BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Transmission Permit for the Big Stone South to Ellendale Project

EL13-028

MONTANA-DAKOTA UTILITIES CO. AND OTTER TAIL POWER COMPANY'S RESPONSES TO STAFF'S FIRST DATA REQUESTS DATED SEPTEMBER 19, 2013

Montana-Dakota Utilities Co. and Otter Tail Power Company, for its responses to Staff's First Data Requests dated September 19, 2013, states as follows:

1) Per ARSD 20:10:22:10, please "provide a description of present and estimated consumer demand and estimated future energy needs of those customers to be directly served by the proposed facility."

RESPONSE: **The Big Stone South – Ellendale 345 kV project involves a high voltage transmission line, developed collaboratively as a MISO Multi-Value Project (MVP) to increase transmission capacity to provide the entire MISO footprint the infrastructure needed to support the renewable energy mandates for all the states in the MISO footprint. The need for the proposed Big Stone South – Ellendale 345 kV line is driven by demand across the MISO footprint.**

The planning study for the MVP portfolio included transmission projects covering all the states in the MISO footprint. The generation assumptions in this study included about 890 MW of future generation in South Dakota by the year 2021, and over 1400 MW by the year 2026 that could be delivered anywhere within MISO through the proposed MVP projects, which includes the Big Stone South – Ellendale 345 kV line. The Big Stone South – Ellendale 345 kV line will allow future generators to interconnect to the transmission system.

Due to the interconnected nature of the transmission system, the project will also support the transmission system outside of MISO in South Dakota and North Dakota by providing a new high voltage source to the existing transmission system.

2) Please provide cross sections of the bedrock geology and surficial geology to depict the major subsurface variations in accordance with ARSD 20:10:22:14(3). An example from docket EL09-015 is attached.

RESPONSE: **In accordance with ARSD 20:10:22:14(3), "A written summary of the geological features of the plant, wind energy, or transmission site using the topographic map as a base showing the bedrock geology and surficial geology with sufficient cross-sections to depict the major subsurface variations in the siting area" is provided as BSSE 1-2. The geologic cross section of the South Dakota Facility was prepared using publically available data for surface elevation, depth to bedrock, surficial geology, and bedrock geology. Since borehole data has not yet been collected for the Project, detailed geologic information was not available to construct the cross section. Therefore, the cross section provides a generalized view of the underlying geology along the South Dakota Facility (BSSE 1-2). Limitations to the cross section that may exist including small, localized variations in bedrock geology are not shown. The overlying unconsolidated material also varies locally along the South Dakota Facility from silts and clays to sand and gravel, but for simplicity, these materials have been shown as one unit, called Unconsolidated Deposits (BSSE 2). In addition, information on thicknesses of the underlying bedrock units along the South Dakota Facility was not available. Because of this and to avoid a large vertical exaggeration, the thicknesses of the units are not accurately shown on the cross section (these unknowns are shown with question marks or a dashed line on BSSE 2). This is not considered a significant limitation since the proposed structure foundations will likely be 50-feet-deep or less.**

Areas of shallow bedrock (less than 50 feet) were identified in two distinct areas along the South Dakota Facility. The first is located in the vicinity of Mile 4, where the underlying Pierre Shale is approximately 30 feet from the surface (BSSE 2). The second occurs near Mile 55 to Mile 65, where the underlying bedrock is also the Pierre Shale and can be less than 20 feet from the surface (BSSE 2).

Sources:

1. **Bedrock Geology and Bedrock Contours. South Dakota Department of Environment and Natural Resources, Geological Survey. Link to the file - http://www.sdgs.usd.edu/pubs/pdf/esdbedrock_20040630.zip**
2. **Quaternary Surficial Geology. United States Geological Survey. Quaternary Map of the Dakotas: http://pubs.usgs.gov/imap/i-1420/nl-14/downloads/dakotasGIS/**
3. **Elevation Contours. USGS National Elevation Dataset**

3) Are drainage patterns in Exhibit 8 representative of both before and after construction drainage patterns?

RESPONSE: **The drainage patterns as shown on Exhibit 8 of the Application represent both before and after construction drainage patterns. The Applicants do not anticipate changes to drainage patterns after construction.**

4) Per ARSD 20:10:22:18(1)(k), please provide a map with the municipal water supply and water sources for organized rural water districts.

RESPONSE: **See attached water supply maps for Day, Grant and Brown Counties numbered BSSE 3-5. The attached maps were developed by KLJ Engineering. The resources that were used to develop these maps are found on attached BSSE 6.**

5) Per ARSD 20:10:22:23(2), please provide forecasts on the immediate and long-range impact of property and other taxes of the affected taxing jurisdictions.

RESPONSE: **Property taxes in South Dakota for a transmission line project such as this are paid to each county where the project will be located. The tax bill as prepared by each county is based on that county and/or township's mill levy. The value basis used by the County is determined by the State of South Dakota through a central assessment process for projects of this type. The assessment that the State applies to the project is based on a number of criteria including the total investment in the project as well as Indicators on how the company stands on a financial basis. Indicators such as Market, Cost, and Income are all used in this determination. The assessed value in each county is then calculated on a per mile basis for the project within each county. The State then provides this assessed value to each affected County who then applies the appropriate mill levy in effect at the time. Based on the current effective composite tax rates for South Dakota, we estimate a yearly property tax bill in the range of $1.75 to $2.25 million. This equals an approximate tax per mile of transmission line in the range of $11,200 to $14,500 in South Dakota based on approximately 155 miles of line. On a county by county basis, this calculates to property taxes of approximately $715,000 to $885,000 for Brown County, $535,000 to $755,000 for Day County, and $490,000 to $605,000 for Grant County.**

The Applicants' preliminary projections of sales/use taxes and contractor excise taxes paid during the project range from $5.5 million to $9 million.

6) Provide further support that transmission lines do not affect land/property values as identified in section 19.1.2.

RESPONSE: **Section 19.1.2 of the Application states, among other things, that "The South Dakota Facility is not expected to have significant short- or long-term effects on ....land values...". The Application does not state that the transmission line will not affect land/property values. Applicant continues to believe that the South Dakota Facility will not have significant short- or long-term effects on land values due to the relatively minimal footprint of the Project. The Project anticipates constructing approximately 5 or 6 monopoles per mile with a span of 700-1,200 feet between poles. The permanent impact is less than 5 acres of the nearly 1,600 acres temporarily and permanently affected by the Project.**

7) Per ARSD 20:10:22:23(6), please provide Applicant's plans to coordinate with local and state office of disaster services in the event of an accidental release or emergency.

RESPONSE: **The risk of accidental release of contaminants related to this transmission project is, as described in further detail in the Application, limited to small-scale environmental exposures arising from construction or significant maintenance work. As referenced in the Application, the Applicants will adopt Best Management Practices to prevent, monitor, contain and report the contaminants. Due to the nature of this project, the Applicants do not anticipate any large-scale releases of contaminants that would give rise to the need for disaster services from any local or state offices.**

8) Per ARSD 20:10:22:24, please provide more detailed employment estimates than what is found in section 20.0 of the application. Specifically, please provide the estimated annual employment expenditures of the Applicant, the contractors, and subcontractors during the construction phase of the proposed facility.

RESPONSE: **It is anticipated that the number of workers who will be involved with the various tasks leading up to and directly involved with the construction of the BSSE Project will range from 75-150. These tasks include surveying, geotechnical studies, material deliveries, Right-of-Way clearing, and line construction. The actual number of workers will fluctuate as various tasks are initiated and completed during the course of the Project. It is anticipated that most of the workers will be from outside the local area; therefore, the impact to the local economies will be through costs such as workers' expenditures for hotel rooms, travel trailer site rentals, meals, gas and miscellaneous supplies. The impact to the local economies, not including property taxes, from the BSSE Project is estimated to range from $3 million to $7 million through the construction period of the Project.**

9) Per ARSD 20:10:22:35(3), please provide a map of the major alternative routes.

RESPONSE: Please see BSSE 7, "Major Alternative Routes," as an illustration of the preliminary routes, which are the major alternative routes considered for the Project.

10) How is ongoing maintenance (e.g., vegetation management, annual inspections) of the transmission line going to be split between the Applicants?

RESPONSE: A decision on how ongoing maintenance will be split has not been decided. It is anticipated that one company will likely perform that type of maintenance on the entire line and the costs would be shared between Otter Tail Power Co. and Montana-Dakota Utilities.

11) In addition to the EMF concerns addressed in section 23.4, are there any known safety concerns with regard to farming around structures (e.g., collisions)?

RESPONSE: Yes. Accidental collision with a structure would be a safety concern with regard to farming around structures. The use of single-pole structures minimizes the risk of collisions.

12) Please describe, in greater detail, the two proposed fiber optic regeneration stations.

RESPONSE: The requirements for the fiber optic regeneration stations will be determined through joint consultation between the communications departments of the Applicants. The purpose of the fiber optic regeneration station is to monitor and amplify the fiber optic signal between the two substation endpoints when the distance between the substations exceeds approximately 75 miles. Typical fiber optic regeneration facilities consist of a small prefabricated building, approximately 8 ft. x 8 ft., or 8 ft. x 12 ft.. A slab foundation will be required to support the building. The building will house electronic equipment and vehicle access will be required as well as a power source. The buildings are typically located on or near the transmission line right-of-way, near a road access, and near an overhead distribution line. The installation may also include a backup generator. It is anticipated that two fiber optic regeneration stations will be required for the BSSE Project, located at the approximate one-third points along the route. See attached sample photograph numbered BSSE 8.

13) Per ARSD 20:10:22:05, notwithstanding those mentioned in Table 24 of the Application, is the Applicant aware of the need to notify any additional governmental entities?

RESPONSE: To the best of Applicants' knowledge at this time, no additional governmental entities need to be notified other than what is contained in the Application.

14) In section 8.1, it is identified that the transmission line route was selected based on several considerations. Please provide an analysis or demonstration that compares the preferred route to the alternative routes for each of the considerations listed, using measures that the Applicant deem appropriate.

RESPONSE: In response to this data request, the "preferred route" would refer to the South Dakota Facility as filed in the Facility Permit Application and shown in Data Response No. 9 numbered BSSE 7. In addition, the "alternative routes" as referenced in this data request would refer to the preliminary routes through Dickey and Sargent counties in North Dakota and which then proceed south through western Marshall and the northwestern portion of Day counties to roughly Bristol, South Dakota where there is a commonality in the routing. See BSSE 7.

A route through western Marshall and the northwestern portion of Day counties was not selected because the preferred route is shorter in length and may have better soils from a constructability perspective for the structure foundations. The Applicants received several comments regarding very wet soils in the western portion of Marshall County. Additionally, from a constructability perspective, the northern portion of Day County contains many large surface waters and wetlands that would be challenging to span and may require more structures to be placed within surface waters or wetlands. No homes are located within the right-of-way, and no homes are expected to be displaced by the South Dakota Facility. The Applicants are committed to working with homeowners and other landowners along the route to address concerns.

The alternative routes through Dickey and Sargent counties would require a crossing of the U.S. Fish and Wildlife Services' (USFWS) Dakota Lake National Wildlife Refuge and U.S. Bureau of Reclamation Oakes Research Area in North Dakota. In addition, one of the alternative routes would be located close to or potentially cross the Hecla Sand Prairie area in northwestern Marshall County, which is an area of conservation interest to the USFWS and they hold many grassland easements on the lands. The South Dakota Game, Fish, and Parks Department had also had concerns with the alternative routes in western Marshall County being located close to waterbird colonies. Lastly, the alternative routes would cross more prairie or grassland areas through western Marshall County and Sargent and Dickey counties in North Dakota compared to the preferred route.

In addition, the Applicants have been working with Native American tribes agencies who expressed that the preferred route was more desirable than the alternative route due to the higher percentage of the preferred route that crosses tilled land compared to the alternative routes which crossed larger percentages of pasture/prairie land. The tilled land in general has a lower probability of containing intact, undisturbed areas of importance to the tribes.

Both the preferred and the alternative routes minimize effects to Federal Aviation Administration airports and other land use conflicts.

Route development involves the analysis of many diverse criteria and the preferred route minimizes effects to populated areas and the natural environment, while also taking engineering constraints, overall length, and cost into account. The Applicants have addressed concerns expressed by stakeholders during the routing process and selected a single-pole structure to minimize potential effects with the smallest structure footprint and longer spans to reduce the number of structures.

STATE OF NORTH DAKOTA)
:SS.
COUNTY OF BURLEIGH)

Henry Ford, being duly sworn is the authorized agent of Montana-Dakota Utilities Co., for purposes of the response.

He states that he does not have personal knowledge of all the facts recited in the foregoing Responses of Montana-Dakota Utilities Co. and Otter Tail Power Company to Staff's First Data Requests, but the information has been gathered by and from employees, contractors of the owners of Big Stone South to Ellendale Project; and that the information is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 21 day of October, 2013.

MONTANA-DAKOTA UTILITIES CO.

By _____
Henry Ford
Its Director – Electric Transmission Engineering

Subscribed and sworn to before me this 21st day of October, 2013.

DENYS SCHWARTZ
Notary Public
State of North Dakota
My Commission Expires December 31, 2018

_____
Notary Public – South Dakota
(SEAL)

My Commission Expires: 12/31/18

STATE OF MINNESOTA)
:SS.
COUNTY OF OTTER TAIL)

Jason Weiers, being duly sworn is the authorized agent of Otter Tail Power Company, for purposes of the response.

He states that he does not have personal knowledge of all the facts recited in the foregoing Responses of Montana-Dakota Utilities Co. and Otter Tail Power Company to Staff's First Data Requests, but the information has been gathered by and from employees, contractors of the owners of Big Stone South to Ellendale Project; and that the information is verified by him as being true and correct on behalf of the owners of the Big Stone South to Ellendale Project.

Dated this 18th day of October, 2013.

OTTER TAIL POWER COMPANY

By Jason J Weiers
Jason Weiers
Its Manager, Delivery Planning

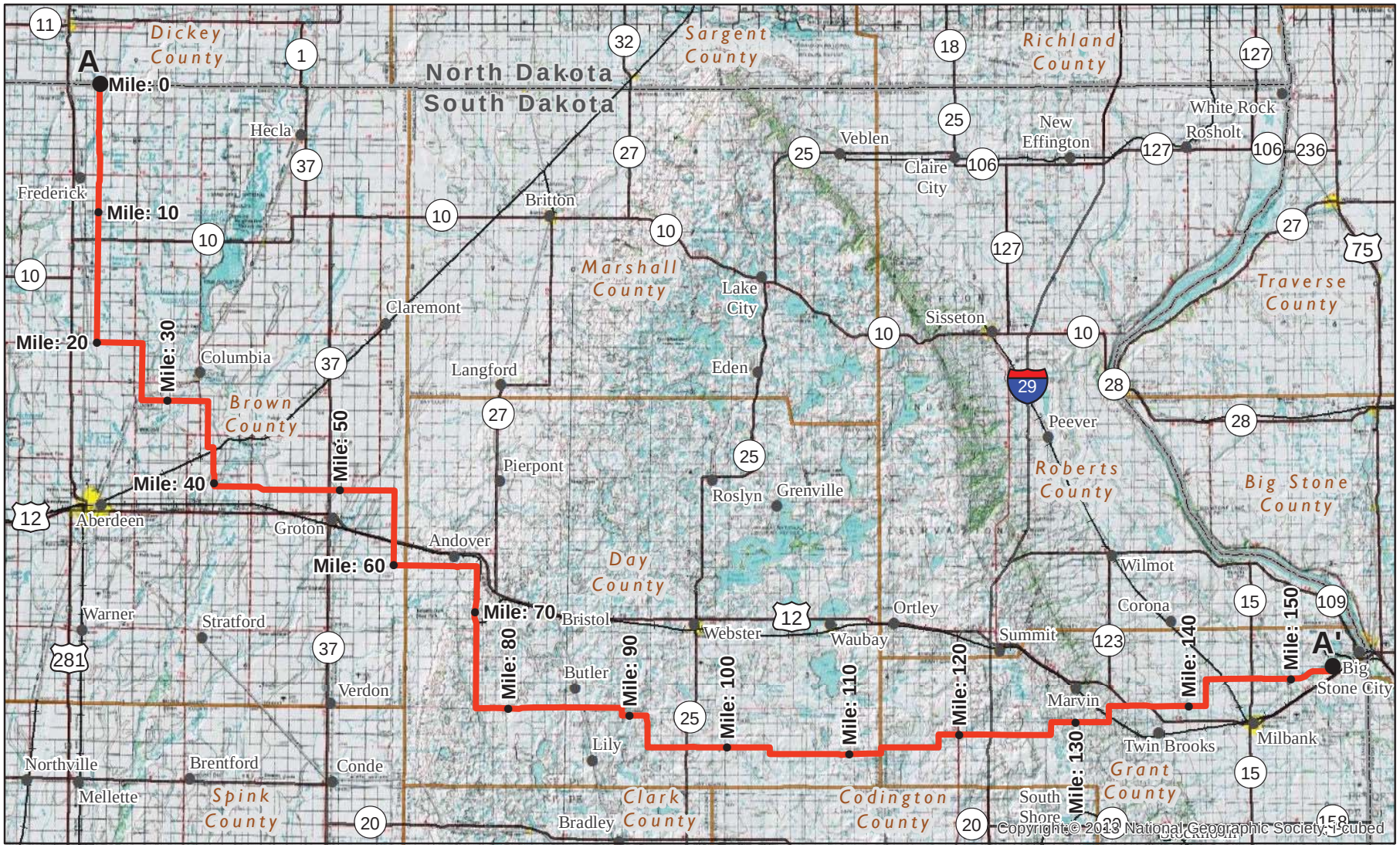
Subscribed and sworn to before me this 18th day of October, 2013.

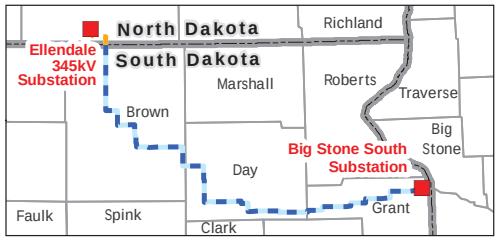
Carol J. Kocher
Notary Public – South Dakota
(SEAL)

My Commission Expires: Jan. 31, 2015

CAROL J. KOCHER
Notary Public-Minnesota
My Commission Expires Jan 31, 2015

Date: 9/30/2013





Geologic Cross Section
Railroad
Abandoned Railroad
Highway
City
County Boundary
State Boundary

Exhibit 1 of Data Request 2
Geologic Cross Section
Big Stone South to Ellendale
345 kV Transmission Line Project

N
Miles
0 10

BSSE
Big Stone South to Ellendale

Scale 1:700,000

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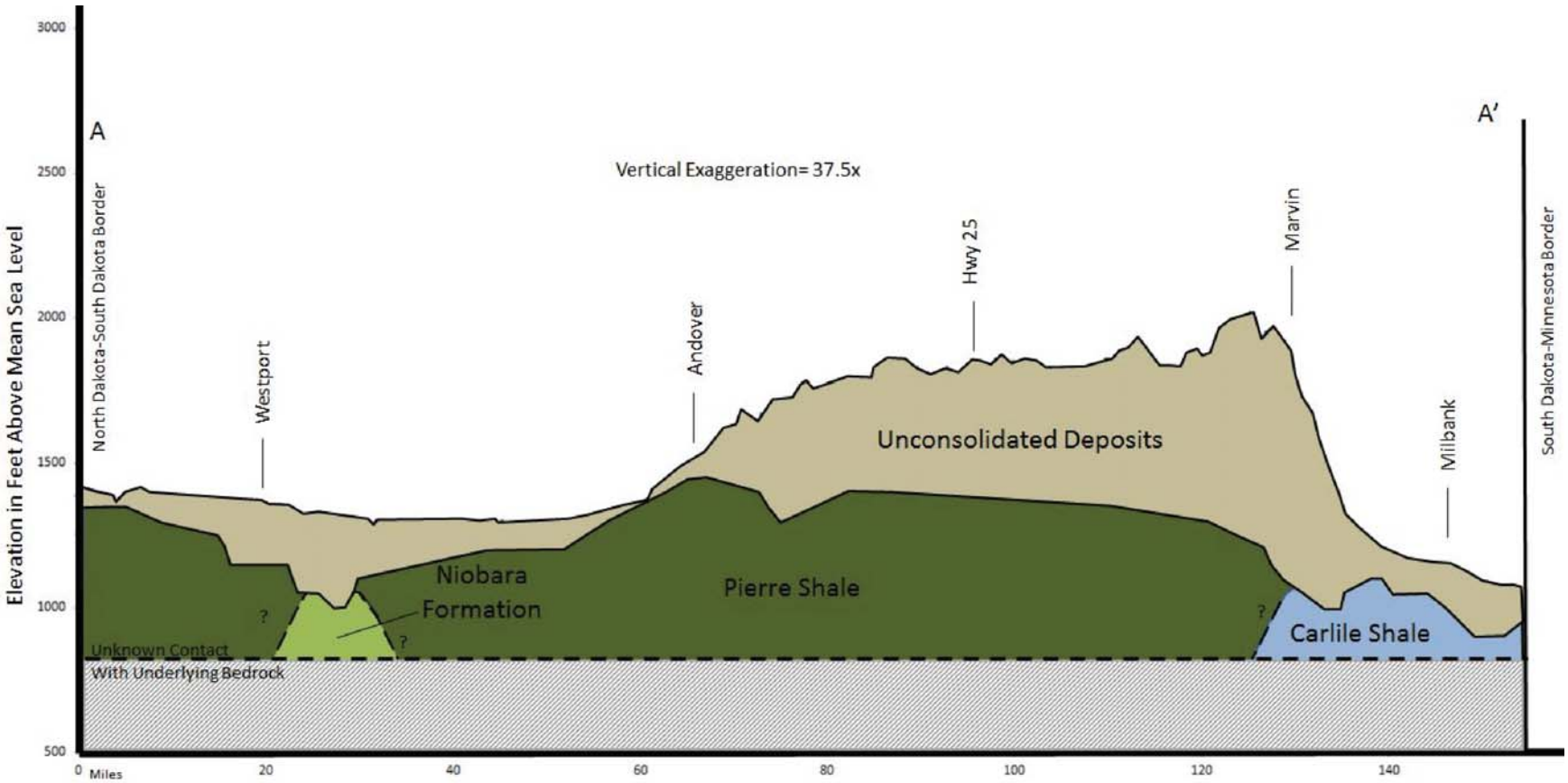
Date: 9/30/2013



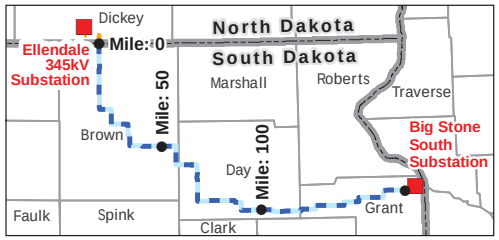


Exhibit 2 of Data Request 2
Geologic Cross Section
Big Stone South to Ellendale
345 kV Transmission Line Project

BSSE
Big Stone South to Ellendale

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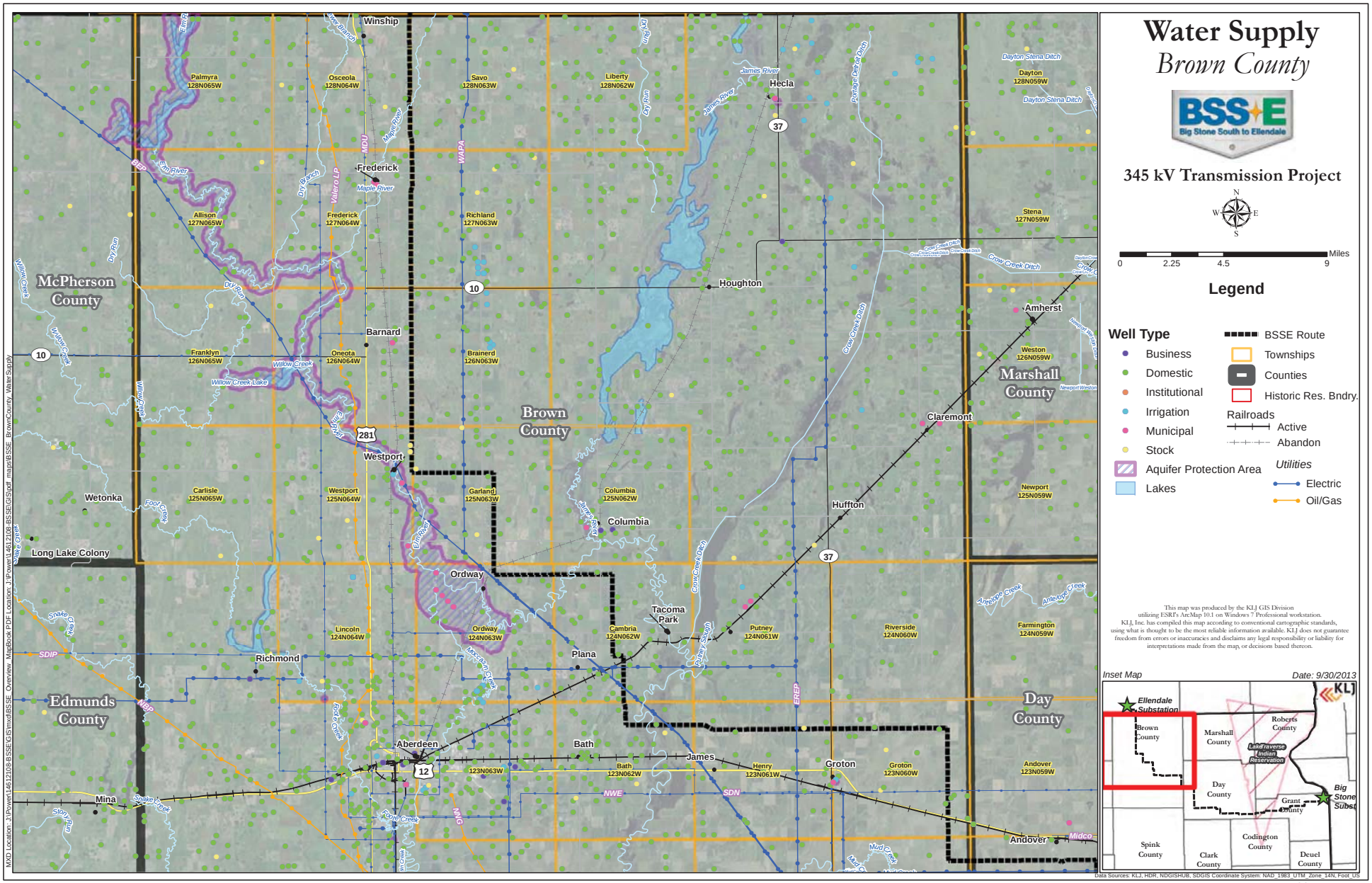
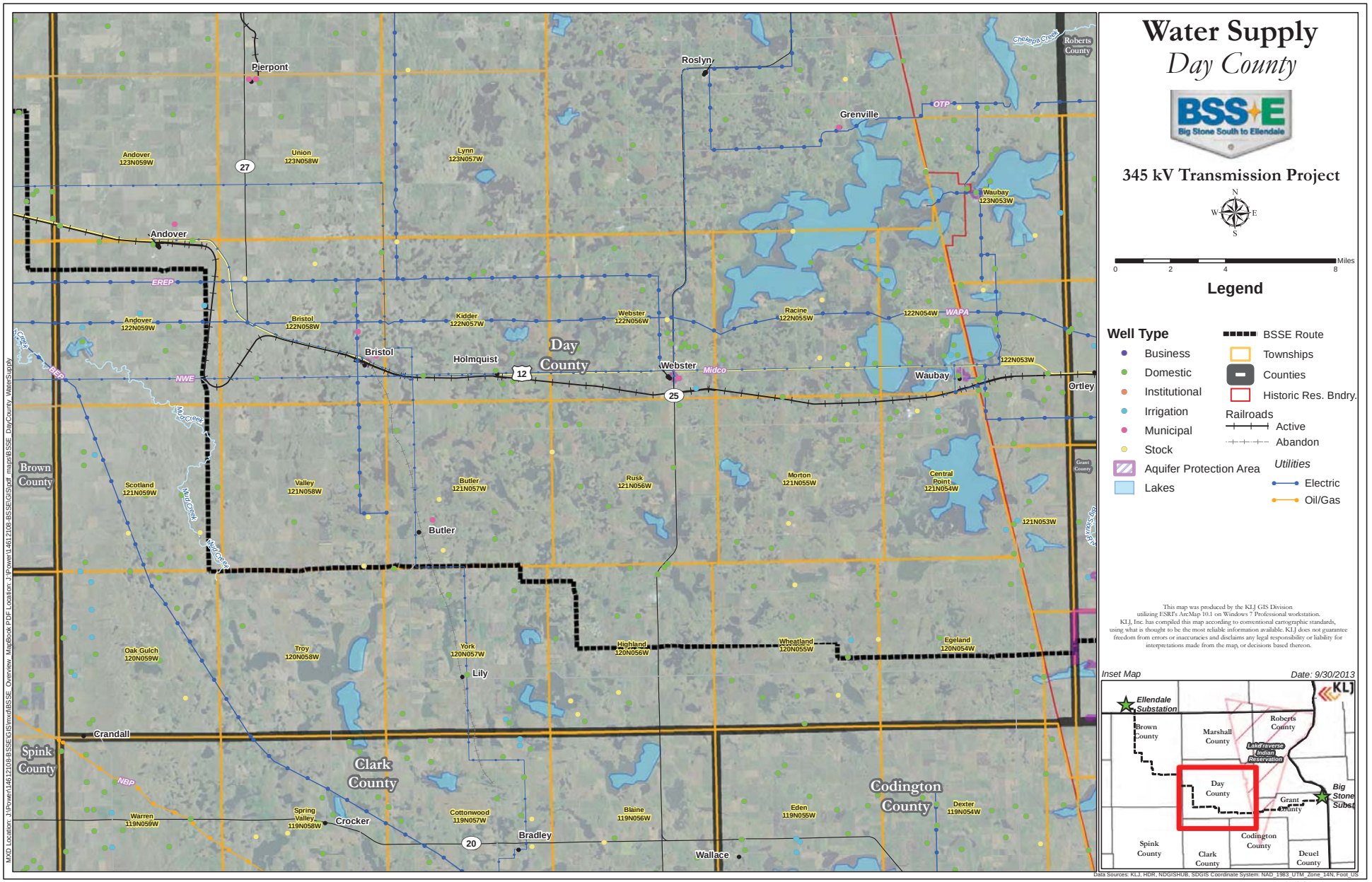


BSSE000003

001489



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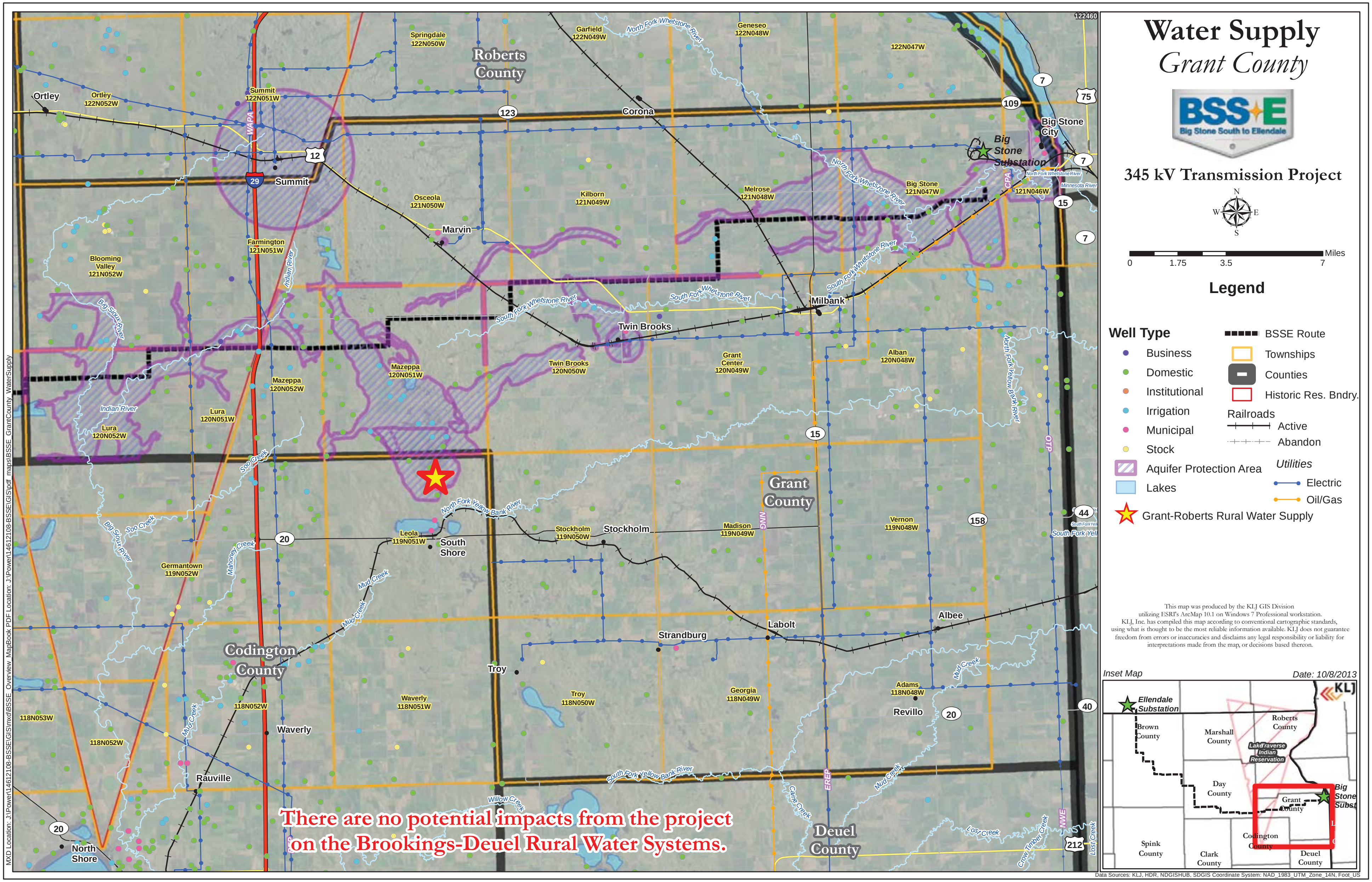


BSSE000005

001491

BSSE 'Water Supply' Maps

Resources providing information for water supply Source

United States Geological Survey (USGS)

- USGS web services to download 'free' spatial data for South Dakota
  - Data Received: Rivers, Lakes

Houston Engineering

- Dave Kirkpatrick, of Houston Engineering representative provided the data pertaining to the Roberts-Grant Water District in South Dakota.
  - Data Requested: Grant County Water Lines, Water District Boundaries
  - Data Received: Grant County Water Line System Data
- Contact: Dave Kirkpatrick – dkirkpatrick@houstoneng.com

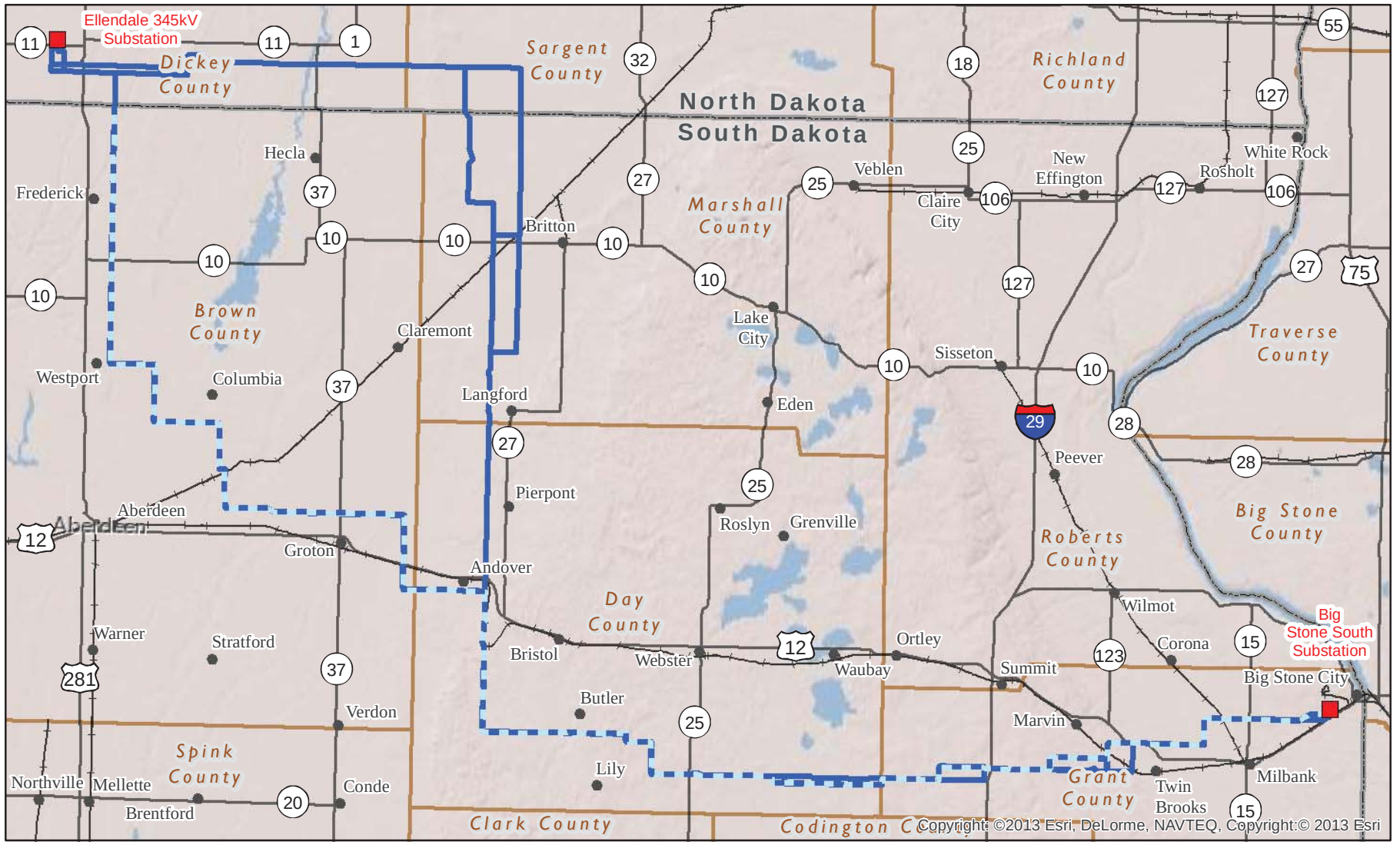
South Dakota Department of Environment & Natural Resources

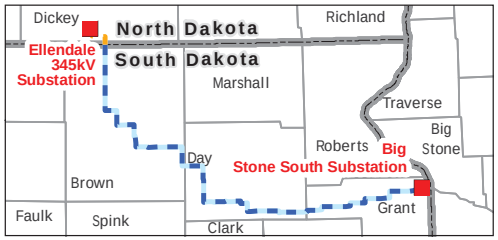
- Tim Cowman, of SD Department of Environmental Resources, in regards to data pertaining to the South Dakota Water Districts.
  - Data Requested: Water Source Data, Water Districts, Protection Areas, and Wells.
  - Data Received: Well Head Protection Plans, South Dakota Well Locations, Grant County Aquifer Protection Areas, Brown County Aquifer Protection Areas
- Contact: Tim Cowman – tim.cowman@usd.edu

WEB Water District

- Steve Harper of Webwater Development Association, in regards to data pertaining to the Web Water District.
  - Data Requested: District Boundaries, Water Lines, Water Source Data
  - Data Received: NONE
- Contact: Steve Harper – sharper@webwater.org

Date: 9/30/2013





South Dakota Facility
Preliminary Routes
Project End Point
Railroad
Highway
City
County Boundary
State Boundary

Exhibit 1 of Data Request 9
Preliminary Routes
Big Stone South to Ellendale
345 kV Transmission Line Project

Miles
0 10

BSSE

Scale 1:1,000,000

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BSSE000008

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Transmission Permit for the Big Stone South to Ellendale Project

EL13-028

CERTIFICATE OF SERVICE

I, Jason R. Sutton, do hereby certify that I am a member of the law firm of Boyce, Greenfield, Pashby & Welk, LLP, attorneys for Montana-Dakota Utilities Co. and Otter Tail Power Company and that on the 21st day of October 2013, a true and correct copy of Montana-Dakota Utilities Co. and Otter Tail Power Company's Responses to Staff's First Data Requests Dated September 19, 2013 was served via email to the following addresses listed:

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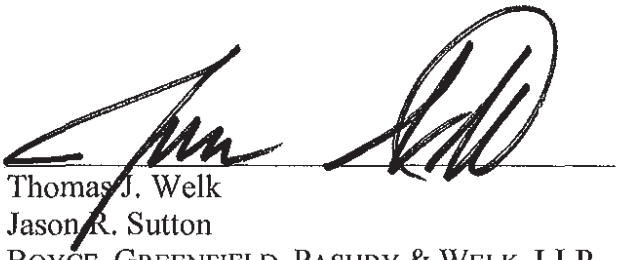

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