBONATE(?)
2839.00 - 2812.00	19.0 - 46.0	SAND, BROWN, FINE; HARD DRILLING FROM 25 TO 30 FEET, WHITE SILTSTONE
2812.00 - 2810.00	46.0 - 48.0	SILTSTONE, GRAY-WHITE
2810.00 - 2800.00	48.0 - 58.0	SAND, BROWN, FINE
2800.00 - 2793.00	58.0 - 65.0	SAND AND SILTSTONE, GRAY AND WHITE
2793.00 - 2767.00	65.0 - 91.0	SAND, BROWN, FINE
2767.00 - 2759.00	91.0 - 99.0	SILTSTONE, GRAY-WHITE; HARD DRILLING
2759.00 - 2680.00	99.0 - 178.0	SAND, BROWN, FINE; HARD LAYER AT 155 FEET

2680.00 - 2653.00	178.0 - 205.0	SAND AND SILTSTONE ALTERNATING
2653.00 - 2643.00	205.0 - 215.0	SILTSTONE, GRAY-WHITE, SOME GREEN; MUCH HARDER DRILLING THAN INTERVAL FROM 178 TO 205 FEET

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Location Information

Legal Location: NE NE NE NE SEC. 29, T. 037 N., R. 29 W.
County: TODD Location: 037N-29W-29AAAA
Basin: WHITE Latitude: 43 09' 27"
Hydrologic Unit Code: 10140203 Longitude: 100 46' 08"
Land Owner: Ground Surface Elevation (ft.): 2860 T

Project Information

Project: WATER RIGHTS Geologist: J. GOODMAN
Drill Date: 12/02/1976 Geologist's Log: X
Company: COATS WELL DRILLING Driller: C. COATS
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 230.0
Samples:

Well Information

SDGS Well Name: Aquifer: OGALLALA
Water Rights Well: TD-76B Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC Screen Length (ft.): 5.0
Total Casing and Screen (ft.): 206.9 Casing Stick-up (ft.): 2.60
Well Maintenance Date: 06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2860.00 - 2859.00	0.0 - 1.0	TOPSOIL, BLACK
2859.00 - 2850.00	1.0 - 10.0	SAND, VERY FINE
2850.00 - 2831.00	10.0 - 29.0	SILTSTONE, GRAY-WHITE
2831.00 - 2814.00	29.0 - 46.0	SAND, BROWN, FINE, ROUNDED; CLEAN
2814.00 - 2808.00	46.0 - 52.0	SILTSTONE, GREEN; HARD DRILLING
2808.00 - 2784.00	52.0 - 76.0	SAND, BROWN, FINE, ROUNDED; CLEAN
2784.00 - 2779.00	76.0 - 81.0	SILTSTONE, WHITE; CARBONATE(?)
2779.00 - 2770.00	81.0 - 90.0	SAND, BROWN, FINE
2770.00 - 2766.00	90.0 - 94.0	SILTSTONE, WHITE, SOME GREEN; CARBONATE
2766.00 - 2741.00	94.0 - 119.0	SAND, BROWN, FINE; ALTERNATING WITH WHITE SILTSTONE
2741.00 - 2738.00	119.0 - 122.0	SANDSTONE, WHITE; VERY HARD, ALMOST A QUARTZITE

2738.00 - 2720.00	122.0 - 140.0	SAND, BROWN, FINE; WITH ALTERNATING LAYERS OF WHITE AND GREEN SILTSTONE
2720.00 - 2685.00	140.0 - 175.0	SAND, BROWN, FINE; CLEAN
2685.00 - 2653.00	175.0 - 207.0	SAND, BROWN, FINE TO MEDIUM; CLEAN
2653.00 - 2644.00	207.0 - 216.0	SILTSTONE, WHITE
2644.00 - 2634.00	216.0 - 226.0	SILTSTONE, BROWNISH-RED; SLOWER DRILLING THEN INTERVAL FROM 207 TO 216 FEET
2634.00 - 2630.00	226.0 - 230.0	CLAY, RED, SILTY (ARIKAREE GROUP)

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Location Information

Legal Location:SE SE SE SW SEC. 29, T. 037 N., R. 29 W.
County:TODD Location:037N-29W-29CDDD
Basin:KEYA PAHA Latitude:43 08' 37"
Hydrologic Unit Code:10150006 Longitude:100 46' 43"
Land Owner: Ground Surface Elevation (ft.):2885 T

Project Information

Project:TODD-MELLETTTE STUDY Geologist:P. HAMMOND
Drill Date:06/26/1991 Geologist's Log:X
Company:SDGS Driller:D. IVERSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-91-30 Total Drill Hole Depth (ft.):90.0
Samples:

Well Information

SDGS Well Name: R20-91-30 Aquifer:OGALLALA
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2887.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):90.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

WELL DATA: SCREEN INTERVAL FROM 88 TO 78 FEET; FILTER PACK (0.65-0.75 MM QUARTZ SAND) 90 TO 67 FEET; BENTONITE 67 TO 20 FEET; CEMENT 20 TO 0 FEET; LOCKING STEEL WELL PROTECTOR INSTALLED. CASING AND SCREEN ARE FLUSH THREADED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2885.00 - 2883.00	0.0 - 2.0	TOPSOIL, BLACK
2883.00 - 2857.00	2.0 - 28.0	SAND AND SANDSTONE, LIGHT-GREENISH-BROWN, VERY FINE TO FINE
2857.00 - 2850.00	28.0 - 35.0	SAND, LIGHT-TAN, VERY FINE TO FINE
2850.00 - 2838.00	35.0 - 47.0	SAND, GREENISH-TAN, VERY FINE TO FINE; SOME CLAY
2838.00 - 2811.00	47.0 - 74.0	SAND, BROWN, VERY FINE TO FINE
2811.00 - 2805.00	74.0 - 80.0	SAND, GREENISH-BROWN, VERY FINE TO FINE, CLAYEY

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Location Information

Legal Location: SW SW SW SW SEC. 33, T. 037 N., R. 29 W.
 County: TODD Location: 037N-29W-33CCCC
 Basin: KEYA PAHA Latitude: 43 07' 45"
 Hydrologic Unit Code: 10150006 Longitude: 100 46' 02"
 Land Owner: Ground Surface Elevation (ft.): 2909 T

Project Information

Project: WATER RIGHTS Geologist: J. GOODMAN
 Drill Date: 11/04/1976 Geologist's Log: X
 Company: COATS WELL DRILLING Driller: C. COATS
 Drilling Method: ROTARY Driller's Log:
 Test Hole Number: Total Drill Hole Depth (ft.): 220.0
 Samples:

Well Information

SDGS Well Name: Aquifer: OGALLALA
 Water Rights Well: TD-76C Management Unit:
 Other Well Name: Casing Top Elevation:
 Casing Type: PVC Casing Diameter (in.): 2.0
 Screen Type: PVC Screen Length (ft.): 5.0
 Total Casing and Screen (ft.): 206.1 Casing Stick-up (ft.): 3.00
 Well Maintenance Date: 06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
 Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2909.00 - 2908.00	0.0 - 1.0	TOPSOIL, BLACK
2908.00 - 2883.00	1.0 - 26.0	SAND, BROWN, FINE
2883.00 - 2875.00	26.0 - 34.0	SILTSTONE, WHITE-GRAY; CARBONATE(?)
2875.00 - 2863.00	34.0 - 46.0	SILTSTONE, GRAY-WHITE; HARD DRILLING
2863.00 - 2854.00	46.0 - 55.0	SAND, BROWN, FINE
2854.00 - 2852.00	55.0 - 57.0	SILTSTONE, WHITE; HARDER DRILLING THAN INTERVAL FROM 46 TO 57 FEET
2852.00 - 2834.00	57.0 - 75.0	SAND, BROWN, FINE
2834.00 - 2828.00	75.0 - 81.0	SAND, BROWN, FINE; WITH INTERBEDDED GREEN SILTSTONE
2828.00 - 2788.00	81.0 - 121.0	SAND, BROWN, FINE; CLEAN
2788.00 - 2785.00	121.0 - 124.0	SILTSTONE, WHITE; HARD DRILLING
2785.00 - 2773.00	124.0 - 136.0	SAND, BROWN, FINE; WITH WHITE-GRAY SILTSTONE

2773.00 - 2694.00 136.0 - 215.0 SAND, BROWN, FINE; CLEAN, SILTSTONE LAYERS AT
200 FEET

2694.00 - 2689.00 215.0 - 220.0 SILTSTONE, RED (ARIKAREE GROUP)

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Location Information

Legal Location: NE NE NE NE SEC. 26, T. 037 N., R. 33 W.
County: TODD Location: 037N-33W-26AAAA
Basin: WHITE Latitude: 43 09' 24"
Hydrologic Unit Code: 10140203 Longitude: 101 10' 42"
Land Owner: Ground Surface Elevation (ft.): 2952 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 09/29/1992 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-92-49 Total Drill Hole Depth (ft.): 1027.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

PLUGGED FROM TOTAL DEPTH TO TOP WITH HIGH SOLIDS BENTONITE PLUGGING FLUID, SETTLED TWO DAYS, FILLED WITH BENTONITE CRUMBLES TO 8 FEET BELOW LAND SURFACE, CEMENT FROM 8 FEET TO SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2952.00 - 2929.00	0.0 - 23.0	SAND, LIGHT-OLIVE-GRAY, FINE, SLIGHTLY SILTY, WELL-ROUNDED, WELL-SORTED; QUARTZOSE, SOME BLACK ORGANIC DEBRIS IN UPPER 10 FEET, NONCALCAROUS
2929.00 - 2917.00	23.0 - 35.0	SILT, YELLOWISH-GRAY TO VERY PALE-ORANGE, CLAYEY, SANDY; MASSIVE TO POORLY FISSILE, NONCALCAREOUS
2917.00 - 2832.00	35.0 - 120.0	SAND, YELLOWISH-GRAY, FINE, WELL-ROUNDED, WELL-SORTED; QUARTZOSE WITH SOME MINOR DARK FELDSPAR CLASTS, SOME THIN SILT BEDS, DARK-BROWN SILTSTONES AT 80 TO 96 FEET
2832.00 - 2811.00	120.0 - 141.0	SILT, PALE-OLIVE, SANDY; NONCALCAREOUS
2811.00 - 2715.00	141.0 - 237.0	SAND, LIGHT-OLIVE-GRAY, FINE, WELL-ROUNDED, WELL-SORTED; QUARTZOSE, SOME MINOR DARK CLASTS
2715.00 - 2580.00	237.0 - 372.0	SILTSTONE, YELLOW-BROWN, CLAYEY; HARD, NONCALCAREOUS, MASSIVE TO POORLY BEDDED, LESS CLAYEY BELOW 330 FEET
2580.00 - 2556.00	372.0 - 396.0	SAND, LIGHT-BROWN, FINE TO VERY FINE, SUBROUNDED, SLIGHTLY SILTY, FAIR TO POORLY SORTED; QUARTZOSE, NONCALCAREOUS
2556.00 - 2494.00	396.0 - 458.0	SILTSTONE, PALE-YELLOWISH-BROWN, CLAYEY, SLIGHTLY SANDY; SLIGHTLY CALCAREOUS, MASSIVE TO

POORLY BEDDED, VERY FINE SAND LENSES AT 437 TO 446 FEET

2494.00 - 2467.00	458.0 - 485.0	SAND, YELLOWISH-BROWN, VERY FINE, SILTY; QUARTZOSE, SILTSTONE BED AT 479 TO 482 FEET
2467.00 - 2455.00	485.0 - 497.0	SILTSTONE, PALE-YELLOWISH-BROWN, CLAYEY; NONCALCAREOUS
2455.00 - 2446.00	497.0 - 506.0	SAND, YELLOWISH-BROWN, VERY FINE, SILTY; QUARTZOSE, NONCALCAREOUS
2446.00 - 2312.00	506.0 - 640.0	SILTSTONE, YELLOWISH-BROWN, CLAYEY; NON- CALCAREOUS TO 530 FEET, YELLOWISH-GRAY AND MODERATELY CALCAREOUS BELOW 530 FEET
2312.00 - 2278.00	640.0 - 674.0	CLAYSTONE, YELLOWISH-GRAY, SILTY; POORLY FISSILE, MODERATELY TO VERY CALCAREOUS
2278.00 - 2225.00	674.0 - 727.0	CLAYSTONE, PALE-OLIVE, SLIGHTLY SILTY; MASSIVE(?), NONCALCAREOUS, SOME OLIVE- GRAY SILTSTONE NEAR 710 FEET
2225.00 - 1925.00	727.0 - 1027.0	SILTSTONE, GRAYISH-YELLOW MOTTLED WITH PALE-OLIVE; ALTERNATING HARD CLAYEY AND SOFTER SANDY BEDS, VERY POOR CUTTINGS FROM 750 TO 1027 FEET, APPARENTLY ALL WHITE RIVER GROUP SEDIMENTS

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Location Information

Legal Location:NE NE NE NE SEC. 26, T. 037 N., R. 33 W.
County:TODD Location:037N-33W-26AAAA 1
Basin:WHITE Latitude:43 09' 24"
Hydrologic Unit Code:10140203 Longitude:101 10' 42"
Land Owner: Ground Surface Elevation (ft.):2952 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:10/06/1992 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-92-51 Total Drill Hole Depth (ft.):397.0
Samples:

Well Information

SDGS Well Name:R2-92-51 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2954.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):397.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2952.00 - 2929.00	0.0 - 23.0	SAND, LIGHT-OLIVE-GRAY, FINE, SLIGHTLY SILTY, WELL-ROUNDED, WELL-SORTED; QUARTZOSE, SOME BLACK ORGANIC DEBRIS IN UPPER 10 FEET, NONCALCAREOUS
2929.00 - 2917.00	23.0 - 35.0	SILT, YELLOWISH-GRAY TO VERY PALE-ORANGE, SANDY, CLAYEY; MASSIVE TO POORLY FISSILE, NONCALCAREOUS
2917.00 - 2832.00	35.0 - 120.0	SAND, YELLOWISH-GRAY, FINE, WELL-ROUNDED, WELL-SORTED; QUARTZOSE WITH SOME MINOR DARK FELDSPATIC CLASTS, SOME THIN SILT BEDS, DARK-BROWN SILTSTONE AT 80 TO 96 FEET
2832.00 - 2811.00	120.0 - 141.0	SILT, PALE-OLIVE, SANDY; NONCALCAREOUS
2811.00 - 2715.00	141.0 - 237.0	SAND, LIGHT-OLIVE-GRAY, FINE, WELL-ROUNDED, WELL-SORTED; QUARTZOSE, SOME MINOR DARK CLASTS
2715.00 - 2580.00	237.0 - 372.0	SILTSTONE, YELLOWISH-BROWN, CLAYEY; HARD, NONCALCAREOUS, MASSIVE TO POORLY BEDDED, LESS CLAYEY BELOW 330 FEET

2580.00 - 2556.00	372.0 - 396.0	SAND, LIGHT-BROWN, FINE TO VERY FINE, SLIGHTLY SILTY, SUBROUNDED, FAIR TO POORLY SORTED; QUARTZOSE, NONCALCAREOUS
2556.00 - 2555.00	396.0 - 397.0	SILTSTONE, PALE-YELLOWISH-BROWN, CLAYEY, SLIGHTLY SANDY

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Location Information

Legal Location:NE NE NE NE SEC. 26, T. 037 N., R. 33 W.
County:TODD Location:037N-33W-26AAAA 2
Basin:WHITE Latitude:43 09' 24"
Hydrologic Unit Code:10140203 Longitude:101 10' 42"
Land Owner: Ground Surface Elevation (ft.):2952 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:10/07/1992 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-92-52 Total Drill Hole Depth (ft.):237.0
Samples:

Well Information

SDGS Well Name: R2-92-52 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2954.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):238.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

13 BAGS OF #50 SAND USED FOR FILTER PACK.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2952.00 - 2929.00	0.0 - 23.0	SAND, LIGHT-OLIVE-GRAY, FINE, SLIGHTLY SILTY, WELL-ROUNDED, WELL-SORTED; QUARTZOSE, SOME BLACK ORGANIC DEBRIS IN UPPER 10 FEET, NONCALCAREOUS
2929.00 - 2917.00	23.0 - 35.0	SILT, YELLOWISH-GRAY TO VERY PALE-ORANGE, CLAYEY, SANDY; MASSIVE TO POORLY FISSILE, NONCALCAREOUS
2917.00 - 2832.00	35.0 - 120.0	SAND, YELLOWISH-GRAY, FINE, WELL-ROUNDED, WELL-SORTED; QUARTZOSE WITH SOME MINOR DARK FELDSPAR CLASTS, SOME THIN SILT BEDS, DARK-BROWN SILTSTONE AT 80 TO 96 FEET
2832.00 - 2811.00	120.0 - 141.0	SILT, PALE-OLIVE, SANDY; NONCALCAREOUS
2811.00 - 2715.00	141.0 - 237.0	SAND, LIGHT-OLIVE-GRAY, FINE, WELL- ROUNDED, WELL-SORTED; QUARTZOSE, SOME MINOR DARK CLASTS

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Location Information

Legal Location:SE SE SW NE SEC. 01, T. 038 N., R. 25 W.
County:TODD Location:038N-25W-01ACDD
Basin:WHITE Latitude:43 17' 47"
Hydrologic Unit Code:10140204 Longitude:100 13' 13"
Land Owner:E. ASSMAN Ground Surface Elevation (ft.):2438 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/26/1993 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R20-93-42 Total Drill Hole Depth (ft.):247.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

THIS HOLE WAS PLUGGED WITH HIGH SOLIDS BENTONITE GROUT FROM 247 TO 10 FEET, CEMENT GROUT FROM 10 TO 3 FEET AND LOCAL SEDIMENTS FROM 3 TO 0 FEET.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2438.00 - 2429.00	0.0 - 9.0	SAND, GRAYISH-ORANGE, VERY FINE TO COARSE, VERY SILTY; EQUAL PROPORTIONS OF LITHIC AND QUARTZ CLAST, ABUNDANT CALCAREOUS NODULES AND GRANULES, VERY CALCAREOUS
2429.00 - 2419.00	9.0 - 19.0	SAND, GRAYISH-ORANGE, SILTY, VERY FINE TO COARSE; LARGELY FROSTED AND POLISHED QUARTZ CLASTS, SOME LITHIC GRAINS, VERY CALCAREOUS
2419.00 - 2378.00	19.0 - 60.0	SILTSTONE, LIGHT-BROWN, SANDY; POORLY LITHIFIED, POORLY CALCAREOUS TO NON-CALCAREOUS, WITH SOME HARD CEMENTED LAYERS
2378.00 - 2361.00	60.0 - 77.0	GRAVEL, LIGHT-BROWN, FINE TO 8 MM IN DIAMETER, VERY SANDY AND SILTY, SUB- ROUNDED TO ANGULAR; LITHIC CLASTS WITH SOME SMALLER FROSTED POLISHED QUARTZ CLASTS, CALCAREOUS
2361.00 - 2326.00	77.0 - 112.0	SANDSTONE, LIGHT-BROWN, VERY FINE TO MEDIUM, SILTY, SUBANGULAR TO ROUNDED; SUB-EQUAL QUARTZ AND LITHIC GRAINS, BOTH POLISHED AND FROSTED QUARTZ GRAINS, MODERATE TO FIRM CALCITE CEMENT
2326.00 - 2271.00	112.0 - 167.0	SILTSTONE, LIGHT-GREENISH-GRAY TO GREENISH-GRAY, CLAYEY; PLATY TO TABULAR FRAGMENTS, SLIGHTLY CALCAREOUS TO NON-CALCAREOUS, VERY SANDY FROM 156 FEET TO 167 FEET (WHITE RIVER GROUP?)

2271.00 - 2265.00	167.0 - 173.0	CLAY, LIGHT-BROWN TO VERY PALE-ORANGE; SOFT, MASSIVE, POORLY CALCAREOUS TO NONCALCAREOUS (WEATHERED PIERRE SHALE)
2265.00 - 2229.00	173.0 - 209.0	SHALE, DARK-YELLOWISH-ORANGE TO VERY PALE-ORANGE; MOTTLED, VERY CALCAREOUS, FISSILE (WEATHERED PIERRE SHALE)
2229.00 - 2191.00	209.0 - 247.0	SHALE, OLIVE-GRAY; PLATY TO FISSILE, SOME SCATTERED FORAMINIFERA TESTS ON BEDDING SURFACES, CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location: NW NW NW NW SEC. 30, T. 038 N., R. 25 W.
County: TODD Location: 038N-25W-30BBBB
Basin: KEYA PAHA Latitude: 43 14' 42"
Hydrologic Unit Code: 10150006 Longitude: 100 19' 55"
Land Owner: Ground Surface Elevation (ft.): 2484 T

Project Information

Project: USGS HIGH PLAINS PROJECT Geologist:
Drill Date: 09/25/1980 Geologist's Log: X
Company: GRIMSHAW DRILLING Driller: L. WOLD
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 340.0
Samples:

Well Information

SDGS Well Name: Aquifer: ARIKAREE
Water Rights Well: TD-80D Management Unit:
Other Well Name: TD 80-5 Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 2.0
Screen Type: PVC Screen Length (ft.): 45.0
Total Casing and Screen (ft.): 144.7 Casing Stick-up (ft.): 2.00
Well Maintenance Date: 06/27/1984

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

CASING IS SLOTTED FROM 80 TO 120 FEET. BOTTOM SECTION OF CASING HAS A 5-FOOT SANDPOINT ATTACHED. WELL GRAVEL PACKED, STAKED AND WIRE SECURED, BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST SANDS IN THE ARIKAREE. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2484.00 - 2464.00	0.0 - 20.0	TOPSOIL; SAND, SOME SANDSTONE
2464.00 - 2424.00	20.0 - 60.0	SANDSTONE; GRAY, SILTY CLAY LUMPS
2424.00 - 2364.00	60.0 - 120.0	SILT AND SILTSTONE, BROWN; GRAY CLAY
2364.00 - 2344.00	120.0 - 140.0	SILTSTONE, BROWN; GRAY CLAY, SOME BROWN SAND
2344.00 - 2304.00	140.0 - 180.0	SILTSTONE, LIGHT- TO DARK-BROWN
2304.00 - 2204.00	180.0 - 280.0	SILTSTONE, LIGHT- TO DARK-BROWN; WHITE CLAY LUMPS
2204.00 - 2184.00	280.0 - 300.0	SHALE, GRAY AND GREEN: BROWN SILTSTONE
2184.00 - 2144.00	300.0 - 340.0	SHALE, GRAY AND GREEN

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Location Information

Legal Location:SE SE SE SE SEC. 07, T. 038 N., R. 27 W.
County:TODD Location:038N-27W-07DDDD
Basin:KEYA PAHA Latitude:43 16' 27"
Hydrologic Unit Code:10150006 Longitude:100 33' 08"
Land Owner: Ground Surface Elevation (ft.):2493 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/31/1996 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-96-45 Total Drill Hole Depth (ft.):262.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma:X Extra:X

AN INDUCTION LOG WAS RUN ON THIS HOLE; NATURAL GAMMA, CONDUCTIVITY, AND RESISTIVITY. THIS HOLE WAS PLUGGED FROM 262 TO 12 FEET BELOW LAND SURFACE WITH HIGH SOLIDS BENTONITE; 12 TO 2 FEET WITH NEAT CEMENT GROUT; AND FROM 2 FEET TO LAND SURFACE WITH NATIVE SEDIMENT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2493.00 - 2491.00	0.0 - 2.0	TOPSOIL, DARK-BROWN, SILTY
2491.00 - 2468.00	2.0 - 25.0	SILTSTONE, GRAYISH-ORANGE TO LIGHT-BROWN, SLIGHTLY SANDY; CALCAREOUS (ROSEBUD FORMATION?)
2468.00 - 2445.00	25.0 - 48.0	SILTSTONE, MODERATE-ORANGE-PINK, SANDY; CALCAREOUS; SOME HARD CHERTY BEDS WITH SMALL VUGS (ROSEBUD FORMATION?)
2445.00 - 2407.00	48.0 - 86.0	SILTSTONE, GRAYISH-ORANGE, CLAYEY; NONCALCAREOUS (ROSEBUD FORMATION?)
2407.00 - 2329.00	86.0 - 164.0	SILTSTONE, GRAYISH-ORANGE, SANDY; VERY CALCAREOUS; SEVERAL THIN, MASSIVE SILTSTONE BEDS (ROSEBUD FORMATION?)
2329.00 - 2302.00	164.0 - 191.0	SILTSTONE, PALE-OLIVE, CLAYEY, SANDY; NONCALCAREOUS; POORLY FISSILE TO MASSIVE (BRULE FORMATION?)
2302.00 - 2271.00	191.0 - 222.0	CLAYSTONE, LIGHT-OLIVE-GRAY GRADING DOWNWARD TO LIGHT-BROWN, SILTY; POORLY CALCAREOUS (CHADRON FORMATION?)
2271.00 - 2262.00	222.0 - 231.0	CLAYSTONE, BLACK; CALCAREOUS TO POORLY CALCAREOUS; POORLY FISSILE (PIERRE SHALE)
2262.00 - 2231.00	231.0 - 262.0	CLAYSTONE, DARK-BROWNISH-GRAY; CALCAREOUS; SOME

SMALL WHITE SPECKS (PIERRE SHALE)

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Location Information

Legal Location:SW NW SW SW SEC. 24, T. 038 N., R. 27 W.
County:TODD Location:038N-27W-24CCBC
Basin:KEYA PAHA Latitude:43 15' 16"
Hydrologic Unit Code:10150006 Longitude:100 28' 15"
Land Owner: Ground Surface Elevation (ft.):2428 T

Project Information

Project:WATER RIGHTS Geologist:D. DRISCOLL
Drill Date:01/01/1957 Geologist's Log:X
Company:GRIMSHAW DRILLING Driller:J. HUTMACHER
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):35.0
Samples:

Well Information

SDGS Well Name: Aquifer:ALLUVIUM
Water Rights Well:TD-57B Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type:STEEL Casing Diameter (in.):1.3
Screen Type:UNKNOWN Screen Length (ft.):
Total Casing and Screen (ft.):20.7 Casing Stick-up (ft.):
Well Maintenance Date:06/27/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

ORIGINAL OBSERVATION WELL NAME K-2.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2428.00 - 2412.00	0.0 - 16.0	SAND, FINE
2412.00 - 2393.00	16.0 - 35.0	CLAY AND SAND LAYER

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Location Information

Legal Location:SE SE SE SW SEC. 03, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-03CDDD
Basin:KEYA PAHA Latitude:43 17' 20"
Hydrologic Unit Code:10150006 Longitude:100 37' 22"
Land Owner: Ground Surface Elevation (ft.):2540 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/14/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:3 Total Drill Hole Depth (ft.):69.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2540.00 - 2536.00	0.0 - 4.0	SAND, WHITE, FINE; POWDERY, DRY
2536.00 - 2533.00	4.0 - 7.0	SAND, GREENISH-BROWN, FINE, CLAYEY; HARD
2533.00 - 2526.00	7.0 - 14.0	SILT, GREENISH-BROWN; SOME SAND, MOIST
2526.00 - 2503.00	14.0 - 37.0	CLAY, BROWN, SILTY, SANDY; MOIST
2503.00 - 2493.00	37.0 - 47.0	SILT, GREENISH-BROWN, CLAYEY; WITH FINE TO MEDIUM SAND, MOIST
2493.00 - 2476.00	47.0 - 64.0	SILT, BUFF-BROWN, SANDY; SATURATED
2476.00 - 2471.00	64.0 - 69.0	CLAY, DARK-BROWN, SILTY, SANDY; HARD

DEPTH TO WATER - 47 FEET.

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Location Information

Legal Location:SW SW NW NE SEC. 04, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-04ABCC
Basin:KEYA PAHA Latitude:43 17' 58"
Hydrologic Unit Code:10150006 Longitude:100 38' 31"
Land Owner: Ground Surface Elevation (ft.):2545 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/06/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:7 Total Drill Hole Depth (ft.):39.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2545.00 - 2541.00	0.0 - 4.0	SAND, BUFF-BROWNISH-TAN; MOIST
2541.00 - 2536.00	4.0 - 9.0	SAND, TANNISH-BROWN, COARSE; SATURATED
2536.00 - 2532.00	9.0 - 13.0	SAND, BLACKISH- TO BROWNISH-GRAY, MEDIUM TO COARSE; SATURATED
2532.00 - 2514.00	13.0 - 31.0	CLAY, TANNISH-BROWN; WITH SAND AND SILT, SATURATED
2514.00 - 2506.00	31.0 - 39.0	CLAY, GREENISH- TO TANNISH-BROWN; DRY

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:SE SE NW NW SEC. 04, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-04BBDD
Basin:KEYA PAHA Latitude:43 17' 57"
Hydrologic Unit Code:10150006 Longitude:100 38' 50"
Land Owner: Ground Surface Elevation (ft.):2550 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/05/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:6 Total Drill Hole Depth (ft.):44.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2550.00 - 2547.00	0.0 - 3.0	SILT, LIGHT-BROWN; SOME SAND, DRY
2547.00 - 2545.00	3.0 - 5.0	SAND, LIGHT-BROWN, FINE TO COARSE; DRY
2545.00 - 2541.00	5.0 - 9.0	SAND, DARK-GRAY, FINE TO COARSE; HIGHLY SATURATED
2541.00 - 2537.00	9.0 - 13.0	SAND, DARK-BROWNISH-GRAY, FINE TO MEDIUM; HIGHLY SATURATED
2537.00 - 2531.00	13.0 - 19.0	CLAY, LIGHT-TANNISH-YELLOW; SOME FINE SAND, HARD, SATURATED
2531.00 - 2506.00	19.0 - 44.0	CLAY, LIGHT-TAN TO WHITISH-GRAY; MOIST TO DRY

DEPTH TO WATER - 5 FEET.

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Location Information

Legal Location:SW SW SW SE SEC. 06, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-06DCCC
Basin:KEYA PAHA Latitude:43 17' 19"
Hydrologic Unit Code:10150006 Longitude:100 40' 53"
Land Owner: Ground Surface Elevation (ft.):2578 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/06/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:5 Total Drill Hole Depth (ft.):54.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2578.00 - 2577.00	0.0 - 1.0	TOPSOIL
2577.00 - 2564.00	1.0 - 14.0	SAND, BLACKISH-GRAY; SATURATED
2564.00 - 2558.00	14.0 - 20.0	SAND, BROWNISH-TAN, FINE TO COARSE; SATURATED
2558.00 - 2549.00	20.0 - 29.0	CLAY, BROWNISH-TAN; MOIST
2549.00 - 2529.00	29.0 - 49.0	CLAY, BROWNISH-TAN; SATURATED
2529.00 - 2524.00	49.0 - 54.0	CLAY, BROWNISH-TAN; HARD, DRY

DEPTH TO WATER - 1 FOOT.

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Location Information

Legal Location:SE SE NE NE SEC. 08, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-08AADD
Basin:KEYA PAHA Latitude:43 17' 06"
Hydrologic Unit Code:10150006 Longitude:100 39' 08"
Land Owner: Ground Surface Elevation (ft.):2610 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/13/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:10 Total Drill Hole Depth (ft.):84.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2610.00 - 2608.00	0.0 - 2.0	TOPSOIL
2608.00 - 2600.00	2.0 - 10.0	CLAY, WHITISH-GRAY, SILTY; SOME SAND, DRY
2600.00 - 2596.00	10.0 - 14.0	CLAY, LIGHT-GRAY, SILTY, SANDY; MOIST
2596.00 - 2571.00	14.0 - 39.0	CLAY, LIGHT-TANNISH-BUFF, SILTY; SOME FINE SAND, DRY
2571.00 - 2551.00	39.0 - 59.0	CLAY, BUFFISH-TAN, SILTY, SANDY; SOME COARSE SAND, MOIST
2551.00 - 2531.00	59.0 - 79.0	SAND, LIGHT-TANNISH-BUFF, FINE TO MEDIUM; NEARLY SATURATED
2531.00 - 2526.00	79.0 - 84.0	CLAY, BUFFISH-TAN, SILTY, SANDY; HARD, DRY

DEPTH TO WATER - 59 FEET.

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Location Information

Legal Location: SE SE SW SE SEC. 10, T. 038 N., R. 28 W.
 County: TODD Location: 038N-28W-10DCDD
 Basin: KEYA PAHA Latitude: 43 16' 27"
 Hydrologic Unit Code: 10150006 Longitude: 100 37' 02"
 Land Owner: Ground Surface Elevation (ft.): 2640 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
 Drill Date: 06/20/1966 Geologist's Log:
 Company: SDGS Driller: BRINKLEY/GANN
 Drilling Method: AUGER Driller's Log: X
 Test Hole Number: 11 Total Drill Hole Depth (ft.): 34.0
 Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
 Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2640.00 - 2639.00	0.0 - 1.0	TOPSOIL
2639.00 - 2631.00	1.0 - 9.0	SAND, BROWNISH-TAN, FINE TO MEDIUM; SOME SILT, MOIST
2631.00 - 2626.00	9.0 - 14.0	SAND, LIGHT-BROWNISH-TAN, FINE TO MEDIUM; SOME SILT, MOIST
2626.00 - 2613.00	14.0 - 27.0	SILT, TANNISH-BROWN, CLAYEY; SOME FINE TO MEDIUM SAND, MOIST
2613.00 - 2611.00	27.0 - 29.0	CLAY, TANNISH-BROWN, SILTY; SOME FINE TO MEDIUM SAND, DRY
2611.00 - 2606.00	29.0 - 34.0	CLAY, DARK-TANNISH-BROWN, SILTY; SOME FINE TO MEDIUM SAND, HARD, MOIST

DEPTH TO WATER - DRY.

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Location Information

Legal Location:SW SW SW SW SEC. 13, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-13CCCC
Basin:KEYA PAHA Latitude:43 15' 35"
Hydrologic Unit Code:10150006 Longitude:100 35' 30"
Land Owner: Ground Surface Elevation (ft.):2577 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/20/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:19 Total Drill Hole Depth (ft.):64.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2577.00 - 2573.00	0.0 - 4.0	SAND, DARK-BROWN, FINE TO MEDIUM, SILTY; SOME CLAY, SLIGHTLY MOIST
2573.00 - 2568.00	4.0 - 9.0	SAND, LIGHT-TANNISH-BROWN, FINE, SILTY, CLAYEY; MOIST
2568.00 - 2563.00	9.0 - 14.0	CLAY, BUFFISH-TAN, SILTY; SOME FINE SAND, DRY
2563.00 - 2555.00	14.0 - 22.0	CLAY, BUFFISH-TAN; DRY
2555.00 - 2553.00	22.0 - 24.0	CLAY, LIGHT-TAN TO LIGHT-PINK, SILTY; SOME COARSE SAND, DRY
2553.00 - 2548.00	24.0 - 29.0	CLAY, PINKISH-TAN, SILTY; SOME SAND, DRY
2548.00 - 2543.00	29.0 - 34.0	CLAY, PINKISH-TAN, SILTY; SOME SAND, MOIST
2543.00 - 2538.00	34.0 - 39.0	CLAY, LIGHT-TANNISH-GRAY, SILTY; SOME FINE SAND, MOIST
2538.00 - 2530.00	39.0 - 47.0	CLAY, LIGHT-TAN, SILTY; SOME VERY FINE SAND, SLIGHTLY SATURATED
2530.00 - 2528.00	47.0 - 49.0	CLAY, TANNISH-BROWN, SILTY; SOME FINE TO COARSE SAND, DRY
2528.00 - 2513.00	49.0 - 64.0	CLAY, TANNISH-BROWN, SILTY; SOME FINE TO COARSE SAND, VERY HARD, DRY

DEPTH TO WATER - 39 FEET.

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Location Information

Legal Location:SE SE SW NW SEC. 15, T. 038 N., R. 28 W.
 County:TODD Location:038N-28W-15BCDD
 Basin:KEYA PAHA Latitude:43 16' 02"
 Hydrologic Unit Code:10150006 Longitude:100 37' 36"
 Land Owner: Ground Surface Elevation (ft.):2700 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
 Drill Date:06/21/1966 Geologist's Log:
 Company:SDGS Driller:BRINKLEY/GANN
 Drilling Method:AUGER Driller's Log:X
 Test Hole Number:18 Total Drill Hole Depth (ft.):69.0
 Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
 Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2700.00 - 2699.00	0.0 - 1.0	TOPSOIL
2699.00 - 2691.00	1.0 - 9.0	SILT, BROWN; WITH SOME FINE SAND
2691.00 - 2684.00	9.0 - 16.0	CLAY, WHITE, SILTY; DRY
2684.00 - 2681.00	16.0 - 19.0	SAND, BROWNISH-TAN, FINE, SILTY; DRY
2681.00 - 2673.00	19.0 - 27.0	SAND, GREENISH-BROWN, FINE TO MEDIUM, SILTY; MOIST
2673.00 - 2666.00	27.0 - 34.0	SILT, TANNISH-BROWN, CLAYEY; WITH FINE TO MEDIUM SAND, MOIST
2666.00 - 2646.00	34.0 - 54.0	SILT, TANNISH-BROWN; WITH LITTLE TO NO SAND, SATURATED
2646.00 - 2631.00	54.0 - 69.0	CLAY, TANNISH-BROWN, SILTY; LITTLE SAND, HARD

DEPTH TO WATER - 34 FEET.

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Location Information

Legal Location:SE SE NE NE SEC. 17, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-17AADD
Basin:KEYA PAHA Latitude:43 16' 15"
Hydrologic Unit Code:10150006 Longitude:100 39' 07"
Land Owner: Ground Surface Elevation (ft.):2665 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/13/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:
Test Hole Number:17 Total Drill Hole Depth (ft.):74.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2665.00 - 2651.00	0.0 - 14.0	SAND, LIGHT-TANNISH-BROWN, FINE TO MEDIUM; MOIST
2651.00 - 2646.00	14.0 - 19.0	SAND, OLIVE TO GREENISH-BROWN, FINE, SILTY; MOIST
2646.00 - 2631.00	19.0 - 34.0	SAND, LIGHT-BROWN WITH A GREENISH TINGE, FINE TO MEDIUM; ROCK AT 20 FEET, DRY
2631.00 - 2613.00	34.0 - 52.0	CLAY, BROWN, SILTY; SOME FINE SAND
2613.00 - 2598.00	52.0 - 67.0	CLAY, KHAKI-TAN, SILTY, VERY SANDY; SATURATED
2598.00 - 2596.00	67.0 - 69.0	CLAY, BROWN; HARD, COMPACT
2596.00 - 2591.00	69.0 - 74.0	SILT, BROWN, SANDY; DRY TO MOIST

DEPTH TO WATER - 52 FEET.

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Location Information

Legal Location: NE NW NW NW SEC. 18, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-18BBBA
Basin: KEYA PAHA Latitude: 43 16' 25"
Hydrologic Unit Code: 10150006 Longitude: 100 41' 18"
Land Owner: Ground Surface Elevation (ft.): 2598 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 06/15/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 16 Total Drill Hole Depth (ft.): 104.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2598.00 - 2589.00	0.0 - 9.0	SAND, TANNISH-BROWN, FINE TO MEDIUM, VERY SILTY; MOIST
2589.00 - 2583.00	9.0 - 15.0	SAND, TANNISH-BROWN, FINE, SILTY, VERY CLAYEY; SLIGHTLY SATURATED
2583.00 - 2574.00	15.0 - 24.0	SILT, BUFF-BROWN, FINE; WITH FINE SAND, SATURATED
2574.00 - 2547.00	24.0 - 51.0	SAND, TANNISH-BROWN, FINE TO COARSE; WITH SILT, SATURATED
2547.00 - 2539.00	51.0 - 59.0	CLAY, TANNISH-BROWN TO BUFF, SILTY; WITH SOME SAND, HARD, DRY
2539.00 - 2514.00	59.0 - 84.0	CLAY, LIGHT-TANNISH-BROWN, SILTY; WITH SOME FINE TO MEDIUM SAND, HARD, DRY
2514.00 - 2509.00	84.0 - 89.0	CLAY, GREENISH-BROWN; WITH LITTLE TO NO SAND, HARD, DRY
2509.00 - 2505.00	89.0 - 93.0	CLAY, TANNISH-BROWN; WITH SOME FINE TO MEDIUM SAND, DRY
2505.00 - 2494.00	93.0 - 104.0	CLAY, BROWNISH-TAN, SILTY; WITH SOME FINE TO MEDIUM SAND, HARD, DRY

DEPTH TO WATER - 15 FEET.

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Location Information

Legal Location:SE SW SE NE SEC. 19, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-19ADCD
Basin:KEYA PAHA Latitude:43 15' 08"
Hydrologic Unit Code:10150006 Longitude:100 40' 26"
Land Owner: Ground Surface Elevation (ft.):2675 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/27/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:25 Total Drill Hole Depth (ft.):69.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2675.00 - 2674.00	0.0 - 1.0	TOPSOIL
2674.00 - 2671.00	1.0 - 4.0	CLAY, BROWN, SILTY; DRY
2671.00 - 2666.00	4.0 - 9.0	CLAY, WHITISH-TAN, SILTY; VERY DRY
2666.00 - 2661.00	9.0 - 14.0	CLAY, LIGHT-TAN; DRY
2661.00 - 2656.00	14.0 - 19.0	CLAY, LIGHT-GRAY, SILTY; DRY
2656.00 - 2646.00	19.0 - 29.0	CLAY, LIGHT-GRAY; MOIST
2646.00 - 2641.00	29.0 - 34.0	CLAY, LIGHT-TANNISH-BROWN; MOIST
2641.00 - 2621.00	34.0 - 54.0	CLAY, LIGHT-GRAY, SILTY; SATURATED
2621.00 - 2606.00	54.0 - 69.0	CLAY, REDDISH-TAN; MOIST TO DRY

DEPTH TO WATER - 34 FEET.

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Location Information

Legal Location:SE SE SE NW SEC. 19, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-19BDDD
Basin:KEYA PAHA Latitude:43 15' 08"
Hydrologic Unit Code:10150006 Longitude:100 40' 50"
Land Owner: Ground Surface Elevation (ft.):2640 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/16/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:24 Total Drill Hole Depth (ft.):44.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2640.00 - 2619.00	0.0 - 21.0	SAND, BLACKISH-BROWN, FINE TO MEDIUM; SOME SILT, SATURATED AT 4 FEET
2619.00 - 2609.00	21.0 - 31.0	SAND, DARK-GRAY, FINE TO MEDIUM, SILTY; SATURATED
2609.00 - 2598.00	31.0 - 42.0	CLAY, GRAYISH- TO BLACKISH-BROWN, SILTY; WITH SOME FINE TO MEDIUM SAND, SATURATED
2598.00 - 2596.00	42.0 - 44.0	CLAY, TANNISH-BROWN, SILTY; WITH FINE TO MEDIUM SAND, SOME GRAVEL, DRY

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:SE NE NE NE SEC. 20, T. 038 N., R. 28 W.	
County:TODD	Location:038N-28W-20AAAD
Basin:KEYA PAHA	Latitude:43 15' 29"
Hydrologic Unit Code:10150006	Longitude:100 39' 05"
Land Owner:	Ground Surface Elevation (ft.):2700 T

Project Information

Project:MISSION WATER PROJECT	Geologist:A. BARARI
Drill Date:06/20/1966	Geologist's Log:
Company:SDGS	Driller:BRINKLEY/GANN
Drilling Method:AUGER	Driller's Log:X
Test Hole Number:26	Total Drill Hole Depth (ft.):84.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2700.00 - 2699.00	0.0 - 1.0	TOPSOIL
2699.00 - 2696.00	1.0 - 4.0	SAND, BLACKISH-BROWN, FINE; SOME SILT AND CLAY, DRY
2696.00 - 2691.00	4.0 - 9.0	SAND, TANNISH-BROWN, FINE TO COARSE, SILTY; SOME FINE GRAVEL, SOME CLAY, MOIST
2691.00 - 2681.00	9.0 - 19.0	SAND, TANNISH-YELLOW, FINE; SOME SILT, MOIST
2681.00 - 2676.00	19.0 - 24.0	CLAY, GREENISH-TAN, SILTY, SANDY; MOIST
2676.00 - 2666.00	24.0 - 34.0	SAND, LIGHT-YELLOW, FINE, VERY SILTY; MOIST
2666.00 - 2656.00	34.0 - 44.0	SAND, LIGHT-YELLOW, COARSE; MOIST
2656.00 - 2646.00	44.0 - 54.0	SAND, YELLOWISH-TAN, FINE TO COARSE; MOIST
2646.00 - 2633.00	54.0 - 67.0	SAND, YELLOWISH-TAN, FINE TO COARSE; SATURATED
2633.00 - 2616.00	67.0 - 84.0	CLAY, GREENISH-TAN, SILTY; SOME FINE SAND, DRY

DEPTH TO WATER - 54 FEET.

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Location Information

Legal Location:NE NE NW NE SEC. 21, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-21ABAA
Basin:KEYA PAHA Latitude:43 15' 34"
Hydrologic Unit Code:10150006 Longitude:100 38' 13"
Land Owner: Ground Surface Elevation (ft.):2760 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/07/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:30 Total Drill Hole Depth (ft.):14.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2760.00 - 2751.00	0.0 - 9.0	SILT, BLACKISH-BROWN; DRY
2751.00 - 2746.00	9.0 - 14.0	SILT; DRY (VOLCANIC ASH?)

DEPTH TO WATER - DRY.

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Location Information

Legal Location: NW NW NE NW SEC. 21, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-21BABB
Basin: KEYA PAHA Latitude: 43 15' 33"
Hydrologic Unit Code: 10150006 Longitude: 100 38' 46"
Land Owner: Ground Surface Elevation (ft.): 2680 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 07/07/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 29 Total Drill Hole Depth (ft.): 34.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2680.00 - 2679.00	0.0 - 1.0	TOPSOIL
2679.00 - 2676.00	1.0 - 4.0	SAND, BROWNISH-TAN; SOME SILT, DRY
2676.00 - 2671.00	4.0 - 9.0	SILT, TANNISH-BROWN; DRY
2671.00 - 2666.00	9.0 - 14.0	SILT, TANNISH-BUFF-BROWN; WITH FINE SAND, MOIST
2666.00 - 2646.00	14.0 - 34.0	SILT, BUFFISH- TO TANNISH-BROWN; WITH FINE SAND, MOIST, TEST HOLE CAVING, ABANDONED

DEPTH TO WATER - DRY.

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Location Information

Legal Location:SW SW NW NW SEC. 21, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-21BBCC
Basin:KEYA PAHA Latitude:43 15' 21"
Hydrologic Unit Code:10150006 Longitude:100 39' 04"
Land Owner: Ground Surface Elevation (ft.):2720 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/17/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:27 Total Drill Hole Depth (ft.):84.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2720.00 - 2719.00	0.0 - 1.0	TOPSOIL
2719.00 - 2716.00	1.0 - 4.0	SAND, BLACKISH-BROWN, FINE, SILTY; SOME CLAY
2716.00 - 2711.00	4.0 - 9.0	SAND, BROWNISH-BLACK, FINE, SILTY; MOIST
2711.00 - 2706.00	9.0 - 14.0	CLAY, TANNISH-BROWN, SILTY; WITH SOME FINE SAND, SATURATED
2706.00 - 2701.00	14.0 - 19.0	SAND, BROWNISH-TAN, FINE TO MEDIUM, SILTY; SOME CLAY, SATURATED
2701.00 - 2681.00	19.0 - 39.0	SAND, TANNISH-BROWN, FINE TO MEDIUM; SOME SILT, SATURATED
2681.00 - 2666.00	39.0 - 54.0	CLAY, GREENISH- TO TANNISH-BROWN, SILTY; WITH SOME FINE SAND, MOIST
2666.00 - 2636.00	54.0 - 84.0	CLAY, TANNISH-BROWN, SILTY; WITH SOME FINE SAND, DRY

DEPTH TO WATER - 9 FEET.

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Location Information

Legal Location: NW SE SW NW SEC. 21, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-21BCDB
Basin: KEYA PAHA Latitude: 43 15' 13"
Hydrologic Unit Code: 10150006 Longitude: 100 38' 55"
Land Owner: Ground Surface Elevation (ft.): 2690 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 06/20/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 28 Total Drill Hole Depth (ft.): 84.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2690.00 - 2689.00	0.0 - 1.0	TOPSOIL
2689.00 - 2686.00	1.0 - 4.0	SILT, DARK-BROWN; DRY
2686.00 - 2681.00	4.0 - 9.0	SILT, TANNISH-BROWN; DRY
2681.00 - 2676.00	9.0 - 14.0	SAND, LIGHT-TANNISH-BROWN, FINE TO MEDIUM TO COARSE, SILTY; DRY
2676.00 - 2671.00	14.0 - 19.0	SAND, TANNISH-BROWN, FINE TO COARSE; WITH SILT AND CLAY, MOIST
2671.00 - 2666.00	19.0 - 24.0	CLAY, GREENISH- TO TANNISH-BROWN, SILTY; WITH FINE SAND, MOIST
2666.00 - 2654.00	24.0 - 36.0	SAND, LIGHT-TANNISH-BROWN, FINE TO MEDIUM; WITH SILT
2654.00 - 2628.00	36.0 - 62.0	SAND, TANNISH-BROWN, FINE TO MEDIUM; SATURATED
2628.00 - 2606.00	62.0 - 84.0	CLAY, TANNISH-BROWN, SILTY; ALMOST NO SAND, MOIST TO DRY

DEPTH TO WATER - 36 FEET.

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Location Information

Legal Location:NE NE SW SE SEC. 21, T. 038 N., R. 28 W.	
County:TODD	Location:038N-28W-21DCAA
Basin:KEYA PAHA	Latitude:43 14' 55"
Hydrologic Unit Code:10150006	Longitude:100 38' 10"
Land Owner:	Ground Surface Elevation (ft.):2750 T

Project Information

Project:MISSION WATER PROJECT	Geologist:A. BARARI
Drill Date:06/23/1966	Geologist's Log:
Company:SDGS	Driller:BRINKLEY/GANN
Drilling Method:AUGER	Driller's Log:X
Test Hole Number:32A	Total Drill Hole Depth (ft.):59.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41 (NOT USED).

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2750.00 - 2746.00	0.0 - 4.0	SAND, BROWNISH-TAN, FINE TO MEDIUM TO COARSE; MOIST
2746.00 - 2741.00	4.0 - 9.0	SAND, LIGHT-GREENISH-TAN, FINE TO MEDIUM, SILTY
2741.00 - 2733.00	9.0 - 17.0	SAND, TANNISH-BROWN, FINE, SILTY
2733.00 - 2706.00	17.0 - 44.0	SAND, BUFF- TO TANNISH-BROWN, FINE TO MEDIUM, SILTY; WET
2706.00 - 2691.00	44.0 - 59.0	SAND, TANNISH-BROWN, FINE TO MEDIUM; SATURATED, GOT STUCK AND ABANDONED HOLE

DEPTH TO WATER - 44 FEET.

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Location Information

Legal Location: NE NW SW SE SEC. 21, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-21DCBA
Basin: KEYA PAHA Latitude: 43 14' 55"
Hydrologic Unit Code: 10150006 Longitude: 100 38' 20"
Land Owner: Ground Surface Elevation (ft.): 2730 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 07/06/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 32 Total Drill Hole Depth (ft.): 99.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2730.00 - 2721.00	0.0 - 9.0	SAND, YELLOWISH-TAN, FINE; DRY
2721.00 - 2711.00	9.0 - 19.0	SAND, YELLOW, FINE TO COARSE
2711.00 - 2706.00	19.0 - 24.0	SAND, TANNISH-BROWN, SILTY; MOIST
2706.00 - 2649.00	24.0 - 81.0	SAND, TANNISH-GRAY, FINE TO MEDIUM; SATURATED AT 40 FEET
2649.00 - 2636.00	81.0 - 94.0	CLAY, GREENISH-GRAY; SOME FINE SAND, MOIST
2636.00 - 2631.00	94.0 - 99.0	CLAY, PINKISH-TAN; HARD, DRY

DEPTH TO WATER - 40 FEET.

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Location Information

Legal Location:SW SW SW SE SEC. 21, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-21DCCC 1
Basin:KEYA PAHA Latitude:43 14' 43"
Hydrologic Unit Code:10150006 Longitude:100 38' 27"
Land Owner: Ground Surface Elevation (ft.):2700 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/11/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:33 Total Drill Hole Depth (ft.):79.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2700.00 - 2699.00	0.0 - 1.0	TOPSOIL
2699.00 - 2696.00	1.0 - 4.0	SAND, LIGHT-GRAYISH-TAN, FINE; MOIST
2696.00 - 2691.00	4.0 - 9.0	SAND, WHITISH-GRAY, FINE TO MEDIUM; MOIST
2691.00 - 2686.00	9.0 - 14.0	SAND, LIGHT-GRAYISH-GREEN, SILTY; MOIST
2686.00 - 2681.00	14.0 - 19.0	SILT, LIGHT-GREEN TO GRAY; WITH FINE SAND, MOIST
2681.00 - 2656.00	19.0 - 44.0	SAND, WHITE; MOIST TO DRY
2656.00 - 2621.00	44.0 - 79.0	SAND, LIGHT-TANNISH-BROWN, FINE TO MEDIUM; SATURATED

DEPTH TO WATER - 44 FEET.

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Location Information

Legal Location:SW SW SW SE SEC. 21, T. 038 N., R. 28 W.	
County:TODD	Location:038N-28W-21DCCC 2
Basin:KEYA PAHA	Latitude:43 14' 43"
Hydrologic Unit Code:10150006	Longitude:100 38' 27"
Land Owner:	Ground Surface Elevation (ft.):2700 T

Project Information

Project:MISSION WATER PROJECT	Geologist:A. BARARI
Drill Date:06/24/1966	Geologist's Log:
Company:SDGS	Driller:BRINKLEY/GANN
Drilling Method:AUGER	Driller's Log:X
Test Hole Number:33A	Total Drill Hole Depth (ft.):49.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2700.00 - 2699.00	0.0 - 1.0	TOPSOIL
2699.00 - 2696.00	1.0 - 4.0	SAND, BROWNISH-TAN; MOIST
2696.00 - 2691.00	4.0 - 9.0	SAND, LIGHT-TANNISH-BROWN, FINE TO MEDIUM, SILTY; MOIST
2691.00 - 2686.00	9.0 - 14.0	SAND, LIGHT-BUFF TO TANNISH-BROWN, FINE, SILTY; MOIST
2686.00 - 2681.00	14.0 - 19.0	SILT, GREENISH- TO TANNISH-BROWN, CLAYEY; WITH FINE SAND, WET
2681.00 - 2656.00	19.0 - 44.0	SAND, BUFF TO TANNISH-BROWN, FINE TO MEDIUM; SOME SILT, WET
2656.00 - 2651.00	44.0 - 49.0	SAND, TANNISH-BROWN, FINE TO COARSE; SATURATED, TEST HOLE CAVING, ABANDONED DRILLING

DEPTH TO WATER - 44 FEET.

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Location Information

Legal Location:SW SW NW SW SEC. 22, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-22CBCC
Basin:KEYA PAHA Latitude:43 14' 56"
Hydrologic Unit Code:10150006 Longitude:100 37' 51"
Land Owner: Ground Surface Elevation (ft.):2775 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/21/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:28A Total Drill Hole Depth (ft.):20.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41 (NOT USED).

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2775.00 - 2773.00	0.0 - 2.0	TOPSOIL
2773.00 - 2761.00	2.0 - 14.0	SILT, BROWNISH-TAN, FINE; WITH FINE SAND, HARD, DRY
2761.00 - 2755.00	14.0 - 20.0	SILT, LIGHT-BROWNISH-TAN, VERY CLAYEY; VERY HARD, VERY DRY, ABANDONED HOLE

DEPTH TO WATER - DRY.

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Location Information

Legal Location: NW SW NW NW SEC. 23, T. 038 N., R. 28 W.	
County: TODD	Location: 038N-28W-23BBCB
Basin: KEYA PAHA	Latitude: 43 15' 27"
Hydrologic Unit Code: 10150006	Longitude: 100 36' 41"
Land Owner:	Ground Surface Elevation (ft.): 2625 T

Project Information

Project: MISSION WATER PROJECT	Geologist: A. BARARI
Drill Date: 06/22/1966	Geologist's Log:
Company: SDGS	Driller: BRINKLEY/GANN
Drilling Method: AUGER	Driller's Log: X
Test Hole Number: 34	Total Drill Hole Depth (ft.): 79.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2625.00 - 2624.00	0.0 - 1.0	TOPSOIL
2624.00 - 2621.00	1.0 - 4.0	CLAY, BROWN, SILTY; WITH FINE SAND, MOIST
2621.00 - 2616.00	4.0 - 9.0	CLAY, BROWN, SILTY; SATURATED
2616.00 - 2611.00	9.0 - 14.0	CLAY, LIGHT-TANNISH-BROWN, SILTY; SOME GREEN LAYERS, SATURATED
2611.00 - 2596.00	14.0 - 29.0	CLAY, LIGHT-TANNISH-GREEN, SILTY; SOME FINE SAND, SATURATED
2596.00 - 2566.00	29.0 - 59.0	CLAY, GREENISH-GRAY AND TANNISH-BROWN, SILTY; SATURATED
2566.00 - 2561.00	59.0 - 64.0	CLAY, LIGHT-GREEN, SILTY; MOIST
2561.00 - 2546.00	64.0 - 79.0	CLAY, LIGHT-PINKISH-BROWN, SILTY; SOME COARSE SAND TO FINE GRAVEL, DRY

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location: NW NW NW SW SEC. 23, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-23CBBB
Basin: KEYA PAHA Latitude: 43 15' 07"
Hydrologic Unit Code: 10150006 Longitude: 100 36' 40"
Land Owner: Ground Surface Elevation (ft.): 2640 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 07/05/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 35 Total Drill Hole Depth (ft.): 84.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2640.00 - 2639.00	0.0 - 1.0	TOPSOIL
2639.00 - 2631.00	1.0 - 9.0	SILT, LIGHT-BLACKISH-BROWN; MOIST
2631.00 - 2621.00	9.0 - 19.0	SAND, LIGHT- TO DARK-GRAY, FINE TO MEDIUM; SOME SILT, SATURATED
2621.00 - 2578.00	19.0 - 62.0	CLAY, LIGHT-TANNISH-BROWN; SOME FINE SAND, SATURATED
2578.00 - 2556.00	62.0 - 84.0	CLAY, LIGHT-TANNISH-BROWN; MOIST TO DRY

DEPTH TO WATER - 9 FEET.

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Location Information

Legal Location:SE SE NE NE SEC. 24, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-24AADD
Basin:KEYA PAHA Latitude:43 15' 22"
Hydrologic Unit Code:10150006 Longitude:100 34' 20"
Land Owner: Ground Surface Elevation (ft.):2535 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/20/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:36 Total Drill Hole Depth (ft.):44.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2535.00 - 2534.00	0.0 - 1.0	TOPSOIL
2534.00 - 2531.00	1.0 - 4.0	SILT, TANNISH-BROWN, CLAYEY; WITH SOME FINE TO MEDIUM SAND, DRY
2531.00 - 2521.00	4.0 - 14.0	SILT, TANNISH-BROWN, CLAYEY; WITH SOME FINE TO MEDIUM TO COARSE SAND, MOIST
2521.00 - 2514.00	14.0 - 21.0	SILT, TANNISH-BROWN, CLAYEY; WITH A MINUTE AMOUNT OF FINE SAND, MOIST
2514.00 - 2506.00	21.0 - 29.0	SILT, TANNISH-BROWN; LITTLE SAND, SATURATED
2506.00 - 2491.00	29.0 - 44.0	CLAY, TANNISH-BROWN, SILTY; SOME FINE TO MEDIUM SAND, DRY

DEPTH TO WATER - 21 FEET.

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Location Information

Legal Location:SE SE SE NW SEC. 26, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-26BDDD
Basin:KEYA PAHA Latitude:43 14' 16"
Hydrologic Unit Code:10150006 Longitude:100 36' 06"
Land Owner: Ground Surface Elevation (ft.):2640 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/21/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:45 Total Drill Hole Depth (ft.):64.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2640.00 - 2639.00	0.0 - 1.0	TOPSOIL
2639.00 - 2636.00	1.0 - 4.0	CLAY, DARK-BROWN, SILTY; DRY
2636.00 - 2631.00	4.0 - 9.0	CLAY, DARK-BROWN, SILTY; MOIST
2631.00 - 2626.00	9.0 - 14.0	SAND, LIGHT-TAN, FINE TO MEDIUM; SOME SILT AND CLAY, MOIST
2626.00 - 2611.00	14.0 - 29.0	SAND, GRAY, FINE TO MEDIUM; SOME CLAY, SATURATED
2611.00 - 2596.00	29.0 - 44.0	SAND, LIGHT-TANNISH-BROWN, FINE TO MEDIUM; SATURATED
2596.00 - 2586.00	44.0 - 54.0	CLAY, LIGHT-TAN, SILTY; ALTERNATING HARD AND SOFT DRILLING
2586.00 - 2576.00	54.0 - 64.0	CLAY, REDDISH- TO TANNISH-BROWN, SILTY; WITH SOME FINE TO COARSE SAND, HARD, DRY

DEPTH TO WATER - 14 FEET.

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Location Information

Legal Location:NE NE SE SE SEC. 26, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-26DDAA
Basin:KEYA PAHA Latitude:43 14' 03"
Hydrologic Unit Code:10150006 Longitude:100 35' 30"
Land Owner: Ground Surface Elevation (ft.):2615 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/07/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:46 Total Drill Hole Depth (ft.):49.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2615.00 - 2611.00	0.0 - 4.0	SAND, LIGHT-GRAY; SATURATED
2611.00 - 2603.00	4.0 - 12.0	SAND, BLACKISH-BROWN; SATURATED
2603.00 - 2601.00	12.0 - 14.0	CLAY, DARK-BROWNISH-BLACK; SOME FINE SAND, SATURATED
2601.00 - 2591.00	14.0 - 24.0	CLAY, YELLOWISH-TAN; SATURATED
2591.00 - 2586.00	24.0 - 29.0	CLAY, LIGHT-TANNISH-YELLOW; SATURATED
2586.00 - 2566.00	29.0 - 49.0	CLAY, REDDISH-TAN; MOIST

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:SW SW SE SW SEC. 27, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-27CDCC
Basin:KEYA PAHA Latitude:43 13' 51"
Hydrologic Unit Code:10150006 Longitude:100 37' 34"
Land Owner: Ground Surface Elevation (ft.):2765 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/21/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:27A Total Drill Hole Depth (ft.):49.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41 (NOT USED).

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2765.00 - 2763.00	0.0 - 2.0	TOPSOIL
2763.00 - 2751.00	2.0 - 14.0	SAND, YELLOWISH-GREEN, SILTY, VERY CLAYEY; MOIST
2751.00 - 2736.00	14.0 - 29.0	SAND, GREEN, FINE TO MEDIUM, SILTY; DRY TO SLIGHTLY MOIST
2736.00 - 2726.00	29.0 - 39.0	SAND, LIGHT-YELLOWISH-TAN, FINE TO MEDIUM; MOIST
2726.00 - 2716.00	39.0 - 49.0	SILT, GREENISH-TAN, VERY CLAYEY; SOME VERY FINE SAND, TEST HOLE CAVING AND THUS ABANDONED

DEPTH TO WATER - DRY.

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Location Information

Legal Location:SW SW NE SE SEC. 27, T. 038 N., R. 28 W.	
County:TODD	Location:038N-28W-27DACC
Basin:KEYA PAHA	Latitude:43 14' 04"
Hydrologic Unit Code:10150006	Longitude:100 36' 56"
Land Owner:	Ground Surface Elevation (ft.):2680 T

Project Information

Project:MISSION WATER PROJECT	Geologist:A. BARARI
Drill Date:06/21/1966	Geologist's Log:
Company:SDGS	Driller:BRINKLEY/GANN
Drilling Method:AUGER	Driller's Log:X
Test Hole Number:44	Total Drill Hole Depth (ft.):114.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2680.00 - 2679.00	0.0 - 1.0	TOPSOIL
2679.00 - 2676.00	1.0 - 4.0	SAND, DARK-TANNISH-BROWN, FINE; SOME SILT
2676.00 - 2666.00	4.0 - 14.0	SAND, BROWNISH-TAN, FINE TO MEDIUM, SILTY, CLAYEY
2666.00 - 2653.00	14.0 - 27.0	SILT, BROWNISH-TAN, CLAYEY; WITH FINE TO MEDIUM SAND
2653.00 - 2646.00	27.0 - 34.0	SAND, GRAYISH-BROWN, FINE TO MEDIUM; SATURATED
2646.00 - 2632.00	34.0 - 48.0	SAND, TANNISH-BROWN, FINE TO MEDIUM; LITTLE SILT, SATURATED
2632.00 - 2622.00	48.0 - 58.0	CLAY, TANNISH-BROWN, SILTY; WITH FINE TO MEDIUM SAND, HARD, SATURATED
2622.00 - 2566.00	58.0 - 114.0	CLAY, GREEN; WITH SOME SILT, HARD, DRY

DEPTH TO WATER - 27 FEET.

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Location Information

Legal Location:SW SE SE SE SEC. 27, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-27DDDC
Basin:KEYA PAHA Latitude:43 13' 51"
Hydrologic Unit Code:10150006 Longitude:100 36' 47"
Land Owner: Ground Surface Elevation (ft.):2680 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/28/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:40A Total Drill Hole Depth (ft.):79.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41 (NOT USED).

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2680.00 - 2676.00	0.0 - 4.0	SILT, BLACKISH-BROWN; DRY
2676.00 - 2672.00	4.0 - 8.0	CLAY, TANNISH-BROWN
2672.00 - 2666.00	8.0 - 14.0	SAND, BUFF- TO TANNISH-BROWN, FINE TO MEDIUM; MOIST
2666.00 - 2661.00	14.0 - 19.0	SAND, BUFF- TO TANNISH-BROWN, FINE TO MEDIUM; SOME CLAY, MOIST
2661.00 - 2656.00	19.0 - 24.0	CLAY, BROWNISH-TAN, SANDY; MOIST
2656.00 - 2626.00	24.0 - 54.0	SAND, BUFF- TO BROWNISH-TAN; SATURATED AT 29 FEET
2626.00 - 2601.00	54.0 - 79.0	SAND, BROWNISH-TAN, FINE TO MEDIUM; SATURATED

DEPTH TO WATER - 29 FEET.

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Location Information

Legal Location: NW NW NE SW SEC. 28, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-28CABB
Basin: KEYA PAHA Latitude: 43 14' 15"
Hydrologic Unit Code: 10150006 Longitude: 100 38' 46"
Land Owner: Ground Surface Elevation (ft.): 2745 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 06/17/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 43 Total Drill Hole Depth (ft.): 67.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2745.00 - 2744.00	0.0 - 1.0	TOPSOIL
2744.00 - 2731.00	1.0 - 14.0	CLAY, GREENISH-YELLOW, SILTY; MOIST
2731.00 - 2726.00	14.0 - 19.0	SAND, TANNISH-GREEN, FINE; SOME SILT, DRY TO SLIGHTLY MOIST
2726.00 - 2716.00	19.0 - 29.0	SAND, LIGHT-TANNISH-BUFF, VERY FINE, SILTY; DRY
2716.00 - 2711.00	29.0 - 34.0	SAND, WHITISH-TAN, FINE TO MEDIUM; DRY TO SLIGHTLY MOIST
2711.00 - 2706.00	34.0 - 39.0	SAND, LIGHT-TANNISH-BUFF, FINE TO MEDIUM; GRAVEL STRINGERS AT 37 AND 38 FEET, SLIGHTLY MOIST
2706.00 - 2698.00	39.0 - 47.0	SAND, LIGHT-TANNISH-BUFF, FINE TO COARSE; SOME SILT, DRY
2698.00 - 2678.00	47.0 - 67.0	SAND, LIGHT-TANNISH-BUFF TO PINK, FINE TO MEDIUM; DRY

DEPTH TO WATER - DRY.

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Location Information

Legal Location:SE SW NW SE SEC. 29, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-29DBCD
Basin:KEYA PAHA Latitude:43 14' 04"
Hydrologic Unit Code:10150006 Longitude:100 39' 32"
Land Owner: Ground Surface Elevation (ft.):2720 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/27/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:42 Total Drill Hole Depth (ft.):29.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2720.00 - 2719.00	0.0 - 1.0	TOPSOIL
2719.00 - 2716.00	1.0 - 4.0	SAND, BROWNISH-TAN, SILTY; DRY
2716.00 - 2711.00	4.0 - 9.0	SAND, LIGHT-BROWN, FINE TO MEDIUM; MOIST
2711.00 - 2706.00	9.0 - 14.0	SAND, LIGHT-TAN, SILTY; MOIST
2706.00 - 2696.00	14.0 - 24.0	SAND, BROWN, SILTY; MOIST
2696.00 - 2691.00	24.0 - 29.0	SAND, LIGHT-BROWN, SILTY, CLAYEY; SOME FINE GRAVEL, HARD, DRY, CAVING SO HOLE WAS ABANDONED

DEPTH TO WATER - DRY.

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Location Information

Legal Location:NE NE NE NW SEC. 30, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-30BAAA
Basin:KEYA PAHA Latitude:43 14' 41"
Hydrologic Unit Code:10150006 Longitude:100 40' 50"
Land Owner: Ground Surface Elevation (ft.):2638 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/16/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:40 Total Drill Hole Depth (ft.):79.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2638.00 - 2636.00	0.0 - 2.0	TOPSOIL
2636.00 - 2634.00	2.0 - 4.0	CLAY, DARK-BLACKISH-BROWN, SILTY; SOME FINE SAND
2634.00 - 2629.00	4.0 - 9.0	CLAY, GRAYISH-BROWN, SILTY; WITH FINE SAND, WET
2629.00 - 2624.00	9.0 - 14.0	SAND, GRAYISH-BROWN; WITH SILT AND CLAY, SATURATED
2624.00 - 2619.00	14.0 - 19.0	SAND, DARK-GRAYISH-BROWN; WITH SILT, SATURATED
2619.00 - 2612.00	19.0 - 26.0	SAND, GRAYISH-BROWN, COARSE; SOME SILT, SATURATED
2612.00 - 2582.00	26.0 - 56.0	CLAY, TANNISH-BROWN, SILTY; WITH SOME FINE TO COARSE SAND, SATURATED
2582.00 - 2559.00	56.0 - 79.0	CLAY, TANNISH-BROWN, SILTY; WITH SOME FINE TO COARSE SAND, COMPACT, DRY

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:SE SE SE NW SEC. 30, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-30BDDD
Basin:KEYA PAHA Latitude:43 14' 18"
Hydrologic Unit Code:10150006 Longitude:100 40' 52"
Land Owner: Ground Surface Elevation (ft.):2645 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/16/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:41 Total Drill Hole Depth (ft.):49.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2645.00 - 2644.00	0.0 - 1.0	TOPSOIL
2644.00 - 2641.00	1.0 - 4.0	SAND, DARK-GRAYISH-BROWN, VERY FINE, SILTY, CLAYEY; MOIST
2641.00 - 2636.00	4.0 - 9.0	SAND, DARK-GRAY, VERY FINE, SILTY; SOME CLAY, SATURATED
2636.00 - 2631.00	9.0 - 14.0	SAND, DARK-GRAY, VERY FINE, SILTY; MORE CLAY THAN ABOVE, SATURATED
2631.00 - 2624.00	14.0 - 21.0	SAND, DARK-BROWNISH-BLACK, VERY FINE, SILTY; WITH CLAY, SATURATED
2624.00 - 2610.00	21.0 - 35.0	CLAY, LIGHT-TANNISH-BROWN, SILTY, SANDY; SATURATED
2610.00 - 2596.00	35.0 - 49.0	CLAY, TAN, SILTY; SOME MEDIUM TO COARSE SAND, DRY TO SLIGHTLY MOIST

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:NE NE NW NW SEC. 31, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-31BBAA
Basin:KEYA PAHA Latitude:43 13' 48"
Hydrologic Unit Code:10150006 Longitude:100 41' 05"
Land Owner: Ground Surface Elevation (ft.):2680 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/17/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:47 Total Drill Hole Depth (ft.):49.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2680.00 - 2679.00	0.0 - 1.0	TOPSOIL
2679.00 - 2676.00	1.0 - 4.0	SAND, BROWN, FINE TO MEDIUM; SOME SILT, SATURATED
2676.00 - 2671.00	4.0 - 9.0	SAND, BROWN, FINE TO MEDIUM; SATURATED
2671.00 - 2661.00	9.0 - 19.0	CLAY, LIGHT-GREENISH-GRAY, SILTY; NO SAND, MOIST
2661.00 - 2643.00	19.0 - 37.0	SAND, LIGHT-TANNISH-YELLOW, FINE TO MEDIUM; SATURATED
2643.00 - 2631.00	37.0 - 49.0	CLAY, LIGHT-GREENISH-YELLOW, SILTY; SOME COARSE SAND, DRY

DEPTH TO WATER - 1 FOOT.

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Location Information

Legal Location:NE NW NW NW SEC. 32, T. 038 N., R. 28 W.
County:TODD Location:038N-28W-32BBBA
Basin:KEYA PAHA Latitude:43 13' 49"
Hydrologic Unit Code:10150006 Longitude:100 40' 08"
Land Owner: Ground Surface Elevation (ft.):2660 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/17/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:48 Total Drill Hole Depth (ft.):59.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2660.00 - 2656.00	0.0 - 4.0	SAND, DARK-TANNISH-BROWN, SILTY; SOME CLAY, MOIST
2656.00 - 2651.00	4.0 - 9.0	SAND, GRAYISH- TO TANNISH-BROWN, SILTY, CLAYEY; SATURATED
2651.00 - 2646.00	9.0 - 14.0	SAND, TANNISH-BROWN, FINE TO COARSE; WITH SOME SILT, SATURATED
2646.00 - 2636.00	14.0 - 24.0	SAND AND GRAVEL, BROWNISH-TAN, COARSE SAND TO MEDIUM GRAVEL; GRAVEL STRINGERS AT 15 AND 17 FEET, SATURATED
2636.00 - 2626.00	24.0 - 34.0	CLAY, GREEN, SILTY; SOME SAND, MOIST
2626.00 - 2601.00	34.0 - 59.0	CLAY, PINKISH- TO BUFFISH-TAN, SILTY; SOME VERY FINE SAND, MOIST

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location: NW NW NW NW SEC. 32, T. 038 N., R. 28 W.
County: TODD Location: 038N-28W-32BBBB
Basin: KEYA PAHA Latitude: 43 13' 47"
Hydrologic Unit Code: 10150006 Longitude: 100 40' 16"
Land Owner: Ground Surface Elevation (ft.): 2657 T

Project Information

Project: WATER RIGHTS Geologist: D. DRISCOLL
Drill Date: 08/09/1957 Geologist's Log:
Company: GRIMSHAW DRILLING Driller: J. HUTMACHER
Drilling Method: Driller's Log: X
Test Hole Number: Total Drill Hole Depth (ft.): 40.0
Samples:

Well Information

SDGS Well Name: Aquifer: ALLUVIUM
Water Rights Well: TD-57A Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: STEEL Casing Diameter (in.): 1.5
Screen Type: UNKNOWN Screen Length (ft.):
Total Casing and Screen (ft.): 25.8 Casing Stick-up (ft.): 2.00
Well Maintenance Date: 06/26/1984

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

CASING DIAMETER 1 1/4-INCH AND 1 1/2-INCH. ORIGINAL OBSERVATION WELL NAME K-1.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2657.00 - 2655.00	0.0 - 2.0	LOAM
2655.00 - 2645.00	2.0 - 12.0	SAND AND CLAY, FINE SAND
2645.00 - 2629.00	12.0 - 28.0	SAND, FINE; CLEAN, SAMPLED AT 25 FEET
2629.00 - 2617.00	28.0 - 40.0	SAND; FIRM, WITH CLAY LAYERS

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Location Information

Legal Location:SW SW SW SE SEC. 02, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-02DCCC
Basin:KEYA PAHA Latitude:43 17' 19"
Hydrologic Unit Code:10150006 Longitude:100 43' 11"
Land Owner: Ground Surface Elevation (ft.):2680 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/14/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:4 Total Drill Hole Depth (ft.):29.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2680.00 - 2678.00	0.0 - 2.0	TOPSOIL, BLACK
2678.00 - 2676.00	2.0 - 4.0	CLAY, BROWN, SILTY; WITH FINE SAND (ROADBED)
2676.00 - 2666.00	4.0 - 14.0	CLAY, BROWNISH-TAN, SILTY; SOME FINE SAND
2666.00 - 2661.00	14.0 - 19.0	SAND, WHITISH-TAN; DRY
2661.00 - 2656.00	19.0 - 24.0	SAND, GREENISH-TAN; SOME MOISTURE
2656.00 - 2651.00	24.0 - 29.0	CLAY, LIGHT-BROWN, SILTY; HARD, DRY

DEPTH TO WATER - DRY.

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Location Information

Legal Location:NE NE NE SW SEC. 09, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-09CAAA
Basin:KEYA PAHA Latitude:43 16' 51"
Hydrologic Unit Code:10150006 Longitude:100 45' 35"
Land Owner: Ground Surface Elevation (ft.):2690 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/14/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:7A Total Drill Hole Depth (ft.):69.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41 (NOT USED).

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2690.00 - 2686.00	0.0 - 4.0	SAND, LIGHT-YELLOWISH-TAN; SOME SILT, DRY
2686.00 - 2681.00	4.0 - 9.0	SAND, YELLOWISH-TAN, FINE; DRY
2681.00 - 2678.00	9.0 - 12.0	SAND, LIGHT-TANNISH-BROWN; DRY
2678.00 - 2676.00	12.0 - 14.0	SAND, LIGHT-YELLOWISH- TO BROWNISH-RED; SOME GRAVEL, DRY
2676.00 - 2661.00	14.0 - 29.0	SILT, LIGHT-TANNISH-GRAY, VERY CLAYEY; SOME FINE SAND, SLIGHTLY MOIST
2661.00 - 2651.00	29.0 - 39.0	CLAY, LIGHT-TANNISH-BUFF, SILTY; HARDLY ANY SAND, SLIGHTLY MOIST
2651.00 - 2633.00	39.0 - 57.0	CLAY, LIGHT-GRAYISH-BROWN, SILTY; SOME FINE SAND, SATURATED
2633.00 - 2621.00	57.0 - 69.0	CLAY, BROWNISH-TAN, SILTY; SOME SAND, VERY HARD, DRY

DEPTH TO WATER - 39 FEET.

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Location Information

Legal Location:SW SW SW SW SEC. 11, T. 038 N., R. 29 W.	
County:TODD	Location:038N-29W-11CCCC
Basin:KEYA PAHA	Latitude:43 16' 29"
Hydrologic Unit Code:10150006	Longitude:100 43' 47"
Land Owner:	Ground Surface Elevation (ft.):2678 T

Project Information

Project:MISSION WATER PROJECT	Geologist:A. BARARI
Drill Date:06/14/1966	Geologist's Log:
Company:SDGS	Driller:BRINKLEY/GANN
Drilling Method:AUGER	Driller's Log:X
Test Hole Number:8	Total Drill Hole Depth (ft.):84.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2678.00 - 2669.00	0.0 - 9.0	SAND, LIGHT-YELLOWISH-TAN, FINE, SILTY; DRY
2669.00 - 2649.00	9.0 - 29.0	CLAY, LIGHT-TANNISH-BROWN, SILTY; SOME SAND, MOIST
2649.00 - 2637.00	29.0 - 41.0	CLAY, LIGHT-TANNISH-BROWN, SILTY, SANDY; SATURATED
2637.00 - 2616.00	41.0 - 62.0	CLAY, LIGHT-TANNISH-BROWN TO BUFF, SILTY; SOME SAND, HARD, DRY
2616.00 - 2601.00	62.0 - 77.0	CLAY, LIGHT-TANNISH-BROWN TO BUFF, SILTY; WITH MOIST SAND TO FINE GRAVEL
2601.00 - 2594.00	77.0 - 84.0	CLAY, LIGHT-TANNISH-BROWN, SILTY; SOME SAND, HARD, DRY

DEPTH TO WATER - 29 FEET.

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Location Information

Legal Location:SW SE SE NE SEC. 13, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-13ADDC
Basin:KEYA PAHA Latitude:43 15' 50"
Hydrologic Unit Code:10150006 Longitude:100 41' 25"
Land Owner: Ground Surface Elevation (ft.):2610 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/13/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-68 Total Drill Hole Depth (ft.):162.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

NO GEOLOGISTS LOG AVAILABLE FROM THIS TEST-HOLE. LITHOLOGY WAS TAKEN FROM R2-94-69 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2610.00 - 2600.00	0.0 - 10.0	SILT, GRAYISH-ORANGE, SLIGHTLY CLAYEY; NONCALCAREOUS, MASSIVE
2600.00 - 2448.00	10.0 - 162.0	SILTSTONE, LIGHT-BROWN TO PALE-YELLOW-BROWN, CLAYEY; NONCALCAREOUS; A FEW WHITE BENTONITIC LAYERS; BRITTLE; BECOMING CALCAREOUS AT 90 FEET

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Location Information

Legal Location:SW SE SE NE SEC. 13, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-13ADDC 1
Basin:KEYA PAHA Latitude:43 15' 50"
Hydrologic Unit Code:10150006 Longitude:100 41' 25"
Land Owner: Ground Surface Elevation (ft.):2610 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/14/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-69 Total Drill Hole Depth (ft.):447.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2610.00 - 2600.00	0.0 - 10.0	SILT, GRAYISH-ORANGE, SLIGHTLY CLAYEY; NONCALCAREOUS, MASSIVE
2600.00 - 2450.00	10.0 - 160.0	SILTSTONE, LIGHT-BROWN TO PALE-YELLOW-BROWN, CLAYEY; NONCALCAREOUS; A FEW WHITE BENTONITIC LAYERS; BRITTLE; BECOMING CALCAREOUS AT 90 FEET
2450.00 - 2270.00	160.0 - 340.0	SILT AND SILTSTONE, GRAYISH-ORANGE TO PALE-ORANGE, CLAYEY; NONCALCAREOUS TO MODERATELY CALCAREOUS FROM 260 TO 340 FEET; MASSIVE SILTSTONE (ARIKAREE GROUP?)
2270.00 - 2240.00	340.0 - 370.0	SILTSTONE, LIGHT-OLIVE-GRAY; NONCALCAREOUS; SOME VERY FINE-GRAINED SANDSTONE (WHITE RIVER GROUP?)
2240.00 - 2200.00	370.0 - 410.0	CLAYSTONE, GRAYISH-GREEN TO YELLOW-GRAY AND WHITE; SLIGHTLY CALCAREOUS; MASSIVE; BENTONITIC
2200.00 - 2180.00	410.0 - 430.0	CLAY, MOTTLED DARK-YELLOWISH-ORANGE AND GRAY; GREASY, SLIGHTLY CALCAREOUS; WEATHERED (PIERRE SHALE)
2180.00 - 2163.00	430.0 - 447.0	CLAY, GRAYISH-BLACK; GREASY, NONCALCAREOUS (PIERRE SHALE)

ARIKAREE FORMATION TO 340 FEET; WHITE RIVER GROUP FROM 340 TO 410 FEET.

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Location Information

Legal Location:SW SE SE NE SEC. 13, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-13ADDC 2
Basin:KEYA PAHA Latitude:43 15' 50"
Hydrologic Unit Code:10150006 Longitude:100 41' 25"
Land Owner: Ground Surface Elevation (ft.):2610 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/19/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-70 Total Drill Hole Depth (ft.):113.0
Samples:

Well Information

SDGS Well Name: R2-94-70 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2612.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):20.0
Total Casing and Screen (ft.):115.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2610.00 - 2600.00	0.0 - 10.0	SILT, GRAYISH-ORANGE, SLIGHTLY CLAYEY; NONCALCAREOUS, MASSIVE
2600.00 - 2497.00	10.0 - 113.0	SILTSTONE, LIGHT-BROWN TO PALE-YELLOW-BROWN, CLAYEY; NONCALCAREOUS; A FEW WHITE BENTONITIC LAYERS; BRITTLE; BECOMING CALCAREOUS AT 90 FEET

NO GEOLOGIST LOG AVAILABLE FOR THIS OBSERVATION WELL. LITHOLOGY WAS TAKEN FROM R2-94-69 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION.

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Location Information

Legal Location:SE SE SE SW SEC. 13, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-13CDDD
Basin:KEYA PAHA Latitude:43 15' 35"
Hydrologic Unit Code:10150006 Longitude:100 42' 00"
Land Owner: Ground Surface Elevation (ft.):2648 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/16/1966 Geologist's Log:
Company:SDGS Driller:BRINKELY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:13 Total Drill Hole Depth (ft.):54.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2648.00 - 2646.00	0.0 - 2.0	TOPSOIL
2646.00 - 2643.00	2.0 - 5.0	SAND, DARK-BLACKISH-BROWN, FINE, VERY SILTY; DRY
2643.00 - 2634.00	5.0 - 14.0	SAND, WHITISH-TAN, FINE, SILTY; DRY
2634.00 - 2629.00	14.0 - 19.0	CLAY, PINKISH-BROWN, SILTY; SOME VERY FINE SAND, DRY
2629.00 - 2614.00	19.0 - 34.0	CLAY, LIGHT-GRAY, SILTY; SOME VERY FINE TO FINE SAND, SLIGHTLY MOIST
2614.00 - 2609.00	34.0 - 39.0	CLAY, PINKISH-TAN, SILTY; SOME VERY FINE SAND, MOIST
2609.00 - 2594.00	39.0 - 54.0	CLAY, PINKISH- TO TANNISH-BROWN, SILTY; WITH A LITTLE FINE SAND, MOIST

DEPTH TO WATER - DRY.

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Location Information

Legal Location:NE NE NE SE SEC. 13, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-13DAAA
Basin:KEYA PAHA Latitude:43 15' 58"
Hydrologic Unit Code:10150006 Longitude:100 41' 25"
Land Owner: Ground Surface Elevation (ft.):2616 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/15/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:15 Total Drill Hole Depth (ft.):69.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2616.00 - 2607.00	0.0 - 9.0	SAND, LIGHT-BROWN, FINE; WITH SOME SILT AND CLAY, MOIST
2607.00 - 2602.00	9.0 - 14.0	SAND, LIGHT-TANNISH-BROWN, FINE, SILTY, CLAYEY; SATURATED
2602.00 - 2563.00	14.0 - 53.0	CLAY, TANNISH-BUFF, SILTY, SANDY; SATURATED
2563.00 - 2557.00	53.0 - 59.0	CLAY, BROWNISH-TAN, SILTY; WITH FINE TO MEDIUM SAND, SLIGHTLY MOIST
2557.00 - 2552.00	59.0 - 64.0	CLAY, BROWNISH-TAN, SILTY; WITH FINE TO MEDIUM SAND, DRY
2552.00 - 2547.00	64.0 - 69.0	CLAY, BROWNISH-TAN, SILTY; WITH SOME FINE TO MEDIUM SAND, HARD, DRY

DEPTH TO WATER - 9 FEET.

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Location Information

Legal Location:SE SE SE SE SEC. 13, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-13DDDD
Basin:KEYA PAHA Latitude:43 15' 34"
Hydrologic Unit Code:10150006 Longitude:100 41' 25"
Land Owner: Ground Surface Elevation (ft.):2618 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/15/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:14 Total Drill Hole Depth (ft.):49.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2618.00 - 2614.00	0.0 - 4.0	SAND, DARK-BROWN; WITH CLAYEY SILT
2614.00 - 2609.00	4.0 - 9.0	SAND, TANNISH-BROWN, FINE, SILTY, CLAYEY; ALMOST SATURATED
2609.00 - 2604.00	9.0 - 14.0	SAND, GRAYISH-BROWN, FINE; SOME SILTY CLAY, SATURATED
2604.00 - 2597.00	14.0 - 21.0	CLAY, TANNISH-BROWN, SILTY; WITH SOME FINE SAND, SATURATED
2597.00 - 2583.00	21.0 - 35.0	CLAY, TANNISH-BROWN, SILTY; WITH FINE TO MEDIUM SAND, MOIST
2583.00 - 2574.00	35.0 - 44.0	CLAY, TANNISH-BROWN, SILTY; WITH SOME FINE SAND, DRY
2574.00 - 2569.00	44.0 - 49.0	CLAY, BROWN, VERY SILTY; WITH SOME FINE SAND, HARD, DRY

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:SE SW NW SE SEC. 15, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-15DBCD
Basin:KEYA PAHA Latitude:43 15' 50"
Hydrologic Unit Code:10150006 Longitude:100 44' 15"
Land Owner: Ground Surface Elevation (ft.):2690 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/08/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:12 Total Drill Hole Depth (ft.):74.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2690.00 - 2686.00	0.0 - 4.0	SILT, BLACKISH-GRAY; MOIST
2686.00 - 2681.00	4.0 - 9.0	SAND, LIGHT-BROWN; SATURATED
2681.00 - 2674.00	9.0 - 16.0	SILT, BLACK; SATURATED
2674.00 - 2666.00	16.0 - 24.0	CLAY, BLACKISH-BROWN TO LIGHT-GRAY; SOME FINE SAND, SATURATED
2666.00 - 2646.00	24.0 - 44.0	CLAY, WHITISH-TAN; SATURATED
2646.00 - 2621.00	44.0 - 69.0	CLAY, BROWNISH-BUFF; MOIST
2621.00 - 2616.00	69.0 - 74.0	CLAY, GREEN; MOIST TO DRY

DEPTH TO WATER - 4 FEET.

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Location Information

Legal Location:SW SW NW NE SEC. 22, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-22ABCC
Basin:KEYA PAHA Latitude:43 15' 24"
Hydrologic Unit Code:10150006 Longitude:100 44' 22"
Land Owner: Ground Surface Elevation (ft.):2720 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/08/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:20 Total Drill Hole Depth (ft.):24.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2720.00 - 2711.00	0.0 - 9.0	SILT, BLACKISH-BROWN; DRY
2711.00 - 2696.00	9.0 - 24.0	SILT, ASH-WHITE; SOME HARD CONCRETIONS(?) (VOLCANIC ASH?)
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Location Information

Legal Location:NE NE NE SE SEC. 23, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-23DAAA
Basin:KEYA PAHA Latitude:43 15' 07"
Hydrologic Unit Code:10150006 Longitude:100 42' 35"
Land Owner: Ground Surface Elevation (ft.):2670 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/07/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:21 Total Drill Hole Depth (ft.):104.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2670.00 - 2669.00	0.0 - 1.0	TOPSOIL
2669.00 - 2666.00	1.0 - 4.0	SILT, LIGHT-BROWNISH-TAN; VERY DRY
2666.00 - 2651.00	4.0 - 19.0	CLAY, LIGHT-GREEN; MOIST
2651.00 - 2646.00	19.0 - 24.0	SAND, LIGHT-TANNISH-GREEN; SATURATED
2646.00 - 2601.00	24.0 - 69.0	CLAY, GREENISH-TAN; SATURATED
2601.00 - 2598.00	69.0 - 72.0	GRAVEL, VARIOUS COLORS; SATURATED
2598.00 - 2581.00	72.0 - 89.0	CLAY, LIGHT-WHITISH-GRAY; SATURATED
2581.00 - 2566.00	89.0 - 104.0	CLAY, REDDISH-TAN; MOIST

DEPTH TO WATER - 19 FEET.

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Location Information

Legal Location:SW NW SE SE SEC. 24, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-24DDBC
Basin:KEYA PAHA Latitude:43 14' 49"
Hydrologic Unit Code:10150006 Longitude:100 41' 40"
Land Owner: Ground Surface Elevation (ft.):2658 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/07/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:22 Total Drill Hole Depth (ft.):94.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2658.00 - 2657.00	0.0 - 1.0	TOPSOIL
2657.00 - 2654.00	1.0 - 4.0	CLAY, BLACKISH-BROWN; SOME SILT, MOIST
2654.00 - 2649.00	4.0 - 9.0	SILT, LIGHT-BROWNISH-TAN; WET
2649.00 - 2643.00	9.0 - 15.0	CLAY, GRAYISH-BROWN; ALMOST SATURATED
2643.00 - 2619.00	15.0 - 39.0	CLAY, BROWNISH-TAN; SATURATED
2619.00 - 2586.00	39.0 - 72.0	CLAY, TANNISH-BROWN; SATURATED
2586.00 - 2574.00	72.0 - 84.0	CLAY; WITH THIN GRAVEL STRINGERS AT 72, 74, 75, 76 AND 79 FEET, HIT ROCK AT 83 FEET
2574.00 - 2564.00	84.0 - 94.0	CLAY, BROWNISH-TAN; HARD, DRY

DEPTH TO WATER - 15 FEET.

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Location Information

Legal Location: NW SW NE NE SEC. 25, T. 038 N., R. 29 W.
County: TODD Location: 038N-29W-25AACB
Basin: KEYA PAHA Latitude: 43 14' 34"
Hydrologic Unit Code: 10150006 Longitude: 100 41' 40"
Land Owner: Ground Surface Elevation (ft.): 2680 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 06/27/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 38 Total Drill Hole Depth (ft.): 109.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2680.00 - 2679.00	0.0 - 1.0	TOPSOIL
2679.00 - 2673.00	1.0 - 7.0	SILT, BROWNISH-TAN, FINE; A LITTLE FINE SAND, DRY
2673.00 - 2666.00	7.0 - 14.0	SILT, GRAYISH-BROWN, SANDY; WITH CLAY
2666.00 - 2661.00	14.0 - 19.0	SAND, TANNISH-BROWN; MOIST
2661.00 - 2646.00	19.0 - 34.0	SAND, BUFF TO TANNISH-BROWN, FINE TO MEDIUM; SATURATED
2646.00 - 2636.00	34.0 - 44.0	SAND, BUFF TO TANNISH-BROWN, COARSE; SATURATED
2636.00 - 2590.00	44.0 - 90.0	CLAY, TANNISH-BROWN; SATURATED
2590.00 - 2586.00	90.0 - 94.0	GRAVEL; SATURATED
2586.00 - 2571.00	94.0 - 109.0	CLAY, GREENISH- TO GRAYISH-BROWN; WET

DEPTH TO WATER - 19 FEET.

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Location Information

Legal Location:SW SW SE NE SEC. 25, T. 038 N., R. 29 W.	
County:TODD	Location:038N-29W-25ADCC
Basin:KEYA PAHA	Latitude:43 14' 15"
Hydrologic Unit Code:10150006	Longitude:100 41' 40"
Land Owner:	Ground Surface Elevation (ft.):2700 T

Project Information

Project:MISSION WATER PROJECT	Geologist:A. BARARI
Drill Date:06/28/1966	Geologist's Log:
Company:SDGS	Driller:BRINKLEY/GANN
Drilling Method:AUGER	Driller's Log:X
Test Hole Number:39	Total Drill Hole Depth (ft.):124.0
Samples:	

Geophysical Information

Spontaneous Potential:	Single Point Resistivity:
Natural Gamma:	Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2700.00 - 2691.00	0.0 - 9.0	SILT, BROWNISH-TAN; DRY
2691.00 - 2686.00	9.0 - 14.0	SILT, BUFF TO BROWNISH-TAN
2686.00 - 2681.00	14.0 - 19.0	SILT, DARK-BROWN; WETTER
2681.00 - 2675.00	19.0 - 25.0	CLAY, GRAYISH- TO TANNISH-BROWN, SILTY; ALMOST SATURATED, GRAVEL STRINGER AT 21 FEET
2675.00 - 2671.00	25.0 - 29.0	SAND, BUFF TO TANNISH-BROWN, SILTY; SATURATED
2671.00 - 2666.00	29.0 - 34.0	SAND, GRAYISH- TO TANNISH-BROWN, FINE TO MEDIUM TO COARSE; SOME FINE GRAVEL, SOME SILT, SATURATED
2666.00 - 2639.00	34.0 - 61.0	SAND, BROWNISH-TAN, FINE TO MEDIUM; SATURATED
2639.00 - 2594.00	61.0 - 106.0	CLAY, GREENISH-BROWN; SATURATED
2594.00 - 2592.00	106.0 - 108.0	GRAVEL
2592.00 - 2576.00	108.0 - 124.0	CLAY, BROWNISH-TAN; HARD, DRY

DEPTH TO WATER - 19 FEET.

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Location Information

Legal Location:NE NE NE NE SEC. 26, T. 038 N., R. 29 W.
County:TODD Location:038N-29W-26AAAA
Basin:KEYA PAHA Latitude:43 14' 41"
Hydrologic Unit Code:10150006 Longitude:100 42' 35"
Land Owner: Ground Surface Elevation (ft.):2690 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:06/28/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:37 Total Drill Hole Depth (ft.):24.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2690.00 - 2689.00	0.0 - 1.0	TOPSOIL
2689.00 - 2676.00	1.0 - 14.0	CLAY, BROWN, SILTY; DRY
2676.00 - 2671.00	14.0 - 19.0	CLAY, WHITISH-TAN, SILTY; DRY
2671.00 - 2666.00	19.0 - 24.0	SAND, LIGHT-BUFFISH-TAN, SILTY; SOME FINE GRAVEL, HARD, DRY

DEPTH TO WATER - DRY.

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Location Information

Legal Location:SE SW NW SE SEC. 18, T. 038 N., R. 30 W.
County:TODD Location:038N-30W-18DBCD
Basin:WHITE Latitude:43 15' 28"
Hydrologic Unit Code:10140203 Longitude:100 55' 03"
Land Owner: Ground Surface Elevation (ft.):2480 T

Project Information

Project:WATER RIGHTS Geologist:D. DRISCOLL
Drill Date:08/08/1957 Geologist's Log:
Company:GRIMSHAW DRILLING Driller:J. HUTMACHER
Drilling Method: Driller's Log:X
Test Hole Number: Total Drill Hole Depth (ft.):39.0
Samples:

Well Information

SDGS Well Name: Aquifer:ALLUVIUM
Water Rights Well:TD-57D Management Unit:
Other Well Name: Casing Top Elevation:
Casing Type: Casing Diameter (in.):
Screen Type: Screen Length (ft.):
Total Casing and Screen (ft.): Casing Stick-up (ft.):
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

ORIGINAL OBSERVATION WELL NAME W-2. WELL DESTROYED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2480.00 - 2450.00	0.0 - 30.0	TOPSOIL; FINE SAND
2450.00 - 2447.00	30.0 - 33.0	SAND, FINE; HARD-PACKED
2447.00 - 2441.00	33.0 - 39.0	SAND; WITH CLAY MIXED IN

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Location Information

Legal Location:NE NW SW NW SEC. 19, T. 038 N., R. 30 W.
County:TODD Location:038N-30W-19BCBA
Basin:WHITE Latitude:43 15' 13"
Hydrologic Unit Code:10140203 Longitude:100 55' 39"
Land Owner: Ground Surface Elevation (ft.):2662 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/22/1995 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-95-34 Total Drill Hole Depth (ft.):284.0
Samples:

Well Information

SDGS Well Name: R2-95-34 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2664.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):286.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2662.00 - 2595.00	0.0 - 67.0	SAND, PALE-YELLOWISH-BROWN (10YR 6/2), MEDIUM-TO COARSE-GRAINED, WELL-ROUNDED, SILTY; NONCALCAREOUS, COMPOSED OF QUARTZ WITH SOME FELDSPAR AND LITHIC GRAINS; MOSTLY POLISHED WITH SOME FROSTED GRAINS; SOME WHITE IRREGULAR SHAPED CONCRETIONS AND RHIZOLITHS
2595.00 - 2542.00	67.0 - 120.0	SILTSTONE, LIGHT-BROWN (5YR 6/4), CLAYEY; NONCALCAREOUS TO POORLY CALCAREOUS (ROSEBUD FORMATION)
2542.00 - 2466.00	120.0 - 196.0	SILTSTONE, GRAYISH-ORANGE-PINK (5YR 7/2), CLAYEY, VERY CLAYEY FROM 182 TO 198 FEET, SANDY FROM 148 TO 154 FEET (ROSEBUD FORMATION)
2466.00 - 2398.00	196.0 - 264.0	SILTSTONE, LIGHT-BROWN (5YR 6/4), CLAYEY; NONCALCAREOUS TO VERY POORLY CALCAREOUS; SOME VOLCANIC ASH(?) FROM 248 TO 252 FEET AS DETERMINED FROM THE HIGH GAMMA VALUES FOR THIS INTERVAL
2398.00 - 2378.00	264.0 - 284.0	SILTSTONE, GRAYISH-ORANGE-PINK (5YR 7/2), VERY

SANDY; NONCALCAREOUS (ROSEBUD FORMATION)

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Location Information

Legal Location: NE NW NE SE SEC. 14, T. 038 N., R. 31 W.
County: TODD Location: 038N-31W-14DABA
Basin: WHITE Latitude: 43 15' 53"
Hydrologic Unit Code: 10140203 Longitude: 100 56' 34"
Land Owner: Ground Surface Elevation (ft.): 2581 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 07/26/1995 Geologist's Log:
Company: SDGS Driller: G. JENEN
Drilling Method: ROTARY Driller's Log: X
Test Hole Number: R2-95-24 Total Drill Hole Depth (ft.): 582.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: X Extra: X

INDUCTION LOG WAS RUN TO 415 FEET FOR THIS TEST HOLE; NATURAL GAMMA, CONDUCTIVITY, AND RESISTIVITY. NO GEOLOGISTS LOG IS AVAILABLE FOR THIS TEST HOLE. DRILLERS LOG ONLY.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2581.00 - 2579.00	0.0 - 2.0	TOPSOIL
2579.00 - 2491.00	2.0 - 90.0	SILTSTONE, BROWN
2491.00 - 2384.00	90.0 - 197.0	SILT AND SILTSTONE, TAN TO BROWN
2384.00 - 2347.00	197.0 - 234.0	CLAY, TAN, SOME GREEN
2347.00 - 2234.00	234.0 - 347.0	SILT, LIGHT-GRAY TO TAN-BROWN AND GREEN
2234.00 - 2091.00	347.0 - 490.0	SILT, GRAY
2091.00 - 2041.00	490.0 - 540.0	SILTSTONE, TAN AND GREEN
2041.00 - 2025.00	540.0 - 556.0	CLAY, YELLOWISH-BROWN AND PURPLE
2025.00 - 1999.00	556.0 - 582.0	SHALE, BLACK (PIERRE SHALE?)

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Location Information

Legal Location: NW NE NE NE SEC. 23, T. 038 N., R. 31 W.
County: TODD Location: 038N-31W-23AAAB
Basin: WHITE Latitude: 43 15' 26"
Hydrologic Unit Code: 10140203 Longitude: 100 56' 32"
Land Owner: Ground Surface Elevation (ft.): 2438 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/23/1995 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-95-35 Total Drill Hole Depth (ft.): 62.0
Samples:

Well Information

SDGS Well Name: R2-95-35 Aquifer: ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2440.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., 0.010 IN. SLOT Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 63.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2438.00 - 2437.00	0.0 - 1.0	TOPSOIL, DARK-BROWN
2437.00 - 2428.00	1.0 - 10.0	SAND, GRAYISH-ORANGE-PINK (5YR 7/2), MEDIUM- TO FINE-GRAINED, SUBROUNDED TO ROUNDED; PRIMARILY QUARTZ WITH SOME LITHIC FRAGMENTS (ALLUVIUM)
2428.00 - 2403.00	10.0 - 35.0	SAND, PALE-YELLOWISH-BROWN (10YR 6/2), MEDIUM- TO COARSE-GRAINED, SUBROUNDED TO ROUNDED; PRIMARILY QUARTZ WITH SOME LITHIC FRAGMENTS; SOME WHITE CALCAREOUS SILTSTONE PEBBLES; ABUNDANT LIGHT-BROWN SILTSTONE NODULES AND PEBBLES FROM 30 TO 35 FEET (ALLUVIUM)
2403.00 - 2376.00	35.0 - 62.0	SILTSTONE, LIGHT-BROWN (5YR 6/5), CLAYEY, SANDY FROM 50 TO 60 FEET; SLIGHTLY CALCAREOUS; SOME WHITE ASH CUTTINGS FROM 30 TO 40 FEET (ROSEBUD FORMATION)

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Location Information

Legal Location: NW NE NE NE SEC. 23, T. 038 N., R. 31 W.
County: TODD Location: 038N-31W-23AAAB 1
Basin: WHITE Latitude: 43 15' 26"
Hydrologic Unit Code: 10140203 Longitude: 100 56' 32"
Land Owner: Ground Surface Elevation (ft.): 2438 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/23/1995 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-95-36 Total Drill Hole Depth (ft.): 35.0
Samples:

Well Information

SDGS Well Name: R2-95-36 Aquifer: ALLUVIUM
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2440.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., 0.010 IN. SLOT Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 37.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2438.00 - 2437.00	0.0 - 1.0	TOPSOIL, DARK-BROWN
2437.00 - 2428.00	1.0 - 10.0	SAND, GRAYISH-ORANGE-PINK (5YR 7/2), MEDIUM- TO FINE-GRAINED, SUBROUNDED TO ROUNDED; PRIMARILY QUARTZ WITH SOME LITHIC FRAGMENTS (ALLUVIUM)
2428.00 - 2403.00	10.0 - 35.0	SAND, PALE-YELLOWISH-BROWN (10YR 6/2), MEDIUM- TO COARSE-GRAINED, SUBROUNDED TO ROUNDED; PRIMARILY QUARTZ WITH SOME LITHIC FRAGMENTS; SOME WHITE CALCAROUS SILTSTONE PEBBLES; ABUNDANT LIGHT-BROWN SILTSTONE NODULES AND PEBBLES FROM 30 TO 35 FEET (ALLUVIUM)

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Location Information

Legal Location:SE SW NE NE SEC. 23, T. 038 N., R. 31 W.
County:TODD Location:038N-31W-23AACD
Basin:WHITE Latitude:43 15' 05"
Hydrologic Unit Code:10140203 Longitude:100 56' 58"
Land Owner: Ground Surface Elevation (ft.):2455 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/23/1995 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-95-37 Total Drill Hole Depth (ft.):71.0
Samples:

Well Information

SDGS Well Name: R2-95-37 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2457.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):74.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2455.00 - 2437.00	0.0 - 18.0	SAND, YELLOWISH-GRAY (5YR 7/2), MEDIUM- TO COARSE-GRAINED, ROUNDED TO SUBROUNDED; PRIMARILY QUARTZ, SOME FELDSPAR, FEW LITHIC FRAGMENTS; SOME SILTSTONE PEBBLES (ALLUVIUM)
2437.00 - 2396.00	18.0 - 59.0	SILTSTONE, LIGHT-BROWN (5YR 6/5) AND GRAYISH-ORANGE-PINK (5YR 7/2) FROM 40 TO 50 FEET AND MODERATE-ORANGE-PINK (5YR 8/4) FROM 50 TO 59 FEET, CLAYEY, SLIGHTLY SANDY; NONCALCAREOUS TO SLIGHTLY CALCAREOUS; SOME WHITE RHIZOLITHS (ROSEBUD FORMATION)
2396.00 - 2384.00	59.0 - 71.0	SANDSTONE, GRAYISH-ORANGE (10YR 7/4), VERY FINE-GRAINED, POORLY CEMENTED; CALCAREOUS; SOME WELL CEMENTED CALCAREOUS SILTSTONE NODULES (ROSEBUD FORMATION)

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Location Information

Legal Location: NW SE NE NW SEC. 24, T. 038 N., R. 31 W.
County: TODD Location: 038N-31W-24BADB
Basin: WHITE Latitude: 43 15' 17"
Hydrologic Unit Code: 10140203 Longitude: 100 56' 23"
Land Owner: Ground Surface Elevation (ft.): 2560 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 07/25/1995 Geologist's Log:
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log: X
Test Hole Number: R2-95-22 Total Drill Hole Depth (ft.): 262.0
Samples:

Well Information

SDGS Well Name: R2-95-22 Aquifer: ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2562.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., 0.010 IN. SLOT Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 264.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

NO GEOLOGISTS LOG IS AVAILABLE FOR THIS TEST HOLE. DRILLERS LOG ONLY.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2560.00 - 2558.00	0.0 - 2.0	TOPSOIL
2558.00 - 2340.00	2.0 - 220.0	SILTSTONE, BROWN; SOME GREEN SILTSTONE
2340.00 - 2316.00	220.0 - 244.0	SAND, FINE-GRAINED
2316.00 - 2298.00	244.0 - 262.0	SILTSTONE, BROWN

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Location Information

Legal Location:SE NE SE NW SEC. 24, T. 038 N., R. 31 W.
County:TODD Location:038N-31W-24BDAD
Basin:WHITE Latitude:43 15' 08"
Hydrologic Unit Code:10140203 Longitude:100 56' 21"
Land Owner: Ground Surface Elevation (ft.):2600 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/25/1995 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-95-23 Total Drill Hole Depth (ft.):282.0
Samples:

Well Information

SDGS Well Name: R2-95-23 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2602.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC,MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):284.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2600.00 - 2561.00	0.0 - 39.0	SILTSTONE, GRAYISH-ORANGE-PINK (5YR 7/2) TO LIGHT-BROWN (5YR 6/4), SANDY; NONCALCAREOUS; ASH LAYER(?) AT 33 TO 36 FEET AS INDICATED BY HIGH GAMMA VALUES FOR THIS INTERAL (ROSEBUD FORMATION)
2561.00 - 2501.00	39.0 - 99.0	SILTSTONE, LIGHT-BROWN (5YR 5/6), CLAYEY; NONCALCAREOUS
2501.00 - 2436.00	99.0 - 164.0	SILTSTONE, GRAYISH-ORANGE-PINK, SANDY; CALCAREOUS; VOLCANIC ASH(?) AT 118 TO 134 FEET AS INDICATED BY HIGH GAMMA VALUES; SOME HARD, WELL CEMENTED BEDS (ROSEBUD FORMATION)
2436.00 - 2396.00	164.0 - 204.0	SILTSTONE, LIGHT-BROWN (5YR 6/4), CLAYEY, SLIGHTLY SANDY; POORLY CALCAREOUS WITH SOME VERY CALCAREOUS BEDS (ROSEBUD FORMATION)
2396.00 - 2369.00	204.0 - 231.0	SILTSTONE, LIGHT-BROWN (5YR 6/4), SANDY; SLIGHTLY CALCAREOUS WITH SOME CALCAREOUS BEDS (ROSEBUD FORMATION)

2369.00 - 2355.00	231.0 - 245.0	SILTSTONE, LIGHT-BROWN (5YR 6/4), CLAYEY; NONCALCAREOUS (ROSEBUD FORMATION)
2355.00 - 2338.00	245.0 - 262.0	SILTSTONE, LIGHT-BROWN (5YR 6/4), VERY SANDY; NONCALCAREOUS (ROSEBUD FORMATION)
2338.00 - 2318.00	262.0 - 282.0	SILTSTONE, GRAYISH-ORANGE-PINK (5YR 7/2), CLAYEY; NONCALCAREOUS TO POORLY CALCAREOUS; SOME FISSILE BEDS; SOME VERY SANDY BEDS FROM 270 TO 276 FEET (ROSEBUD FORMATION)

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Location Information

Legal Location:SW SW NE NE SEC. 09, T. 038 N., R. 32 W.
County:TODD Location:038N-32W-09AACC
Basin:WHITE Latitude:43 16' 54"
Hydrologic Unit Code:10140203 Longitude:100 06' 15"
Land Owner: Ground Surface Elevation (ft.):2800 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:07/24/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-04 Total Drill Hole Depth (ft.):326.0
Samples:

Well Information

SDGS Well Name: R2-93-04 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2802.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):327.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

NO GEOLOGIST LOG IS AVAILABLE FOR THIS TEST HOLE. DRILLERS LOG ONLY. LITHOLOGY IS FROM TEST-HOLE R2-92-48 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2800.00 - 2786.00	0.0 - 14.0	SAND, GRAYISH-ORANGE, FINE, WELL-SORTED, SUBROUNDED TO SUBANGULAR; CLEAN, SLIGHTLY CALCAREOUS, FEW ORANGE-PINK SILT AND SILTY SAND LENSES BELOW 10 FEET
2786.00 - 2757.00	14.0 - 43.0	SILT, LIGHT-BROWN, SANDY; SLIGHTLY CALCAREOUS, MASSIVE(?), NONCALCAREOUS BELOW 30 FEET
2757.00 - 2735.00	43.0 - 65.0	SAND, ORANGE-PINK, VERY FINE, SUBROUNDED TO SUBANGULAR; QUARTZOSE WITH MINOR FELDSPAR CONTENT, SLIGHTLY CALCAREOUS
2735.00 - 2727.00	65.0 - 73.0	SILTSTONE, LIGHT-BROWN, SLIGHTLY SANDY; NONCALCAREOUS, MASSIVE(?) (ARIKAREE GROUP)
2727.00 - 2658.00	73.0 - 142.0	SILTSTONE, LIGHT-YELLOWISH-BROWN, SLIGHTLY SANDY, SLIGHTLY CLAYEY; NONCALCAREOUS, INTERBEDDED POORLY AND WELL-CEMENTED BEDS; SOME THIN, CLAYEY ASH(?) BEDS; GRADES TO

PALE-GRAYISH-ORANGE BELOW 110 FEET

2658.00 - 2596.00	142.0 - 204.0	SILTSTONE, DARK-YELLOWISH-ORANGE, SLIGHTLY SANDY, SLIGHTLY SILTY; NONCALCAREOUS TO VERY SLIGHTLY CALCAREOUS, MASSIVE, GRADES TO A PALE-GRAYISH-ORANGE BELOW 160 FEET
2596.00 - 2530.00	204.0 - 270.0	SILTSTONE, DARK-YELLOWISH-ORANGE, SANDY TO SLIGHTLY SANDY, CLAYEY; NONCALCAREOUS, MASSIVE, GRADES TO GRAYISH-ORANGE BELOW 250 FEET
2530.00 - 2493.00	270.0 - 307.0	SILTSTONE, MOTTLED YELLOWISH-GRAY AND LIGHT-OLIVE-GRAY; SLIGHTLY CALCAREOUS, MORE CLAYEY AT 290 TO 300 FEET, VERY SANDY AT 300 TO 307 FEET
2493.00 - 2474.00	307.0 - 326.0	SILTSTONE, GRAYISH-ORANGE, SANDY; CALCAREOUS, MASSIVE, CLAYEY AT 320 TO 326 FEET, VERY WELL-CEMENTED BED AT 312 TO 313 FEET

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Location Information

Legal Location:SW SW NE NE SEC. 09, T. 038 N., R. 32 W.
County:TODD Location:038N-32W-09AACC 1
Basin:WHITE Latitude:43 16' 54"
Hydrologic Unit Code:10140203 Longitude:100 06' 15"
Land Owner: Ground Surface Elevation (ft.):2800 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:07/24/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-05 Total Drill Hole Depth (ft.):62.0
Samples:

Well Information

SDGS Well Name: R2-93-05 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2802.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):5.0
Total Casing and Screen (ft.):62.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

NO GEOLOGISTS LOG IS AVAILABLE FOR THIS TEST HOLE. DRILLERS LOG ONLY. LITHOLOGY IS FROM TEST-HLE R2-92-48 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2800.00 - 2786.00	0.0 - 14.0	SAND, GRAYISH-ORANGE, FINE, WELL-SORTED, SUBROUNDED TO SUBANGULAR; CLEAN, SLIGHTLY CALCAREOUS, FEW ORANGE-PINK SILT AND SILTY SAND LENSES BELOW 10 FEET
2786.00 - 2757.00	14.0 - 43.0	SILT, LIGHT-BROWN, SANDY; SLIGHTLY CALCAREOUS, MASSIVE(?), NONCALCAREOUS BELOW 30 FEET
2757.00 - 2738.00	43.0 - 62.0	SAND, ORANGE-PINK, VERY FINE, SUBROUNDED TO SUBANGULAR; QUARTZOSE WITH MINOR FELDSPAR CONTENT, SLIGHTLY CALCAREOUS

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Location Information

Legal Location:NE SW SW NE SEC. 09, T. 038 N., R. 32 W.
County:TODD Location:038N-32W-09ACCA
Basin:WHITE Latitude:43 16' 55"
Hydrologic Unit Code:10140203 Longitude:101 06' 24"
Land Owner: Ground Surface Elevation (ft.):2800 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:09/23/1992 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-92-48 Total Drill Hole Depth (ft.):807.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

HOLE PLUGGED WITH 32 SACKS OF ECONOPLUG GROUT FROM TOTAL DEPTH TO SURFACE; SETTLED AND FILLED WITH NEAT CEMENT GROUT FROM 8 TO 3 FEET; BACKFILLED WITH NATIVE MATERIALS FROM 3 FEET TO GROUND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2800.00 - 2786.00	0.0 - 14.0	SAND, GRAYISH-ORANGE, FINE, WELL-SORTED, SUBROUNDED TO SUBANGULAR; CLEAN, SLIGHTLY CALCAREOUS, FEW ORANGE-PINK SILT AND SILTY SAND LENSES BELOW 10 FEET
2786.00 - 2757.00	14.0 - 43.0	SILT, LIGHT-BROWN, SANDY; SLIGHTLY CALCAREOUS, MASSIVE(?), NONCALCAREOUS BELOW 30 FEET
2757.00 - 2735.00	43.0 - 65.0	SAND, ORANGE-PINK, VERY FINE, SUBROUNDED TO SUBANGULAR; QUARTZOSE WITH MINOR FELDSPAR CONTENT, SLIGHTLY CALCAREOUS
2735.00 - 2727.00	65.0 - 73.0	SILTSTONE, LIGHT-BROWN, SLIGHTLY SANDY; NONCALCAREOUS, MASSIVE(?) (ARIKAREE GROUP)
2727.00 - 2658.00	73.0 - 142.0	SILTSTONE, LIGHT-YELLOWISH-BROWN, SLIGHTLY SANDY, SLIGHTLY CLAYEY; NON- CALCAREOUS, INTERBEDDED POORLY AND WELL-CEMENTED BEDS; SOME THIN, CLAYEY ASH(?) BEDS; GRADES TO PALE-GRAYISH- ORANGE BELOW 110 FEET
2658.00 - 2596.00	142.0 - 204.0	SILTSTONE, DARK-YELLOWISH-ORANGE, SLIGHTLY SANDY, SLIGHTLY SILTY; NON- CALCAREOUS TO VERY SLIGHTLY CALCAREOUS, MASSIVE, GRADES TO A PALE-GRAYISH- ORANGE BELOW 160 FEET
2596.00 - 2530.00	204.0 - 270.0	SILTSTONE, DARK-YELLOWISH-ORANGE, SANDY TO SLIGHTLY SANDY, CLAYEY; NON- CALCAREOUS, MASSIVE, GRADES TO GRAYISH-ORANGE BELOW 250

FEET

2530.00 - 2493.00	270.0 - 307.0	SILTSTONE, MOTTLED YELLOWISH-GRAY AND LIGHT-OLIVE-GRAY; SLIGHTLY CALCAREOUS, MORE CLAYEY AT 290 TO 300 FEET, VERY SANDY AT 300 TO 307 FEET
2493.00 - 2474.00	307.0 - 326.0	SILTSTONE, GRAYISH-ORANGE, SANDY; CALCAREOUS, MASSIVE, CLAYEY AT 320 TO 326 FEET, VERY WELL-CEMENTED BED AT 312 TO 313 FEET
2474.00 - 2460.00	326.0 - 340.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SLIGHTLY SANDY; CALCAREOUS, MASSIVE (BRULE FORMATION?)
2460.00 - 2440.00	340.0 - 360.0	SILTSTONE, GRAYISH-ORANGE, SANDY; MASSIVE, CALCAREOUS, CLAYEY AT 350 TO 360 FEET
2440.00 - 2388.00	360.0 - 412.0	SILTSTONE, DARK-YELLOWISH-ORANGE, CLAYEY; SLIGHTLY SANDY 360 TO 380 FT, SLIGHTLY CALCAREOUS ABOVE 380 FT, MASSIVE, SOME THIN OLIVE-BLACK NONCALCAREOUS SILT- STONE BEDS AT 375 AND 395 FT, GRADES TO A YELLOWISH-GRAY TO LIGHT-OLIVE-GRAY BY 390 FT, SAND LENS AT 405 AND 412 FT
2388.00 - 2348.00	412.0 - 452.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SLIGHTLY SANDY; NONCALCAREOUS, MASSIVE, GRADES TO LIGHT-OLIVE-GRAY BELOW 420 FEET
2348.00 - 2322.00	452.0 - 478.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SLIGHTLY SANDY TO SANDY; CALCAREOUS, MASSIVE, GRADES TO LIGHT-OLIVE-GRAY BELOW 460 FEET
2322.00 - 2238.00	478.0 - 562.0	SILTSTONE, LIGHT-BROWN, VERY CLAYEY; CALCAREOUS, POORLY FISSILE, GRADES TO YELLOWISH-GRAY BY 500 FEET (CHADRON FORMATION?)
2238.00 - 2108.00	562.0 - 692.0	CLAYSTONE, YELLOWISH-BROWN, SILTY; HARD, CALCAREOUS, POORLY FISSILE, GRADES TO LIGHT-OLIVE-GRAY BY 670 FEET, SEVERAL THIN ASH BEDS
2108.00 - 2028.00	692.0 - 772.0	CLAYSTONE, PALE-YELLOWISH-ORANGE, SILTY; POORLY TO NON-FISSILE, CALCAREOUS, MOTTLED WITH PALE-OLIVE BY 700 FEET, PRIMARILY PALE-OLIVE BY 730 FEET, VERY SILTY AT 730 TO 770 FEET
2028.00 - 1993.00	772.0 - 807.0	SHALE, OLIVE-BLACK; HARD, FISSILE, NON-CALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location: NW NW SE NE SEC. 21, T. 038 N., R. 32 W.
County: TODD Location: 038N-32W-21ADBB
Basin: WHITE Latitude: 43 15' 14"
Hydrologic Unit Code: 10140203 Longitude: 101 06' 09"
Land Owner: Ground Surface Elevation (ft.): 2850 T

Project Information

Project: USGS HIGH PLAINS PROJECT Geologist:
Drill Date: 10/17/1979 Geologist's Log: X
Company: MIDLAND DRILLING Driller:
Drilling Method: ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.): 79.0
Samples:

Well Information

SDGS Well Name: Aquifer: ARIKAREE
Water Rights Well: TD-79C Management Unit:
Other Well Name: TD 79-3 Casing Top Elevation:
Casing Type: PVC Casing Diameter (in.): 1.5
Screen Type: PVC, HM. Screen Length (ft.): 20.0
Total Casing and Screen (ft.): 58.3 Casing Stick-up (ft.):
Well Maintenance Date: 06/24/1984

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

CASING IS SLOTTED FROM 20 TO 40 FEET. WELL GRAVEL PACKED, STAKED AND WIRE SECURED, BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST SANDS IN THE ARIKAREE. BOTTOM SECTION OF CASING IS CAPPED. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148. WELL DESTROYED.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2850.00 - 2831.00	0.0 - 19.0	SILT AND SAND, LIGHT-COLORED; DARK MINERAL GRAINS.
2831.00 - 2801.00	19.0 - 49.0	SANDSTONE, FINE-GRAINED; RED CLAY, WHITISH SANDSTONE, SOME LIMESTONE
2801.00 - 2771.00	49.0 - 79.0	CLAY, REDDISH-BROWN; SOME FINE-GRAINED SANDSTONE

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Location Information

Legal Location: NW NW NE NW SEC. 36, T. 039 N., R. 26 W.
County: TODD Location: 039N-26W-36BABB 1
Basin: WHITE Latitude: 43 19' 02"
Hydrologic Unit Code: 10140204 Longitude: 100 20' 49"
Land Owner: Ground Surface Elevation (ft.): 2380 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
Drill Date: 08/03/1993 Geologist's Log: X
Company: SDGS Driller: D. IVERSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-47 Total Drill Hole Depth (ft.): 153.0
Samples:

Well Information

SDGS Well Name: R20-93-47 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2382.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, SLOT SIZE 0.010 IN. Screen Length (ft.): 15.0
Total Casing and Screen (ft.): 155.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

FILTER PACK COMPRISED OF 450 LBS OF 0.65 - 0.75 MM QUARTZ SAND, PLACED FROM 153 FEET TO 135 FEET. HIGH SOLIDS BENTONITE PLACED FROM 135 FEET TO SURFACE. AFTER SETTLEMENT, OPEN HOLE WAS CEMENT GROUTED TO SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2380.00 - 2363.00	0.0 - 17.0	SAND, LIGHT-BROWN, VERY FINE, VERY SILTY; POORLY TO WELL-CEMENTED, POORLY TO NONCALCAREOUS (ROSEBUD FORMATION?)
2363.00 - 2316.00	17.0 - 64.0	SILTSTONE, LIGHT-BROWN, CLAYEY; SOME SANDY LAYERS, BLOCKY TO TABULAR CUTTINGS, SLIGHTLY CALCAREOUS, SOME WHITE VERY CALCAREOUS CHALKY BEDS (ROSEBUD FORMATION?)
2316.00 - 2284.00	64.0 - 96.0	SILTSTONE, GRAYISH-GREEN, CLAYEY FROM 64 FEET TO 72 FEET, SANDY AND CALCAREOUS FROM 72 FEET TO 96 FEET; ALTERNATING HARD AND SOFT BEDS (BRULE FORMATION?)
2284.00 - 2251.00	96.0 - 129.0	SILTSTONE, YELLOWISH-GRAY, SANDY, VERY CLAYEY; POORLY FISSILE TO FISSILE, NON- CALCAREOUS TO VERY POORLY CALCAREOUS, SANDY FROM 117 FEET TO 125 FEET (CHADRON FORMATION?)

2251.00 - 2227.00

129.0 - 153.0

SHALE, DARK-YELLOWISH-ORANGE TO GRAYISH- BROWN;
FISSILE, POORLY CALCAREOUS (WEATHERED PIERRE
SHALE)

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Location Information

Legal Location:NE SE SE NE SEC. 02, T. 039 N., R. 27 W.
County:TODD Location:039N-27W-02ADDA
Basin:WHITE Latitude:43 23' 08"
Hydrologic Unit Code:10140204 Longitude:100 28' 18"
Land Owner: Ground Surface Elevation (ft.):2549 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/10/1995 Geologist's Log:
Company:SDGS Driller:M. THOMPSON
Drilling Method:ROTARY Driller's Log:X
Test Hole Number:R2-95-28 Total Drill Hole Depth (ft.):362.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

DRILLERS LOG ONLY.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2549.00 - 2548.00	0.0 - 1.0	TOPSOIL, SILTY
2548.00 - 2449.00	1.0 - 100.0	SILTSTONE AND SANDSTONE (ARIKAREE FORMATION)
2449.00 - 2387.00	100.0 - 162.0	SILTSTONE, LIGHT-GRAY TO GREENISH-GRAY, SANDY, CLAYEY (BRULE FORMATION?)
2387.00 - 2207.00	162.0 - 342.0	SILTSTONE, GREEN TO GREENISH-GRAY; SOME HARD SPOTS (CHADRON FORMATION?)
2207.00 - 2198.00	342.0 - 351.0	SAND(?) (CHAMBERLAIN PASS FORMATION?)
2198.00 - 2187.00	351.0 - 362.0	SHALE, BLACK; GREASY (PIERRE SHALE)

FORMATION TOPS WERE PICKED FROM GEOPHYSICAL LOG BY R.H. HAMMOND.

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Location Information

Legal Location:SE SE SE SW SEC. 20, T. 039 N., R. 27 W.
County:TODD Location:039N-27W-20CDDD
Basin:KEYA PAHA Latitude:43 19' 57"
Hydrologic Unit Code:10150006 Longitude:100 32' 26"
Land Owner: Ground Surface Elevation (ft.):2710 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/06/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:47A Total Drill Hole Depth (ft.):29.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41 (NOT USED).

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2710.00 - 2709.00	0.0 - 1.0	TOPSOIL
2709.00 - 2706.00	1.0 - 4.0	SILT, BROWNISH-BLACK; WITH FINE SAND, DRY
2706.00 - 2699.00	4.0 - 11.0	SAND, TANNISH-BROWN, SILTY; MOIST
2699.00 - 2696.00	11.0 - 14.0	CLAY, LIGHT-OLIVE-GREEN, SILTY; MOIST
2696.00 - 2691.00	14.0 - 19.0	CLAY, WHITISH-GRAY; MOIST TO DRY
2691.00 - 2681.00	19.0 - 29.0	CLAY, LIGHT-PINKISH-TAN; HARD, DRY

DEPTH TO WATER - DRY.

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Location Information

Legal Location: NW NE NE NE SEC. 35, T. 039 N., R. 27 W.
County: TODD Location: 039N-27W-35AAAB 1
Basin: WHITE Latitude: 43 19' 03"
Hydrologic Unit Code: 10140204 Longitude: 100 28' 20"
Land Owner: Ground Surface Elevation (ft.): 2600 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
Drill Date: 08/02/1993 Geologist's Log: X
Company: SDGS Driller: D. IVERSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R20-93-46 Total Drill Hole Depth (ft.): 92.0
Samples:

Well Information

SDGS Well Name: R20-93-46 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2602.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, SLOT SIZE 0.010 IN. Screen Length (ft.): 15.0
Total Casing and Screen (ft.): 89.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

10 FEET OF BLANK CASING PLACED BELOW SCREEN AT 87 FEET TO 77 FEET. FILTER PACK COMPRISED OF 800 LBS OF 0.65 - 0.75 MM QUARTZ SAND PLACED FROM 92 FEET TO 53 FEET. REMAINDER OF HOLE FILLED WITH HIGH SOLIDS BENTONITE GROUT. AFTER SETTLEMENT TIME UPPER FEW FEET OF HOLE PLUGGED WITH CEMENT GROUT.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2600.00 - 2577.00	0.0 - 23.0	SAND, DUSKY-YELLOW-BROWN TO GRAYISH- YELLOW, FINE, SUBANGULAR TO SUB- ROUNDED; HIGHLY QUARTZOSE
2577.00 - 2562.00	23.0 - 38.0	CLAY, LIGHT-OLIVE, VERY SILTY, SANDY; CALCAREOUS
2562.00 - 2544.00	38.0 - 56.0	SILTSTONE AND SANDSTONE, LIGHT-OLIVE TO TAN, FINE- TO MEDIUM-GRAINED SANDSTONE; SOME HARD WHITE CALCAREOUS LAYERS
2544.00 - 2534.00	56.0 - 66.0	CLAYSTONE, REDDISH-BROWN, VERY SILTY, MASSIVE; CALCAREOUS
2534.00 - 2527.00	66.0 - 73.0	SILTSTONE, OLIVE-GREEN TO CREAMY WHITE; SOFT, CALCAREOUS
2527.00 - 2508.00	73.0 - 92.0	SILTSTONE, REDDISH-BROWN, CLAYEY, MASSIVE;

CALCAREOUS

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Location Information

Legal Location:SW SE SE SE SEC. 30, T. 039 N., R. 28 W.
County:TODD Location:039N-28W-30DDDC
Basin:KEYA PAHA Latitude:43 19' 03"
Hydrologic Unit Code:10150006 Longitude:100 40' 26"
Land Owner: Ground Surface Elevation (ft.):2618 T

Project Information

Project:MISSION WATER PROJECT Geologist:A. BARARI
Drill Date:07/05/1966 Geologist's Log:
Company:SDGS Driller:BRINKLEY/GANN
Drilling Method:AUGER Driller's Log:X
Test Hole Number:1 Total Drill Hole Depth (ft.):74.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2618.00 - 2617.00	0.0 - 1.0	TOPSOIL
2617.00 - 2604.00	1.0 - 14.0	CLAY, BROWNISH-TAN; SOME SILT, MOIST
2604.00 - 2579.00	14.0 - 39.0	CLAY, BROWNISH- TO GRAYISH-TAN; MOIST, WETTER FROM 24 TO 39 FEET
2579.00 - 2565.00	39.0 - 53.0	SAND, GRAYISH- TO TANNISH-BROWN, FINE TO MEDIUM TO COARSE; SATURATED
2565.00 - 2555.00	53.0 - 63.0	CLAY, BROWNISH- TO GRAYISH-TAN
2555.00 - 2544.00	63.0 - 74.0	CLAY, BUFF TO TANNISH-BROWN; DRY, SOME COARSE SAND

DEPTH TO WATER - 39 FEET.

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Location Information

Legal Location: NW NW NW NW SEC. 31, T. 039 N., R. 28 W.
County: TODD Location: 039N-28W-31BBBB
Basin: KEYA PAHA Latitude: 43 19' 02"
Hydrologic Unit Code: 10150006 Longitude: 100 41' 25"
Land Owner: Ground Surface Elevation (ft.): 2600 T

Project Information

Project: MISSION WATER PROJECT Geologist: A. BARARI
Drill Date: 07/06/1966 Geologist's Log:
Company: SDGS Driller: BRINKLEY/GANN
Drilling Method: AUGER Driller's Log: X
Test Hole Number: 2 Total Drill Hole Depth (ft.): 69.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

SPECIAL REPORT 41.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2600.00 - 2599.00	0.0 - 1.0	TOPSOIL
2599.00 - 2596.00	1.0 - 4.0	SILT, LIGHT-TANNISH-YELLOW; SOME FINE SAND, DRY
2596.00 - 2591.00	4.0 - 9.0	CLAY, LIGHT-TANNISH-BROWN; DRY
2591.00 - 2581.00	9.0 - 19.0	CLAY, REDDISH-TAN, SILTY; MOIST
2581.00 - 2556.00	19.0 - 44.0	CLAY, REDDISH-TAN, SILTY; SOME FINE SAND, SATURATED
2556.00 - 2546.00	44.0 - 54.0	CLAY, LIGHT-TANNISH-PINK; MOIST
2546.00 - 2531.00	54.0 - 69.0	CLAY, LIGHT-TANNISH-GRAY; DRY

DEPTH TO WATER - 19 FEET.

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Location Information

Legal Location: NW NE NW SE SEC. 01, T. 039 N., R. 29 W.
County: TODD Location: 039N-29W-01DBAB
Basin: WHITE Latitude: 43 22' 55"
Hydrologic Unit Code: 10140204 Longitude: 100 41' 50"
Land Owner: Ground Surface Elevation (ft.): 2420 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: M. JARRETT
Drill Date: 09/21/1994 Geologist's Log: X
Company: SDGS Driller: G. JENSEN
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-94-73 Total Drill Hole Depth (ft.): 182.0
Samples:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2420.00 - 2418.00	0.0 - 2.0	TOPSOIL, BROWN
2418.00 - 2407.00	2.0 - 13.0	CLAY, GREENISH-GRAY TO TAN-BROWN; MASSIVE, NONCALCAREOUS
2407.00 - 2308.00	13.0 - 112.0	SILTSTONE, PALE-YELLOWISH-BROWN TO GREENISH-GRAY, CLAYEY; NONCALCAREOUS TO MODERATELY CALCAREOUS
2308.00 - 2254.00	112.0 - 166.0	SILTSTONE, DUSKY-YELLOW TO GREENISH-GRAY, CLAYEY; NONCALCAREOUS; SOME CLAYSTONE AND CLAY LAYERS
2254.00 - 2238.00	166.0 - 182.0	SHALE, GRAYISH-BLACK; NONCALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:NE NE NW SE SEC. 26, T. 039 N., R. 29 W.
County:TODD Location:039N-29W-26DBAA
Basin:WHITE Latitude:43 19' 28"
Hydrologic Unit Code:10140203 Longitude:100 43' 00"
Land Owner: Ground Surface Elevation (ft.):2629 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/20/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-71 Total Drill Hole Depth (ft.):402.0
Samples:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2629.00 - 2580.00	0.0 - 49.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SLIGHTLY CLAYEY; FISSILE, NONCALCAREOUS; BECOMING SANDY WITH DEPTH (ARIKAREE FORMATION)
2580.00 - 2567.00	49.0 - 62.0	SAND, MODERATE-YELLOW-BROWN, VERY FINE-GRAINED, SILTY; NONCALCAREOUS
2567.00 - 2554.00	62.0 - 75.0	SAND, MEDIUM-YELLOW-BROWN, COARSE-GRAINED, ROUNDED; SOME GRAVEL; MOST OF THE SAND APPEARS TO BE REWORKED ARIKAREE SILTSTONE
2554.00 - 2505.00	75.0 - 124.0	SILTSTONE, LIGHT-BROWN, CLAYEY; FISSILE, NONCALCAREOUS
2505.00 - 2457.00	124.0 - 172.0	CLAYSTONE AND SILTSTONE, GRAYISH-ORANGE; NONCALCAREOUS
2457.00 - 2425.00	172.0 - 204.0	SILTSTONE, GRAYISH-ORANGE, CLAYEY; MASSIVE, MODERATELY CALCAREOUS
2425.00 - 2417.00	204.0 - 212.0	SANDSTONE AND SILTSTONE, DARK-YELLOWISH-BROWN TO GRAYISH-BROWN; NONCALCAREOUS; MORE SILT CONTENT WITH DEPTH (WHITE RIVER GROUP)
2417.00 - 2371.00	212.0 - 258.0	CLAY, GRAYISH-ORANGE TO PALE-YELLOWISH-BROWN, SILTY; MASSIVE, NONCALCAREOUS
2371.00 - 2327.00	258.0 - 302.0	CLAYSTONE, GRAYISH-ORANGE; FISSILE, SOME SILTSTONE, MODERATELY CALCAREOUS AT 280 FEET
2327.00 - 2300.00	302.0 - 329.0	CLAY, GREENISH-GRAY TO DARK-GREENISH-GRAY; NONCALCAREOUS TO MODERATELY CALCAREOUS

2300.00 - 2285.00	329.0 - 344.0	SILT, GRAYISH-GREEN; SOFT, SOME FINE SAND, NONCALCAREOUS
2285.00 - 2276.00	344.0 - 353.0	SAND, MEDIUM- TO COARSE-GRAINED, ANGULAR; SOME FINE GRAVEL, SOME SILT; MOSTLY LITHIC GRAINS
2276.00 - 2249.00	353.0 - 380.0	SHALE, OLIVE-GRAY, SOME YELLOWISH-ORANGE INCLUSIONS; NONCALCAREOUS, WEATHERED (PIERRE SHALE)
2249.00 - 2227.00	380.0 - 402.0	SHALE, GRAYISH-BLACK; NONCALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:NE NE NW SE SEC. 26, T. 039 N., R. 29 W.
County:TODD Location:039N-29W-26DBAA 1
Basin:WHITE Latitude:43 19' 28"
Hydrologic Unit Code:10140203 Longitude:100 43' 00"
Land Owner: Ground Surface Elevation (ft.):2629 T

Project Information

Project:MELLETTE-TODD CO. STUDY Geologist:M. JARRETT
Drill Date:09/20/1994 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-94-72 Total Drill Hole Depth (ft.):74.0
Samples:

Well Information

SDGS Well Name: R2-94-72 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2671.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC. MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):77.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

OBSERVATION WELL DRILLED FOR MELLETTE-TODD CO. STUDY. NO GEOLOGISTS LOG AVAILABLE FOR THIS WELL. LITHOLOGY IS TAKEN FROM R2-94-71 WHICH WAS DRILLED AT OR NEAR THE SAME LOCATION.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2629.00 - 2580.00	0.0 - 49.0	SILTSTONE, MODERATE-YELLOWISH-BROWN, SLIGHTLY CLAYEY; FISSILE, NONCALCAREOUS; BECOMING SANDY WITH DEPTH (ARIKAREE FORMATION)
2580.00 - 2567.00	49.0 - 62.0	SAND, MODERATE-YELLOW-BROWN, VERY FINE-GRAINED, SILTY; NONCALCAREOUS
2567.00 - 2555.00	62.0 - 74.0	SAND, MEDIUM-YELLOW-BROWN, COARSE-GRAINED, ROUNDED; SOME GRAVEL; MOST OF THE SAND APPEARS TO BE REWORKED ARIKAREE SILTSTONE

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Location Information

Legal Location:SE NE NE SE SEC. 20, T. 039 N., R. 30 W.
County:TODD Location:039N-30W-20DAAD
Basin:WHITE Latitude:43 20' 14"
Hydrologic Unit Code:10140203 Longitude:100 53' 16"
Land Owner: Ground Surface Elevation (ft.):2317 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/02/1995 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-95-25 Total Drill Hole Depth (ft.):202.0
Samples:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma:X Extra:X

INDUCTION LOG ON THIS TEST HOLE; NATURAL GAMMA, CONDUCTIVITY; AND RESISTIVITY.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2317.00 - 2315.00	0.0 - 2.0	TOPSOIL
2315.00 - 2220.00	2.0 - 97.0	SILT AND SILTSTONE, TAN-BROWN TO GRAYISH-BROWN (ROSEBUD FORMATION)
2220.00 - 2163.00	97.0 - 154.0	SILT AND SILTSTONE, GRAY TO GRAYISH-GREEN; SOME BROWN AND WHITE BEDS (BRULE FORMATION?)
2163.00 - 2153.00	154.0 - 164.0	SAND, FINE- TO COARSE-GRAINED
2153.00 - 2115.00	164.0 - 202.0	SHALE, BLACK (PIERRE SHALE)

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Location Information

Legal Location: NW NW NW NW SEC. 27, T. 039 N., R. 31 W.
County: TODD Location: 039N-31W-27BBBB
Basin: WHITE Latitude: 43 19' 49"
Hydrologic Unit Code: 10140203 Longitude: 100 58' 46"
Land Owner: Ground Surface Elevation (ft.): 2622 T

Project Information

Project: MELLETTE-TODD CO. STUDY Geologist: R. HAMMOND
Drill Date: 08/08/1995 Geologist's Log: X
Company: SDGS Driller: M. THOMPSON
Drilling Method: ROTARY Driller's Log:
Test Hole Number: R2-95-26 Total Drill Hole Depth (ft.): 565.0
Samples:

Well Information

SDGS Well Name: R2-95-26 Aquifer: WHITE RIVER GROUP
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation: 2624.00 T
Casing Type: PVC, SCH. 80 Casing Diameter (in.): 2.0
Screen Type: PVC, MFG., 0.010 IN. SLOT Screen Length (ft.): 10.0
Total Casing and Screen (ft.): 567.0 Casing Stick-up (ft.): 2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: X Single Point Resistivity: X
Natural Gamma: X Extra:

WELL HAS 20 FEET OF BLANK CASING ON THE BOTTOM AND IS SCREENED FROM 537 TO 547 FEET BELOW CASING TOP.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2622.00 - 2552.00	0.0 - 70.0	SANDSTONE AND SILTSTONE; POORLY CEMENTED SANDSTONE WITH A SILTY CLAY MATRIX, SOME ASH LAYERS THROUGHOUT (ARIKAREE FORMATION)
2552.00 - 2482.00	70.0 - 140.0	SANDSTONE, CEMENTED; CONTAINS SOME CLAY; SOME ASH AT 130 FEET (ARIKAREE FORMATION)
2482.00 - 2462.00	140.0 - 160.0	SILT AND CLAY; SOME DARK-GRAY TO BLACK FRAGMENTS OF CLAY OR CHERT (ARIKAREE FORMATION)
2462.00 - 2402.00	160.0 - 220.0	SANDSTONE AND SILTSTONE, TAN TO BUFF, WELL CEMENTED TO POORLY CEMENTED; SOME INTERBEDDED CLAY (ARIKAREE FORMATION)
2402.00 - 2392.00	220.0 - 230.0	SANDSTONE AND SILTSTONE, DARK-RED; SOME CLAY LAYERS (ARIKAREE FORMATION)
2392.00 - 2354.00	230.0 - 268.0	SANDSTONE AND SILTSTONE; SOME CLAY; MORE ASH CONTENT WITH DEPTH (ARIKAREE FORMATION)

2354.00 - 2182.00	268.0 - 440.0	SANDSTONE AND SILTSTONE, GREEN, SLIGHTLY SILTY; SOME CLAY (WHITE RIVER GROUP)
2182.00 - 2080.00	440.0 - 542.0	SAND, GREENISH, MEDIUM TO COARSE, MEDIUM ROUNDED; SOME CLAY; SOME ASH; MOSTLY QUARTZOSE CLASTS (WHITE RIVER GROUP)
2080.00 - 2057.00	542.0 - 565.0	SHALE, BLACK (PIERRE SHALE)

DESCRIPTIONS OF LITHOLOGIC UNITS WERE PROVIDED BY THE USGS IN HURON, SOUTH DAKOTA.
PIERRE SHALE WAS PICKED FROM THE GEOPHYSICAL LOG AT 542 FEET.

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Location Information

Legal Location:NW NW NW NW SEC. 27, T. 039 N., R. 31 W.
County:TODD Location:039N-31W-27BBBB 1
Basin:WHITE Latitude:43 19' 49"
Hydrologic Unit Code:10140203 Longitude:100 58' 46"
Land Owner: Ground Surface Elevation (ft.):2622 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:08/08/1995 Geologist's Log:X
Company:SDGS Driller:M. THOMPSON
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-95-26 Total Drill Hole Depth (ft.):100.0
Samples:

Well Information

SDGS Well Name: R2-95-26 Aquifer:ARIKAREE
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2624.00 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, MFG., 0.010 IN. SLOT Screen Length (ft.):10.0
Total Casing and Screen (ft.):90.0 Casing Stick-up (ft.):2.00
Well Maintenance Date:

Geophysical Information

Spontaneous Potential: Single Point Resistivity:
Natural Gamma: Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2622.00 - 2552.00	0.0 - 70.0	SANDSTONE AND SILTSTONE; POORLY CEMENTED SANDSTONE WITH A SILTY CLAY MATRIX, SOME ASH LAYERS THROUGHOUT (ARIKAREE FORMATION)
2552.00 - 2522.00	70.0 - 100.0	SANDSTONE, CEMENTED; CONTAINS SOME CLAY (ARIKAREE FORMATION)

DESCRIPTIONS OF LITHOLOGIC UNITS WERE PROVIDED BY THE USGS IN HURON, SOUTH DAKOTA.

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BELOW 150 FEET CHANGES TO LIGHT- BROWN TO
BUFF-COLORED CLAY CONTAINING BLACK PARTICLES

2450.00 - 2410.00	160.0 - 200.0	CLAY, TAN; LAYERS OF BUFF-COLORED SILTSTONE
2410.00 - 2390.00	200.0 - 220.0	SILTSTONE, LIGHT-BROWN TO BUFF-COLORED; CLAY LAYERS
2390.00 - 2330.00	220.0 - 280.0	SHALE, MULTI-COLORED; ALTERNATING HARD AND SOFT LAYERS

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Location Information

Legal Location:NE NE NE NE SEC. 03, T. 039 N., R. 32 W.
County:TODD Location:039N-32W-03AAAA 1
Basin:WHITE Latitude:43 23' 20"
Hydrologic Unit Code:10140203 Longitude:101 04' 44"
Land Owner: Ground Surface Elevation (ft.):2607 T

Project Information

Project:MELLETTTE-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:09/15/1992 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-92-45 Total Drill Hole Depth (ft.):552.0
Samples:

Well Information

SDGS Well Name: R2-92-45 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2609.50 T
Casing Type:PVC Casing Diameter (in.):2.0
Screen Type:PVC, MFG., SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):530.0 Casing Stick-up (ft.):2.50
Well Maintenance Date:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2607.00 - 2593.00	0.0 - 14.0	SILT, BROWN, VERY SANDY, CLAYEY; ABUNDANT WHITE NONCALCAREOUS NODULES, NONCALCAREOUS, MASSIVE
2593.00 - 2578.00	14.0 - 29.0	SILTSTONE, LIGHT-BROWN, SANDY, VERY CLAYEY; SLIGHTLY CALCAREOUS, MASSIVE
2578.00 - 2570.00	29.0 - 37.0	SANDSTONE, DARK-BROWN, VERY FINE, CLAYEY; SLIGHTLY CALCAREOUS, WELL-CEMENTED
2570.00 - 2524.00	37.0 - 83.0	SILTSTONE, LIGHT-BROWN, VERY CLAYEY; MASSIVE, NONCALCAREOUS FROM 37 TO 50 FEET, CALCAREOUS FROM 50 TO 83 FEET (ARIKAREE GROUP?)
2524.00 - 2505.00	83.0 - 102.0	SILTSTONE, YELLOWISH-BROWN, VERY SANDY; CALCAREOUS, MASSIVE TO POORLY BEDDED, (BRULE FORMATION?)
2505.00 - 2468.00	102.0 - 139.0	SILTSTONE, YELLOWISH-BROWN; CALCAREOUS, POORLY FISSILE, SOME THIN WHITE ASH BEDS
2468.00 - 2454.00	139.0 - 153.0	CLAYSTONE, GRAYISH-ORANGE, VERY SILTY; NONCALCAREOUS, MODERATELY TO POORLY FISSILE

2454.00 - 2379.00	153.0 - 228.0	SILTSTONE, GRAYISH-ORANGE, CLAYEY; NON-CALCAREOUS TO SLIGHTLY CALCAREOUS, MODERATELY TO POORLY FISSILE; VERY CALCAREOUS AND SLIGHTLY SANDY FROM 208 TO 222 FEET
2379.00 - 2351.00	228.0 - 256.0	SILTSTONE, GRAYISH-ORANGE, VERY CLAYEY; POORLY FISSILE, NONCALCAREOUS, LIGHT- OLIVE FROM 238 TO 256 FEET
2351.00 - 2301.00	256.0 - 306.0	SILTSTONE, LIGHT-BROWN, CLAYEY; FEW SLIGHTLY CALCAREOUS BEDS, FISSILE, LIGHT-OLIVE MOTTLING BELOW 272 FEET
2301.00 - 2217.00	306.0 - 390.0	SILTSTONE, GRAYISH-ORANGE, SANDY, CLAYEY; NONCALCAREOUS TO SLIGHTLY CALCAREOUS, POORLY TO MODERATELY FISSILE, LIGHT- OLIVE BELOW 320 FEET, SANDY, VERY FINE, 320 TO 350 FEET, CLAYEY FROM 370 TO 380 FEET
2217.00 - 2133.00	390.0 - 474.0	SILTSTONE, GRAYISH-ORANGE, CLAYEY; POORLY FISSILE, SLIGHTLY CALCAREOUS, LIGHT- OLIVE BETWEEN 400 TO 448 FEET AND 460 TO 474 FEET
2133.00 - 2089.00	474.0 - 518.0	SILTSTONE, GRAYISH-ORANGE, MOTTLED WITH OLIVE TO LIGHT-OLIVE, SANDY, VERY FINE, NONCALCAREOUS; VERY FINE CUTTINGS
2089.00 - 2078.00	518.0 - 529.0	SAND, WHITE TO LIGHT-GREEN, MEDIUM TO COARSE, SUBROUNDED
2078.00 - 2055.00	529.0 - 552.0	SHALE, OLIVE-BLACK; SLIGHTLY CALCAREOUS, FISSILE (MOBRIDGE MEMBER - PIERRE SHALE)

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2096.00 - 2059.00 702.0 - 739.0 SAND, YELLOW-GRAY, FINE-GRAINED IN UPPER
PORTION, COARSE TO VERY VERY COARSE-GRAINED
BELOW 720 FEET, WELL-SORTED, SUBROUNDED TO
SUBANGULAR; SLIGHTLY CALCAREOUS; PRIMARILY
QUARTZ WITH MINOR AMOUNTS OF CHERT, FELDSPAR
AND OTHER GRAINS (CHADRON FORMATION)

2059.00 - 2026.00 739.0 - 772.0 CLAYSTONE, OLIVE-BLACK TO BROWNISH-BLACK;
SLIGHTLY CALCAREOUS; SOMEWHAT FISSILE (PIERRE
SHALE)

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Location Information

Legal Location:NE NE NE NE SEC. 27, T. 039 N., R. 32 W.
County:TODD Location:039N-32W-27AAAA
Basin:WHITE Latitude:43 19' 47"
Hydrologic Unit Code:10140203 Longitude:101 04' 45"
Land Owner: Ground Surface Elevation (ft.):2675 T

Project Information

Project:MELLETTT-TODD CO. STUDY Geologist:R. HAMMOND
Drill Date:06/01/1993 Geologist's Log:X
Company:SDGS Driller:G. JENSEN
Drilling Method:ROTARY Driller's Log:
Test Hole Number:R2-93-08 Total Drill Hole Depth (ft.):592.0
Samples:X

Well Information

SDGS Well Name:R2-93-08 Aquifer:
Water Rights Well: Management Unit:
Other Well Name: Casing Top Elevation:2677.80 T
Casing Type:PVC, SCH. 80 Casing Diameter (in.):2.0
Screen Type:PVC, SLOT SIZE 0.010 IN. Screen Length (ft.):10.0
Total Casing and Screen (ft.):560.0 Casing Stick-up (ft.):2.80
Well Maintenance Date:

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

FILTER PACK COMPRISED OF 0.65-0.75 MM QUARTZ SAND PLACED FROM 559 FEET TO 500 FEET.
REMAINDER OF HOLE PLUGGED WITH HIGH SOLIDS BENTONITE GROUT. AFTER SETTLEMENT, CEMENT
GROUT WAS PLACED FROM 20 FEET TO LAND SURFACE.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2675.00 - 2673.00	0.0 - 2.0	TOPSOIL, BLACK
2673.00 - 2664.00	2.0 - 11.0	SANDSTONE, REDDISH-BROWN, FINE TO VERY FINE, VERY SILTY, MASSIVE; NON- CALCAREOUS (ROSEBUD FORMATION)
2664.00 - 2654.00	11.0 - 21.0	SILTSTONE, REDDISH-BROWN, SLIGHTLY SANDY, MASSIVE (ROSEBUD FORMATION)
2654.00 - 2633.00	21.0 - 42.0	CLAYSTONE, LIGHT-REDDISH-BROWN TO REDDISH-BROWN, SANDY, SILTY; NONCALCAREOUS (ROSEBUD FORMATION)
2633.00 - 2599.00	42.0 - 76.0	SILTSTONE, GRAYISH-ORANGE, SANDY TO VERY SANDY, MASSIVE(?); CALCAREOUS TO NON- CALCAREOUS (ROSEBUD FORMATION)
2599.00 - 2511.00	76.0 - 164.0	SILTSTONE, MODERATE-ORANGE-PINK TO DARK- YELLOWISH-ORANGE, SANDY; CALCAREOUS, HIGH GAMMA

KICK AT 97 TO 113 FEET, SOME FINE MICA AND MEDIUM WELL-ROUNDED QUARTZ SAND, SOME DARK VERY SMALL BONES AT 90 FEET TO 100 FEET

2511.00 - 2483.00	164.0 - 192.0	SILTSTONE, LIGHT-BROWN, VERY SANDY; SLIGHTLY CALCAREOUS, NONCALCAREOUS AT 164 FEET TO 170 FEET, SAND IS FINE TO MEDIUM AND SUBHEDRAL TO SUBROUNDED QUARTZ AND LITHIC CLASTS, MINOR MAFIC AND MICA GRAINS, SOME WELL-ROUNDED NONCALCAREOUS WHITE CLAYSTONE GRAINS
2483.00 - 2452.00	192.0 - 223.0	SANDSTONE, VERY-PALE-ORANGE TO GRAYISH- ORANGE, VERY FINE, VERY SILTY, POORLY TO WELL-ROUNDED, POORLY SORTED, MASSIVE TO POORLY BEDDED; SLIGHTLY CALCAREOUS
2452.00 - 2406.00	223.0 - 269.0	SILTSTONE, DARK-YELLOWISH-BROWN TO YELLOWISH-BROWN, SANDY; CALCAREOUS, FINE SAND CONSISTS OF QUARTZ, LITHIC AND SOME MICA
2406.00 - 2385.00	269.0 - 290.0	SILTSTONE, LIGHT-BROWN, CLAYEY, SANDY, VERY SANDY AT 280 FEET TO 287 FEET, MASSIVE(?)
2385.00 - 2352.00	290.0 - 323.0	SILTSTONE, GRAYISH-ORANGE, CLAYEY, VERY SANDY; SAND IS VERY FINE TO FINE AND WELL-ROUNDED QUARTZ GRAINS; NON- CALCAREOUS
2352.00 - 2320.00	323.0 - 355.0	CLAYSTONE, GRAYISH-ORANGE, SILTY, SANDY, MASSIVE; NONCALCAREOUS
2320.00 - 2303.00	355.0 - 372.0	SILTSTONE, GRAYISH-ORANGE, CLAYEY, SANDY, MASSIVE TO POORLY BEDDED; NONCALCAREOUS
2303.00 - 2278.00	372.0 - 397.0	SILTSTONE, GRAYISH-ORANGE-PINK, CLAYEY, SANDY; CALCAREOUS (BRULE FORMATION)
2278.00 - 2203.00	397.0 - 472.0	CLAYSTONE, YELLOWISH-GRAY, SILTY; CALCAREOUS TO POORLY CALCAREOUS, SOME HARD CHERTY BEDS
2203.00 - 2185.00	472.0 - 490.0	SAND, GRAYISH-ORANGE-PINK, VERY FINE, SILTY; NONCALCAREOUS
2185.00 - 2178.00	490.0 - 497.0	CLAYSTONE, PALE-OLIVE TO YELLOWISH-GRAY, SILTY; NONCALCAREOUS
2178.00 - 2133.00	497.0 - 542.0	SILTSTONE, YELLOWISH-GRAY; SLIGHTLY CALCAREOUS, NUMEROUS ASHY LAYERS, HIGH GAMMA SPIKE AT 525 FEET TO 526 FEET SUGGESTING ASH BED, GRADES TO SANDY SILTSTONE BELOW 530 FEET (CHADRON FORMATION?)
2133.00 - 2123.00	542.0 - 552.0	SILTSTONE, YELLOWISH-GRAY, CLAYEY; NON-CALCAREOUS, SOME SANDY BEDS
2123.00 - 2110.00	552.0 - 565.0	SAND, YELLOWISH-GRAY, FINE TO MEDIUM, SUBANGULAR TO SUBROUNDED; QUARTZOSE WITH SOME LITHIC MICACEOUS AND MAFIC CLASTS

2110.00 - 2083.00

565.0 - 592.0

CLAYSTONE, OLIVE-GRAY, MASSIVE TO POORLY
BEDDED; NONCALCAREOUS (PIERRE SHALE)

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Location Information

Legal Location:SE SE SE SE SEC. 15, T. 039 N., R. 33 W.
County:TODD Location:039N-33W-15DDDD
Basin:WHITE Latitude:43 20' 44"
Hydrologic Unit Code:10140202 Longitude:101 11' 53"
Land Owner: Ground Surface Elevation (ft.):2800 T

Project Information

Project:USGS HIGH PLAINS PROJECT Geologist:
Drill Date:10/18/1979 Geologist's Log:X
Company:MIDLAND DRILLING Driller:
Drilling Method:ROTARY Driller's Log:
Test Hole Number: Total Drill Hole Depth (ft.):426.0
Samples:

Well Information

SDGS Well Name: Aquifer:ARIKAREE
Water Rights Well:TD-79D Management Unit:
Other Well Name:TD-79-4 Casing Top Elevation:
Casing Type:PVC Casing Diameter (in.):1.5
Screen Type:PVC, HM. Screen Length (ft.):40.0
Total Casing and Screen (ft.):360.0 Casing Stick-up (ft.):
Well Maintenance Date:06/25/1984

Geophysical Information

Spontaneous Potential:X Single Point Resistivity:X
Natural Gamma:X Extra:

CASING IS SLOTTED FROM 300 TO 340 FEET. BOTTOM SECTION OF CASING IS CAPPED. WELL GRAVEL PACKED, STAKED AND WIRE SECURED. BACKFILLED WITH MUD. SLOTTED CASING WAS GENERALLY PLACED OPPOSITE THE DEEPEST BEST SANDS IN THE ARIKAREE. SOURCE OF DATA: USGS OPEN-FILE REPORT 84-148.

<u>Elevation (ft.)</u>	<u>Depth (ft.)</u>	<u>Description</u>
2800.00 - 2781.00	0.0 - 19.0	CLAY AND SILT, LIGHT-BROWN; FINE SANDSTONE
2781.00 - 2766.00	19.0 - 34.0	CLAY, SILT, AND SAND, LIGHT-REDDISH- BROWN; CHANGES TO SANDSTONE AND BROWN CLAY BELOW
2766.00 - 2736.00	34.0 - 64.0	SANDSTONE; WHITE CLAY
2736.00 - 2721.00	64.0 - 79.0	CLAY, SILT, AND SAND, BROWN; CLAY LUMPS, FRIABLE SANDSTONE
2721.00 - 2701.00	79.0 - 99.0	CLAY, SILT, AND SAND, LIGHT BROWN; SOME CLAY LUMPS
2701.00 - 2681.00	99.0 - 119.0	CLAY, SILT, SAND, AND SANDSTONE, LIGHT- BROWN; SOME CLAY LUMPS
2681.00 - 2661.00	119.0 - 139.0	CLAY, SILT, AND SAND, BROWN; SOME CLAY LUMPS, SOME SANDSTONE

2661.00 - 2641.00	139.0 - 159.0	CLAY, SILT, AND SAND, BROWN; CLAY LUMPS
2641.00 - 2583.00	159.0 - 217.0	CLAY, SILT, AND SAND, LIGHT-BROWN; WHITE CLAY LUMPS, SOME SANDSTONE
2583.00 - 2562.00	217.0 - 238.0	CLAY, SILT, SAND, AND SANDSTONE, LIGHT- BROWN; WHITE CLAY LUMPS, SOME BROWN, STICKY CLAY
2562.00 - 2542.00	238.0 - 258.0	CLAY, SILT, AND SAND, LIGHT-BROWN; WHITE, STICKY CLAY, BROWN CLAY, SOME SANDSTONE PIECES
2542.00 - 2522.00	258.0 - 278.0	SILTSTONE; SANDSTONE, STICKY CLAY LUMPS
2522.00 - 2502.00	278.0 - 298.0	CLAY, SILT, AND MUDSTONE, LIGHT-COLORED; WHITE CLAY
2502.00 - 2463.00	298.0 - 337.0	CLAY, SILT, AND SILTSTONE, LIGHT-COLORED; BROWN AND WHITE CLAY LUMPS, SOME STREAM GRAVELS
2463.00 - 2423.00	337.0 - 377.0	CLAY, SILT, AND SAND, LIGHT-BROWN TO REDDISH-COLORED; STICKY CLAY LUMPS, SOME SILTSTONE, POSSIBLY SOME RED FELDSPAR PARICLES
2423.00 - 2403.00	377.0 - 397.0	SHALE, SILTY AT TOP OF JOINT; CHANGES TO BROWNISH-GREEN CLAY BELOW, WHITE, STICKY CLAY, SOME SAND PARTICLES
2403.00 - 2374.00	397.0 - 426.0	CLAY, GREEN TO GREENISH-BROWN, POORLY SORTED; SOME SILT, FINE SAND, AND RED SHALE PARTICLES

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