Exhibit No.:_____
Issues: Route Selection
Witness: Timothy B. Gaul
Sponsoring Party: Grain Belt Express
Clean Line LLC
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO: EA-2014-0207

DIRECT TESTIMONY OF

TIMOTHY B. GAUL

ON BEHALF OF

GRAIN BELT EXPRESS CLEAN LINE LLC

March 26, 2014

TABLE OF CONTENTS

I. QUALIFICATIONS

Q. Please state your name, present position and business address.

A. My name is Timothy B. Gaul. I am the Associate Vice President, Energy Services for the Louis Berger Group, Inc. ("Louis Berger"). My business address is 1250 23rd Street, N.W., Washington, DC.

Q, What are your duties and responsibilities as Associate Vice President – Energy Services of Louis Berger?

A. I work in the Planning, Facilities, and Resource Management Business Unit. In that capacity, I provide management and oversight of our Transmission Services, GIS Services, and Hydropower Teams.

I am also an environmental scientist and planner by training and experience, and I serve both as the Project Director for Louis Berger for the Grain Belt Express Clean Line transmission project ("Grain Belt Express Project" or "Project"), and as a member of the Routing Team, described below. As a Routing Team member, I was directly involved in the development and analysis of routes, public outreach efforts, coordination with state and federal agencies, comparison of alternatives, and preparation of the Missouri Route Selection Study ("Routing Study"), which is attached to my testimony as **Schedule TBG-1**.

Q. What is the purpose of your testimony in this docket?

A. I am testifying on behalf of Grain Belt Express Clean Line LLC ("Grain Belt Express"), and the purpose of my testimony is to describe the proposed Grain Belt Express Project route in Missouri. My testimony describes in detail the routing process and serves to sponsor the Routing Study.

Q. Please summarize your education and professional background.

A. I have a Bachelor of Science from the State University of New York College of Environmental Science and Forestry in Syracuse, New York and a Master of Science degree from Creighton University, in Omaha, Nebraska (2000). Throughout my career I have supported a range of environmental science and planning studies, and I specialize in planning efforts for infrastructure, environmental impact assessment and modeling, natural resource inventory and permitting, and GIS analysis in support of environmental planning and compliance. My *curriculum vitae* is attached to this testimony as **Schedule TBG-2.**

Q. Have you previously testified before any regulatory commissions?

A. Yes, I have provided testimony before the Virginia Corporation Commission, Pennsylvania Public Utility Commission, the West Virginia Public Service Commission and the Kansas Corporation Commission.

II. EXECUTIVE SUMMARY

Q. What is the Grain Line Express Project?

A. As described in more detail in the testimony of Grain Belt Express witness Michael Skelly, the Project is a multi-terminal +600 kilovolt ("kV") high voltage, direct current ("HVDC") transmission line, and associated transmission facilities, running from near the Spearville 345 kV substation in Ford County, Kansas to an intermediate delivery point in Ralls County, Missouri and on to an ultimate delivery point near the Sullivan 765 kV substation in Sullivan County, Indiana.

Q. Please provide an overview of the Routing Study.

A. The Routing Study documents the route selection methodology, public and agency outreach process, and the Proposed Route identification process for the Missouri portion of the Grain Belt Express Project that extends from the Missouri River south of St. Joseph, Missouri on the Kansas/Missouri border to the Mississippi River crossing point near Saverton, south of Hannibal in Ralls County on the Missouri/Illinois border.

The overall goal of the Routing Study was to gain an understanding of the opportunities and constraints in the Study Area for the Project, to develop feasible Alternative Routes, to evaluate potential impacts, and to identify a reasonable and sound Proposed Route for the Project. Grain Belt Express defined the Proposed Route as the route that minimizes the overall effect of the transmission line on the natural and human environment and that avoids unreasonable and circuitous routes, unreasonable costs, and minimizes special design requirements.

Q. Who conducted the Routing Study?

A. The Routing Study was conducted by an interdisciplinary Routing Team. Members of the Routing Team have experience in transmission line route planning and selection, impact assessment for natural resources, land use assessment and planning, cultural resource identification and assessment, impact mitigation, and transmission engineering, design, and construction. **Appendix A** of **Schedule TBG-1** lists the Routing Team members, their business affiliation, and their respective areas of responsibility.

III. DESCRIPTION OF THE ROUTING PROCESS

Q. Please describe the Missouri routing process.

A. The Routing Team employed a process to identify the Proposed Route that included evolutionary and iterative phases of developing routes; reviewing routes with respect to information gathered from state and federal regulatory agencies, community leaders, and the general public; and then revising the routes with more specific alignments.

Initial route development efforts started with the identification of large area constraints and opportunity features across the entire project Study Area. Examples of large area constraints in Missouri included Pershing State Park, Swan Lake National Wildlife Refuge, Mark Twain Lake and development associated with St. Joseph, Kansas City, Columbia, Jefferson City, and St. Louis. Examples of opportunity features in Missouri included an array of existing linear features including pipeline corridors, electric transmission lines, and section/parcel boundaries. Using this information, the Routing Team developed a range of Conceptual Routes, which were approximate alignments that served to focus the early data gathering, field reconnaissance, and public outreach efforts of the Routing Team.

As the Routing Team continued to collect information, coordinate with government agencies, and gather additional information, the assemblage of Conceptual Routes was narrowed and refined. These refinements ultimately eliminated the Conceptual Routes in the southern and central portions of the Study Area from further consideration due to challenges associated with a range of routing constraints, including large areas of federal land ownership, large complexes of reservoirs and recreational lakes, dense and interspersed development, and a lack of suitable crossings of the

Mississippi River. The remaining routes extended northeast from Ford County, Kansas, crossed the Missouri River south of St. Joseph, Missouri, crossed the Mississippi River north of St. Louis, and continued to the Sullivan Substation on paths south of Springfield, Illinois.

Due to the multi-state nature of the Project, Alternative Routes were first developed to determine the proposed route in Kansas. Once the Proposed Route was selected in Kansas, Potential Routes in Missouri were further refined based on the known location of the Missouri River crossing. These Potential Routes were then presented to public officials and to members of the general public in a series of public open house meetings ("Open Houses") in Missouri.

Following the Open Houses, the Routing Team assembled and reviewed the input that was gathered and revised the Potential Routes. In addition, a review and analysis of the five potential Mississippi River crossing locations was conducted to determine the preferred crossing location. Input from the public and government agencies, as well as engineering and natural resource considerations were factored into the selection of the Mississippi River crossing south of Hannibal. Due to the elimination of the other potential river crossing locations, several Potential Routes were removed from further consideration. A series of nine Alternative Routes was compiled from the remaining Potential Routes for analysis and comparison in the Missouri Siting Study.

The Routing Team divided the Alternative Routes into two distinct segments that had common beginning and end points: Segment 1 and Segment 2. Alternative Routes in each segment were compared against one another, and the most reasonable route from each segment was selected for compilation of the Proposed Route. In Segment 1,

Alternative Routes A through C were compared. In Segment 2, Alternative Routes D through I were compared.

Q. How was agency input incorporated into the process?

A. The Routing Team coordinated with numerous federal and state agencies and local officials to gather information for the route planning process. Initial agency coordination efforts focused on introductions to the Project, data gathering, and discussions concerning likely permitting and consultation requirements. Discussions aided in the identification of routing constraints and informed the development of initial routing guidelines. A list of the agencies consulted during the process is provided in Section 3 to **Schedule TBG-1**.

In addition, agency coordination was an integral component for the selection of the Mississippi River crossing location. The U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers (St. Louis and Rock Island Districts), Missouri Department of Conservation, Missouri Department of Natural Resources, Missouri State Historic Preservation Office, and Illinois Department of Natural Resources were contacted for advice and comment on the five potential Mississippi River crossing locations that were under consideration. The input from these agencies was included in the analysis that resulted in the selection of the Mississippi River crossing south of Hannibal.

Q. How was public input incorporated into the process?

A. The Routing Team led a community outreach program that was designed to educate the public about the purpose and benefits of the Project, inform community leaders and the public about the regulatory process and Project timeline, and gather general comments on the Project and specific information that would refine the siting effort. Grain Belt

Express witness Mark Lawlor provides a detailed description of the public outreach process in his direct testimony.

Two key components of the public outreach process that related to determining the Proposed Route were Community Leader Roundtables ("Roundtables") and Open Houses.

Q. Please describe the Roundtable process.

A. The main goal of the Roundtables was to coordinate with and gain valuable information from local leaders in each county in the Study Area. Community leaders included county and municipal elected officials, local government planners, community and business leaders, economic development experts, local utilities and cooperatives, as well as federal and state agency officials. At each meeting, members of the Routing Team presented an overview of the Project and described the routing process. After the presentation, attendees and members of the Routing Team met in small working groups to review an aerial map of the county they represented. Attendees provided information about sensitive features, planned development, and existing infrastructure in their community, and were also encouraged to draw route suggestions on the aerial maps that the Routing Team should consider in the study. In total, 24 Roundtables were held, with more than 250 participants attending from more than 40 counties.

Q. What was the purpose of the Open Houses?

A. The purpose of the Open Houses was to inform the general public and potentially affected landowners about the Project and to present a series of Potential Routes for their consideration and comment. At the Open Houses, attendees signed in and were given a guided presentation about the Project by members of the Routing Team. At the end of

the tour, the Routing Team assisted attendees in locating their property or other features of concern on aerial photography maps displaying the array of Potential Routes under consideration. Attendees were encouraged to submit written comments about their observations, recommendations or concerns. More than 1,200 people attended the 13 Open Houses.

Following the Open Houses, the Routing Team assembled and reviewed the input gathered at the public meeting, revised the Potential Routes where necessary, and compiled a series of nine Alternative Routes for detailed analysis and comparison. The Routing Team divided the Alternative Routes into two distinct segments that had common beginning and end points: Segment 1 in western Missouri (A through C) and Segment 2 in central and eastern Missouri (D through I). Alternative Routes in each segment were compared against one another, and the most reasonable route from each segment was selected for compilation of the Proposed Route.

IV. SELECTION OF THE PROPOSED ROUTE

Q. How did the Routing Team analyze the Alternative Routes as part of the process that led to the selection of the Proposed Route?

A. The nine Alternative Routes (Alternative Routes A through I) were assessed and compared with respect to their potential impacts on natural resources (water resources, wildlife and habitats, special status species, and geology and soils), human uses (agricultural use, populated areas and community facilities, recreational and aesthetic resources, and cultural resources), and with respect to any noted engineering or construction challenges (transportation, existing utility corridors, other existing infrastructure, and the Mississippi River crossings).

From that analysis, the Routing Team recommended a combination of Alternative Routes B and D as the Proposed Route for the Project. This combination of Alternative Routes met the overall goal of minimizing impacts on the natural, human, and historic resources along the route, while best utilizing existing linear rights-of-way and avoiding non-standard design requirements.

Q. Please describe Alternative Route B.

A. Alternative Route B was selected in Segment 1. As shown in Section 6.2.1 to the Routing Study (Schedule TBG-1), Alternative Route B parallels a combination of gas pipelines, an existing electric transmission line, and parcel boundaries. Initial alignments cross the eastern floodplain of the Missouri River in Buchanan County and enter the rolling hills beyond along the pipeline. Approximately 3 miles beyond the eastern bluffs of the river, the route turns southeast adjacent to an existing transmission line to avoid residential development along the pipeline and the town of Agency in Buchanan County. The route continues due east from this point eventually joining the pipeline corridor. Alternative Route B has a range of benefits over other Alternatives. It has no residences located within 250 feet of the route centerline, avoids the residential congestion located farther east along the pipeline corridor, and avoids crossing through Agency. Alternative Route B has the least impact on forested areas (including forested riparian and riparian areas) and parallels existing linear infrastructure, thereby reducing fragmentation of potential habitat for the Indiana bat and northern long-eared bat. Alternative Route B also reduces the fragmentation of area land use, by locating the line adjacent to existing utility infrastructure.

Q. Please describe Alternative Route D.

A. Alternative Route D was selected in Segment 2. As shown in Section 6.2.2 to the Routing Study (Schedule TBG-1), Alternative Route D is aligned adjacent to existing linear utility infrastructure for a significant portion of its length, paralleling the Rockies Express/Keystone pipelines for 44.6 miles and existing electric transmission lines for another 10.3 miles. Although other Alternative Routes may parallel more existing linear infrastructure, Alternative Route D has the overall fewest residences within 250 and 500 feet, reducing impacts to landowners and residences in the area. Alternative Route D is 5 miles south of the Swan Lake National Wildlife Refuge in Chariton County, which is an important migratory bird area and wetland complex. In addition, Alternative Route D minimizes impacts to potential Indiana bat and northern long-eared bat habitat by crossing fewer acres of forested habitat. Because Alternative Route D parallels a large extent of existing linear infrastructure, new fragmentation of both habitat and land use will be reduced compared to other Alternative Routes.

Q. Does the Routing Study contain a description of the entire length of the Proposed Route?

A. Yes. A description of the Proposed Route is set forth in Figure 6-1 of Schedule TBG-1. Generally, the Proposed Route will begin at a crossing of the Missouri River south of St. Joseph, Missouri and cross though Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Monroe, and Ralls Counties to the proposed crossing location of the Mississippi River south of Saverton, Missouri in Ralls County. The intermediate converter station will be located in Ralls County in proximity to Ameren's Montgomery-

Maywood 345 kV transmission line which will facilitate the interconnection to the MISO market.

Q. Did the process of choosing the Proposed Route include compiling a list of all electric and telephone lines, railroad tracks and underground facilities in Missouri that the Project will cross?

A. Yes. During the comparison of Alternative Routes, the number of electric lines, pipelines, railroads and similar structures was compared across Alternative Routes. When the Proposed Route was selected, a list of such entities was prepared for each county crossed by the Proposed Route and is attached as Exhibit 3 to the Application.

Q. Given the process followed by the Routing Team, what is your final assessment of the Proposed Route for the Grain Belt Express Project?

The Proposed Route for the Project is a reasonable and sound route that was derived from a robust route selection process that integrates input from government agencies, local officials, and the general public into the route development, analysis, and selection process. Given the extensive nature of these efforts, I believe the Proposed Route best minimizes the overall effect of the Grain Belt Express transmission line on the natural and human environment while avoiding unreasonable and circuitous routes, unreasonable costs, and special design requirements.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood 345 kV Transmission Line	)	Case No. EA-2014-0207

AFFIDAVIT OF TIMOTHY B. GAUL

STATE OF City Wash D.C.)
) **ss**
COUNTY OF _____)

Timothy B. Gaul, being first duly sworn on his oath, states:

1. My name is Timothy B. Gaul. I am the Associate Vice President, Energy Services for the Louis Berger Group, Inc. ("Louis Berger").

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Grain Belt Express Clean Line, LLC consisting of 11 pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Timothy B. Gaul

Subscribed and sworn before me this 24th day of March, 2014.

Notary Public

My commission expires: _____

Gwendolen C. Ingraham
Notary Public, District of Columbia
My Commission Expires 9/30/2014