BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF BRIAN WALSH
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. State your name.

A. Brian Walsh.

Q. By who are you employed?

A. State of South Dakota.

Q. For what department do you work?

A. Department of Environment and Natural Resources – Ground Water Quality Program

Q. Please explain your role and duties within your department.

A. I am an Environmental Scientist III with the Ground Water Quality Program. My role is to provide technical expertise and departmental oversight while enforcing the applicable state laws and rules on projects impacting or having the potential to impact groundwater resources in South Dakota.

My duties include serving as the department's coordinator for hazardous material pipeline projects and staffing the South Dakota Underground Pipeline Task Force, administering the department's Underground Injection Control Class II program, preparing source water assessment reports, and overseeing the cleanup of regulated substance releases cases.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission.

Q. Were you involved in the Keystone XL permitting docket, HP09-001?

A. Yes.

Q. Did you file prefiled testimony in HP09-001?

A. Yes. (Exhibit___BW-1)

Q. Did you also provide testimony at the evidentiary hearing in HP09-001?

A. Yes.

Q. Have you reviewed the information filed in HP14-001?

A. Yes. I have reviewed the information in the docket relevant to my previous testimony.

Q. Have you reviewed the Final Supplemental Environmental Impact Statement (FSEIS) for the Keystone XL project?

A. Yes.

Q. On March 12, 2009 the DENR submitted comments on the scope of the Draft EIS to the U.S. Department of State. In addition, on May 20, 2011 the DENR submitted comments on the Supplemental Draft Environmental Impact Statement. Do you believe the DENR's comments were adequately addressed by the Department of State now that the FSEIS is available for review?

A. Yes. DENR's comments were adequately addressed in the FSEIS.

Q. In your opinion, do the FSEIS and conditions set forth in the PUC's Amended Final Decision and Order adequately address the protection of South Dakota's natural resources?

A. Yes. If the pipeline is constructed and operated as designed and in compliance with all applicable laws and regulations, permit conditions, and the recommendations of the FSEIS, risks to South Dakota's natural resources is minimized.

Q. Did any of TransCanada's amended conditions set forth in Exhibit C of this docket result in a change to your professional opinion on the project?

A. No.

Q. Has any information provided to the DENR or acquired by the DENR since the PUC's Amended Final Decision and Order issued on June 29, 2010 changed your opinion on the Keystone XL project?

A. No.

Q. Are there any conditions in the Amended Final Decision and Order, dated June 29, 2010, that you believe, at this time, that Keystone XL cannot continue to meet?

A. No.

Q. In your pre-filed testimony filed in docket HP09-001 you attested that the pipeline crosses geological and/or hydrological sensitive areas. Has the pipeline route changed to avoid those sensitive areas since the Amended Final Decision and Order was issued on June 29, 2010?

A. Yes. TransCanada has developed the Colome reroute which moved the proposed route so it no longer will intersect Colome's zone A source water protection area. With this change, the proposed pipeline route does not cross any zone A source water protection areas in South Dakota. However, the proposed pipeline route does cross other unconfined aquifers in South Dakota.

Q. If not, in your opinion, can the Applicant still mitigate the risks associated with crossing those sensitive areas?

A. Yes.

Q. If so, please explain.

A. If the pipeline is constructed and operated as designed and in compliance with all applicable laws and regulations, permit conditions, and the recommendations of the FSEIS the risk to these sensitive areas is minimized.

Q. Any other information of use to the commission or public with regards to the certification of the Applicant's permit?

A. No

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

KEYSTONE XL PROJECT
DOCKET HP09-001

PREFILED TESTIMONY OF BRIAN WALSH ON BEHALF OF THE COMMISSION STAFF SEPTEMBER 2009

BEFORE THE PUBLIC UTILITIES COMMISSION STATE OF SOUTH DAKOTA

PREFILED TESTIMONY OF BRIAN WALSH

Q. State your name.

A. Brian Walsh

Q. State your employer.

A. State of South Dakota

Q. Specify the department for which you work.

A. Department of Environment and Natural Resources – Ground Water Quality Program.

Q. Explain your role and duties within your department.

A. I am a Hydrology Specialist with the Ground Water Quality Program. My role is to provide technical leadership, departmental oversight, and enforce laws and rules on projects impacting or potentially impacting groundwater resources of the state.

Primary duties include serving as the lead, department-wide coordinator for hazardous material pipeline projects in South Dakota, serve as the lead staff for the South Dakota Underground Pipeline Task Force, serve as the Governor's appointee on the Interstate Oil and Gas Compact Commission / Federal Energy Regulatory Commission Pipeline Task Force, responsible for developing source water assessments and preparing source water assessment reports for the statewide Source Water Assessment and Protection Program, direct and oversee the Pierre VOC assessment and remediation project, and serve as the lead project officer for multiple regulated substance release cases.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. What is your involvement with TransCanada Keystone XL?

A. I am the department's project coordinator for the TransCanada Keystone XL project. I am responsible for maintaining a thorough knowledge of the project, representing the department at project meetings, serving as the primary department contact for the project, responding to data requests from TransCanada and their contractors, responding to public inquires about the project, and coordinating department wide review and response to project documents (i.e., the Environmental Impact Statement).

Q. Did you provide comments during the EIS preparation process?

A. Yes, however, the EIS process is still ongoing. To date, the department has provided comments on the scope of the Draft EIS to the U.S. Department of State. When the Draft EIS is available, I will review the document, coordinate the department's response, and provide comment as needed.

Q. Tell about those comments.

A. On March 12, 2009 I submitted the department's comments on the scope of the Draft EIS to the U.S. Department of State (Attachment A). These comments are general in nature and cover items the department thinks should be addressed as part of the EIS.

Q. Do you believe those comments were adequately addressed in the EIS process?

A. I will not be able to determine if the comments were adequately addressed until the Draft EIS is available and the department reviews it.

Q. Did TransCanada or their consultants contact you for information?

A. Yes.

Q. If yes, what kind of information?

A. Information I provided to TransCanada's consultants included:

- GIS shapefiles showing Zone A source water protection areas located within 5-miles of the proposed centerline.
- Electronic copies of source water assessment reports for specific public water supply systems requested by TransCanada's consultants.
- Electronic copies of South Dakota Geological Survey Special Report 48 "Ground-Water Investigation for the City of Colome, South Dakota" and South Dakota Geological Survey Open-File Report 69-UR "Investigation of Ground-Water Resources for the Tripp County Water User District".
- GIS shapefiles showing Zone B source water protection areas located within 5-miles of the proposed centerline.
- Written descriptions of the nearest Zone B source water protection areas located downstream of major river crossings along the proposed route.
- GIS shapefiles showing the locations and availability of driller's logs for groundwater wells within 5-miles of the proposed centerline.
- Copies of driller's logs for specific wells, requested by TransCanada's consultant, located along the proposed route.
- GIS shapefiles showing the location of availability of driller's logs for groundwater wells less than 50 feet deep within 5-miles of the proposed centerline.
- GIS shapefiles showing the location of groundwater wells with water rights permits completed in unconfined aquifers located within 5-miles of the proposed centerline.
- The contact information for the South Dakota State Geologist, Derric Iles.
- The contact information for the department staff who work on TMDL issues.

Q. How many meetings have you had with TransCanada and/or their consultants?

A. Ten. In addition, I have had significant email communication and several conversations via telephone with TransCanada's consultants.

Q. What was the nature of each of those meetings?

A.

- May 21, 2008 – TransCanada's representatives came to Pierre to introduce the project to interested state agencies.
- June 23 – 30, 2008 – Attended a series of five public meetings hosted by TransCanada to provide project information to the public. Meetings were located in towns along the proposed pipeline route.
- January 14, 2009 – Attended an informational meeting for South Dakota Legislators in Pierre hosted by TransCanada's representatives.
- April 27 – 28, 2009 – Attended three public meetings hosted by the South Dakota Public Utilities Commission. Meeting locations are Winner, Philip, and Buffalo. At each meeting, TransCanada representatives presented information about the project and answered questions from the public.
- The email and telephone communications predominately concerned the information requests described in section 10 of my testimony.

Q. When would your agency have jurisdiction over Keystone XL?

A. The department would have regulatory authority over the proposed pipeline under the following circumstances.

- **Temporary Water Right Permit** – required for all water uses except reasonable domestic use. TransCanada would need a temporary water right permit to acquire water to hydrostatically test the proposed pipeline.

- **Surface Water Discharge Permits**

    1. Temporary Discharge Permit – required for any point source discharge to waters of the state. TransCanada would need a temporary discharge permit if hydrostatic test waters or construction dewatering waters are discharged to surface waters of the state.
    2. Storm Water Construction Permit – Oil pipelines are typically exempt from these permitting requirements. However, the state's surface water quality standards for suspended solids still apply. If the construction of the pipeline causes or contributes to violations of the surface water quality standards, the department could require TransCanada to obtain a permit.

- **Title V Air Quality Operating Permit** – These regulations would only apply if TransCanada installs backup generators at their pump stations that are required to meet 40 CFR Part 60, Subpart IIII.
- **Underground and Aboveground Storage Tanks** – any tank used to store petroleum or other hazardous regulated substance must comply with the state tank requirements. These requirements may apply if TransCanada uses tanks to store petroleum products during construction or if they have petroleum storage tanks at their pump stations.
- **Oil Spill Response Plan** – each crude oil pipeline operator issued a permit from the South Dakota Public Utilities Commission under the Energy Conversion and Transmission Facilities Act shall prepare an oil spill response plan. The pipeline operator must submit the plan to the

department prior to putting the pipeline in operation and is not effective without departmental approval.

- **Regulated Substance Release** – In the event of a regulated substance release during construction or operation of the pipeline, the department would have regulatory authority over the cleanup of the release. This authority includes the ability to take enforcement action against the responsible party and the ability to enforce the department's soil, groundwater, and surface water standards.

Q. Does this pipeline place any additional burden on your program?

A. No.

Q. Are there any geological and/or hydrological sensitive areas crossed by the Keystone XL pipeline?

A. Yes.

Q. Please briefly summarize each.

A. As of July 2008, the proposed pipeline route intersected the city of Colome's zone A, source water protection area in Tripp County. The city currently purchases its permanent water supply from the Tripp County Water Users District. The source water area intersected by the proposed pipeline is for the city's emergency back-up wells. These wells are approximately 55 feet deep and are completed in the unconfined, High Plains aquifer.

The proposed pipeline does cross other, unconfined aquifers in South Dakota. For additional information on these aquifers, I defer to the testimony of the State Geologist, Derric Iles.

Q. Can the Applicant mitigate the risks associated with crossing those sensitive areas?

A. Yes.

Q. If so, please explain.

A. TransCanada can mitigate the risk associated with crossing the city of Colome's source water protection area by rerouting the pipeline to avoid the source water protection area.

Based on my review of TransCanada's application to the PUC, they have developed an alternative pipeline route (the Colome reroute) routing the pipeline around the city's source water area. To reduce the risk to the city's emergency back-up drinking water wells I recommend TransCanada incorporate the Colome reroute into the final pipeline route.

Concerning mitigation efforts for the other, unconfined aquifers crossed by the proposed pipeline, I defer to the testimony of the State Geologist, Derric Iles.

Q. Any other information of use to the commission or the public.

A. In March 2009, through a landowner email to the Governor's office, I became aware of a landowner concern about a proposed pump station in Jones County located approximately 600 feet from their house. Their primary concern was noise pollution from the electric pumps at the pump station. In this case, the landowner built the house after TransCanada selected the pump station location. To help address the landowner's concern I contacted TransCanada representatives to make sure they were aware of the situation and to see what could be done to alleviate the landowners concern. TransCanada informed me they were aware of the situation and would design the pump station to minimize operational noise. In addition, TransCanada was evaluating alternative sites for the proposed pump station that would be further away from the house. During a June 5, 2009 phone conversation, Brett Koenecke (TransCanada representative) informed me the pump station had been relocated and the issue has been resolved.

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES
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March 12, 2009

Elizabeth Orlando
OES/ENV Room 2657
U.S. Department of State
Washington, DC 20520

Subject: South Dakota DENR Comments on the U.S. Department of State's Notice of Intent to Prepare an Environmental Impact Statement for the Keystone XL Project

Dear Ms. Orlando,

Enclosed for your review are the department's comments on the U.S. Department of State's Notice of Intent to Prepare an Environmental Impact Statement for TransCanada's proposed Keystone XL project. If you have any questions concerning these comments feel free to contact me at 605.773.3296 or brian.walsh@state.sd.us.

Sincerely,

Brian J. Walsh
Hydrology Specialist
Ground Water Quality Program

Enclosure (1)

cc: Kara Semmler, SD PUC, Pierre
Nathan Solem, SD PUC, Pierre

South Dakota Department of Environment and Natural Resources Comments on the U.S. Department of State's Notice of Intent to Prepare an Environmental Impact Statement and to Conduct Scoping Meetings

General

1. Please continue to include the department on the Department of State mailing list for the Keystone XL project. The department contact for this project is:

   Brian Walsh
   Hydrology Specialist
   SD DENR
   523 E. Capitol Ave.
   Pierre SD 57501
   605.773.3296
   605.773.6035 (fax)
   brian.walsh@state.sd.us

2. Please provide the department with one hard copy of the DRAFT Environmental Impact Statement (EIS) and one hard copy of the Final EIS for the Keystone XL project.

Water Resources

3. The Draft EIS needs to evaluate the potential impacts of the project on public and private drinking water sources near the proposed pipeline. The evaluation needs to address the potential impacts to private wells and the potential impacts to public water supply system's source water protection areas.

4. The Draft EIS needs to evaluate the potential impacts to groundwater quality and quantity near the proposed pipeline. Specifically, the evaluation needs to address this issue where the project crosses surficial aquifers such as the Hell Creek, Fox Hills, and Ogallala aquifers.

5. The Draft EIS, as part of its evaluation of potential impacts to perennial and intermittent water bodies, needs to consider the impacts of the proposed project on South Dakota's rivers, streams, impoundments, stream classifications and surface water quality standards.

Oil and Gas Industry

6. The Draft EIS, as part of its evaluation of the potential impacts to existing land uses, needs to evaluate the potential impacts to South Dakota's existing crude oil and natural gas pipeline infrastructure.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF DERRIC ILES
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. State your name.

A. Derric Iles.

Q. By who are you employed?

A. State of South Dakota.

Q. For what department do you work?

A. Department of Environment and Natural Resources.

Q. State the program for which you work?

A. Geological Survey Program.

Q. Please explain your role and duties within your department.

A. I plan and direct the activities of the Geological Survey Program to locate, describe, map, and evaluate the natural resources of South Dakota. I also provide scientific advice and expertise to the South Dakota Department of Environment and Natural Resources, other governmental agencies, consultants, and the public.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission.

Q. Were you involved in the Keystone XL permitting docket, HP09-001?

A. Yes.

Q. Did you file prefiled testimony in HP09-001?

A. Yes. (Exhibit____DI-1)

Q. Did you also provide testimony at the evidentiary hearing in HP09-001?

A. Yes.

Q. Have you thoroughly reviewed all of the information filed in HP14-001, including the route changes provided by TransCanada in response to question 10 of Staff's first interrogatory request?

A. I have reviewed all of the relevant information.

Q. Have you reviewed the Final Supplemental Environmental Impact Statement (FSEIS) for the Keystone XL project?

A. I have reviewed the relevant portions of the FSEIS.

Q. Do the route changes or information provided in the FSEIS result in a need to modify your original testimony filed in PUC Docket HP09-001?

A. No.

Q. Based on your review of the route changes, FSEIS, and amended conditions in Exhibit C of this docket, is it your opinion that the Applicant can still mitigate the risks associated with crossing the geologically and hydrologically sensitive areas?

A. Yes

Q. Based on your review of the FSEIS, amended permit conditions provided in this docket, and route changes, has your opinion on the Keystone XL project changed since your original testimony filed in PUC docket HP09-001?

A. No

Q. Are there any conditions in the Amended Final Decision and Order, dated June 29, 2010, that you believe, at this time, that Keystone XL cannot continue to meet?

A. No

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

KEYSTONE XL PROJECT
DOCKET HP09-001

PREFILED TESTIMONY OF DERRIC ILES
ON BEHALF OF THE COMMISSION STAFF
SEPTEMBER 2009

BEFORE THE PUBLIC UTILITIES COMMISSION STATE OF SOUTH DAKOTA

PREFILED TESTIMONY OF DERRIC ILES

Q. State your name.

A. Derric Iles.

Q. State your employer.

A. State of South Dakota, Department of Environment and Natural Resources.

Q. State the program for which you work.

A. Geological Survey Program.

Q. State the program roles and your specific job with the department.

A. The mission statement of the Geological Survey Program concisely describes the role of the Geological Survey Program. That mission statement is provided below.

To conduct geologic studies, hydrologic studies, and research; and to collect, correlate, preserve, interpret, and disseminate information, leading to a better understanding of the geology and hydrology of South Dakota. Special emphasis is placed on ground-water quantity and quality and other natural resources of economic value. The Survey has no regulatory authority; instead, it provides information and interpretations on natural resources and related issues, and assists agencies and individuals in making well-informed decisions.

I am the State Geologist and Administrator of the Geological Survey Program. In that capacity, I plan, organize, and direct the activities of the Geological Survey Program. I administer the activities conducted by Program employees who use their technical and scientific expertise to locate, describe, map, and evaluate the natural resources of South Dakota. I also provide advice and expertise to the South Dakota Department of Environment and Natural Resources, other governmental agencies, consultants, and the public.

Q. Explain the range of duties you perform.

A. My duties include the following.

- Collection and analysis of data.
- Preparation and review of technical reports and maps.
- Coordination and implementation of projects and contracts related to the Geological Survey Program.
- Providing technical advice to DENR's regulatory Programs, upon request, related to permit applications or appeals.
- Providing advice and guidance to Geological Survey personnel and to entities and individuals external to the Geological Survey.
- Providing work direction to Geological Survey personnel.
- Planning of long-range Geological Survey Program activities.
- Securing the cooperation and coordination of external individuals and entities for the betterment of activities performed by Geological Survey personnel.
- Tracking agency performance and maintaining acceptable progress and productivity.
- Maintaining an adequate inventory of supplies and parts needed for the day-to-day operations of the Geological Survey Program.
- Assessment of the need for purchase of capital assets necessary to maintain productivity and to meet expected project demands.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. Are there any geological and/or hydrological sensitive areas crossed by the Keystone XL pipeline?

A. Yes.

Q. Please briefly summarize each.

A. Geologically Sensitive Area – Paleontological Resources

Page 37 of the permit application refers to the fossil (paleontological resource) potential of two geologic units: the Ludlow Formation of the Fort Union Group and the Hell Creek Formation. I concur with statements in the application indicating that there is high potential for encountering fossil resources in these two geologic units, however; only a small length of the proposed pipeline route in South Dakota is directly underlain by the Ludlow Formation. The permit application also refers to the Fox Hills Sandstone and the Pierre Shale as having potential for containing fossils. I concur with this as well. Additionally, there is the possibility that fossils could be encountered in other geologic units along the proposed pipeline route. For example, the Valentine Formation of the Ogallala Group is known to have vertebrate fossils. There is no way to know the locations of all fossil resources in advance of construction activities.

Hydrologically Sensitive Area – Surface Water

Drainages containing a surface flow of water are hydrologically sensitive. The permit application states on page 44 that "A total of 12 perennial streams and rivers, 109 intermittent streams, and 182 ephemeral streams will be crossed in South Dakota during the construction of the Project." Flowing surface water would have the potential to carry sediment disturbed during construction in a downstream direction.

Hydrologically Sensitive Area – Ground Water

The area comprised by sediments of the High Plains aquifer is hydrologically sensitive. This aquifer is mentioned on page 46 of the permit application and, along the proposed pipeline route, occurs only in Tripp County. I examined the records of 21 wells that have locations near and along the proposed pipeline route in the area of Tripp County that contains the High Plains aquifer. These well records were obtained from a database maintained by the Water Rights Program, Department of Environment and Natural

Resources. These records indicate sand or sandy sediments beginning at depths from land surface ranging from 0 to 11 feet and extending to depths ranging from 16 to 55 feet. The static water levels listed in those records ranged from 4 to 25 feet below land surface. These thicknesses of sand or sandy sediment and static water levels along the proposed pipeline route are consistent with a 2004 South Dakota Geological Survey publication titled "Hydrogeologic Assessment of the High Plains Aquifer in Tripp and Gregory Counties, South Dakota" that shows the saturated thickness of the aquifer along the proposed pipeline route to be less than 50 feet. The High Plains aquifer sediments along the proposed pipeline route occur at or very near land surface, have a shallow depth to water (the water table in this case), and are generally permeable. The quality of water in the High Plains aquifer, such as the water distributed by the Tripp County Water User District, is often very good.

A comparison of the proposed pipeline route with the surface geology shown on the Geologic Map of South Dakota (published in 2004 by the South Dakota Geological Survey) shows that the proposed pipeline route crosses the following ten geologic units (listed in alphabetical order):

- Alluvium
- Eolian deposits (part of the High Plains aquifer where in contact with Ogallala Group)
- Fox Hills Sandstone
- Hell Creek Formation
- Ludlow Formation of the Fort Union Group
- Ogallala Group (part of the High Plains aquifer)
- Pierre Shale
- Terrace deposits (part of the High Plains aquifer where in contact with Ogallala Group)

- Tongue River Formation of the Fort Union Group
- White River Group (part of the High Plains aquifer)

The four geologic units crossed by the most miles of the proposed pipeline route, in order from most to fewest miles, are the Pierre Shale, the Hell Creek Formation, Terrace deposits, and the Fox Hills Sandstone. Approximately 65 percent of the proposed pipeline route in South Dakota is directly underlain by the Pierre Shale or the Hell Creek Formation.

The descriptions provided on the Geologic Map of South Dakota for the ten geologic units listed above indicate that all of the units contain portions which would be considered permeable. Examples of the descriptive words or phrases to which I refer in the unit descriptions are silty sandstone, clay- to boulder-sized clasts, sandstone and pebble conglomerate, cross-bedded sandstone, silt to medium-grained sand, sandstone, conglomerate, and gravel. Detailed geologic maps are not available to determine whether these particular portions of the geologic units, and to what extent these portions, may be present along the proposed pipeline route. These more permeable portions may be a minor component of a given geologic unit or may be totally absent in a particular area. For example, the Pierre Shale which underlies more of the proposed pipeline route than any of the other geologic units is not generally considered an aquifer but its description on the Geologic Map of South Dakota states that it contains "minor sandstone." Thus, there is a possibility that some portions of geologic units crossed by the pipeline, combined with the presence of a shallow water table, could be interpreted as a hydrologically sensitive area; especially if a user of the shallow ground water is located in a down-gradient direction where it could be reasonably expected that an impact might be observed from activities related to the pipeline.

Q. **Can the Applicant mitigate the risks associated with crossing those sensitive areas?**

A. Yes.

If so, please explain

Geologically Sensitive Area – Paleontological Resources

If paleontological resources are encountered on lands under the jurisdiction of the Office of School and Public Lands, South Dakota Codified Law 5-1-20 requires that "Any person who discovers any scientifically significant paleontological resources on lands under the jurisdiction of the commissioner of school and public lands shall promptly report the discovery to the commissioner." Such paleontological resources are the property of the state and their disposition is controlled by the state.

If paleontological resources are encountered on private land, it is my understanding that the land owner is the owner of the paleontological resource. In this situation, it is my recommendation that landowners consult with staff at the Museum of Geology at the South Dakota School of Mines and Technology regarding the documentation, handling, and disposition of the paleontological resource.

Hydrologically Sensitive Area – Surface Water

The water-crossing-construction methods to be used in pipeline construction are outlined on pages 44 through 46 of the permit application. The permit application indicates forethought of how to mitigate impacts to the environment during construction, a willingness to comply with permit requirements that may be imposed during construction, and a willingness to utilize best management practices aimed at minimizing soil erosion and sedimentation. If the applicant properly constructs, operates, inspects, and maintains the pipeline, it is my opinion that the risks can be adequately mitigated.

Hydrologically Sensitive Area – Ground Water

If the applicant properly constructs, operates, inspects, and maintains the pipeline, it is my opinion that the risks can be adequately mitigated.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF KIMBERLY MCINTOSH
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. State your name.

A. Kimberly McIntosh.

Q. By who are you employed?

A. State of South Dakota.

Q. For what department do you work?

A. Department of Environment and Natural Resources.

Q. State the program for which you work?

A. Ground Water Quality Program

Q. Please explain your role and duties within your department.

A. Senior Scientist Manager and team leader for the Spills Section of the Ground Water Quality Program. Oversee the enforcement of South Dakota's laws and rules related to spill and release reporting, assessment, and cleanup of regulated substance releases throughout the state. I manage the Regulated Substance Response Fund and oversee the state's response contractors that are under contract to respond to regulated substance releases. I manage the State's Brownfields Program which provides financial assistance for the assessment of abandoned contaminated sites. I act as the team leader overseeing the state's Emergency Planning and Community Right to Know Act (EPCRA) Program which collects chemical storage data from certain facilities in the state and provides information that information to local responders and planning committees. I am the department designated representative to the State's Homeland Security Task Force, and act as the department's emergency planning contact to work with the Office of Emergency Management and other state agencies in the event of a disaster. I am the Governor designated Regional Response Team Representative for

Region VIII with responsibilities to coordinate with Federal agencies in the event of a hazardous material incident or disaster that threatens human health or the environment.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission.

Q. Were you involved in the Keystone XL permitting docket, HP09-001?

A. Yes.

Q. Did you file prefiled testimony in HP09-001?

A. Yes. (Exhibit____KM-1)

Q. Did you also provide testimony at the evidentiary hearing in HP09-001?

A. Yes.

Q. Have you reviewed the information filed in HP14-001?

A. Yes.

Q. Have you reviewed the Final Supplemental Environmental Impact Statement (FSEIS) for the Keystone XL project?

A. Yes.

Q. Have you reviewed TransCanada's Spill Prevention Control and Countermeasure (SPCC) Plan and Emergency Response Plan (ERP), identified as Appendix I of the FSEIS?

A. Yes.

Q. In your opinion, do the SPCC Plan and ERP adequately identify that TransCanada has the appropriate resources available to respond to a spill should one occur?

A. Yes.

Q. Has your opinion on the Keystone XL project changed since the Amended Decision and Order was issued on June 29, 2010?

A. No.

Q. Are there any conditions in the Amended Final Decision and Order, dated June 29, 2010, that you believe, at this time, that Keystone XL cannot continue to meet?

A. No.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

KEYSTONE XL PROJECT
DOCKET HP09-001

PREFILED TESTIMONY OF KIMBERLY LORRENE MCINTOSH ON BEHALF OF THE COMMISSION STAFF SEPTEMBER 2009

BEFORE THE PUBLIC UTILITIES COMMISSION STATE OF SOUTH DAKOTA

PREFILED TESTIMONY OF KIMBERLY LORRENE MCINTOSH

Q. State your full name.

A. Kimberly Lorrene McIntosh.

Q. State your employer.

A. South Dakota Department of Environment and Natural Resources.

Q. Explain the specific program for which you work.

A. Ground Water Quality Program – Spill Assessment and Cleanup Section. The spill section is responsible for documenting all reported regulated substance releases: petroleum, chemical, pesticide, fertilizer, metals, etc. The spill section maintains the program files and the environmental events database which contains information on each reported release. This section investigates complaints and releases, obtains environmental samples, provides direction to responsible parties, environmental consultants and local officials on state laws and rules, and issues letters directing the assessment and cleanup of contamination. This section is responsible for the SARA (Superfund Amendment and Reauthorization Act) Title III Program which requires that chemicals stored in certain quantities be reported to the state. The spill section also is responsible for other projects such as emergency planning and response, methaphedimine issues, low level radiation issues, and homeland security issues.

Q. State what you do for this program.

A. I direct and oversee the staff in the spill section. I evaluate information and data to identify and name responsible parties. I direct environmental contractors and responsible parties on emergency response activities, assessment and cleanup activities associated with spills, releases and un-permitted discharges. I manage the State Regulated Substance Response Fund and the Environmental Livestock

Fund. I am responsible for the selection and hiring of contractors to be used in the event that a responsible party is unable to perform a cleanup or refuses to perform a cleanup and the Regulated Substance Response Funds are necessary to remedy a situation. I am responsible for evaluation of spills and releases to insure that the cleanup meets state requirements.

Q. Explain the range of activities and duties your program covers and what you specifically do for the program.

A. I review consultant reports detailing sampling of soil and ground water contamination associated with all types of spills and releases of regulated substances. I review and approve cleanup plans and act as the team leader, directing day to day work activity of the spill section. Activities included in the spill section include the Superfund Amendment and Reauthorization Action (SARA) Title III activities, department emergency response activities, homeland security activities, and state emergency and disaster planning activities. I also represent the state on the Regional Response Team acting as a state liaison with EPA, and other federal agencies in the event of a multi-state disaster.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. What federal and state standards exist for petroleum spills?

A. SDCL 34A-2, SDCL 34A-12, SDCL 34A-18 and ARSD Chapter 74:34:01, ARSD Chapter 74:54:01, ARSD Chapter 74:56:03, ARSD Chapter 74:56:05 and ARSD Chapter 74:10:05.

Q. Which of those standards do you personally work with?

A. All of the above.

Q. What level of cleanup is required in the case of a petroleum spill?

A. All petroleum spills are evaluated to determine what damage has occurred and what risk to human health and the environment exists based on the specifics of each release: substance released, amount released, location of release, depth to ground water, threat to surface water, threat to basements, water wells, or utilities, etc. The department has established cleanup criteria and standards in which each release is evaluated against to protect human health and the environment, so not all petroleum releases are cleaned up to the same level of contamination.

Q. Can there by hydrocarbon left in the soil after a cleanup?

A. Yes, petroleum contamination may be left in the soil after a cleanup if the department determined that the remaining contamination does not pose a risk to human health or further risk to the environment.

Q. What kind of remediation activities are conducted in response to a hydrocarbon spill in soil?

A. Excavation and off site disposal/treatment of impacted soil, excavation and onsite treatment of impacted soil and in-situ soil vapor extraction.

Q. What kind of remediation activities are conducted in response to a hydrocarbon spill in groundwater?

A. Excavation of impacted soil and soil venting may be conducted in conjunction with ground water sparging. Ground water monitoring is conducted to document ground water conditions.

Q. Explain other activities you use for remediation.

A. Soil can be excavated and incinerated to destroy hydrocarbons.

Q. What are the leak size requirements for a reportable spill?

A. SDCL 34A-12: A release or spill of a regulated substance (petroleum) must be reported to DENR immediately if any one of the following conditions exists:

1. The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water);
2. The discharge causes an immediate danger to human health or safety;
3. The discharge exceeds 25 gallons; (For crude oil see bullet #8)
4. The discharge causes a sheen on surface water;
5. The discharge of any substance that exceeds the ground water quality standards of ARSD chapter 74:54:01;
6. The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:54:01;
7. The discharge of any substance that harms or threatens to harm wildlife or aquatic life;
8. The discharge of crude oil in field activities under SDCL chapter 45-9 is greater than 1 barrel (42 gallons).

Q. Has there been any permanent natural resource damage in South Dakota as the result of a hydrocarbon pipeline leak?

A. I am not aware of any permanent natural resource damage from a petroleum pipeline release.

Q. Are there spills that cannot be remediated?

A. I do not believe there are any petroleum spills that can not be remediated given sufficient time and resources.

Q. Who is obligated to remediate a spill?

A. SDCL 34A-12 identifies that the person or persons who caused the release are responsible to assess and cleanup the contamination. SDCL 34A-18-8 identifies that each crude oil pipeline operator must implement their response plan regardless of the cause of the party responsible for the release.

Q. How do you remediate hydrocarbon contaminated wells?

A. It depends on the level of contamination present in the well and in the ground water. The water from a contaminated well can be treated with a carbon filter system that removes (strips) the hydrocarbons.

Q. What if you can't achieve remediation of a well?

A. The responsible party is required to supply the well owner/user with an alternate source of drinking water. This may require drilling a new well in a different location, drilling a deeper well in a deeper formation or hooking the well user up to rural or city water supply.

Q. What is the extent of landowner involvement in remediation?

A. It depends on the situation. Some landowners want to be involved in the cleanup but most allow the department to work with the responsible party to get the cleanup work performed to state standards. The department copies the land owner on all written correspondence with the responsible party and consultant. If the land owner wishes to be involved with the cleanup, meetings may be held to address the concerns of the landowner and other interested parties. Copies of all documents can be provided if the land owner wishes to receive them.

Q. Does DENR have the resources to deal with a spill from a hydrocarbon pipeline such as Keystone XL?

A. The DENR has the resources necessary to oversee the assessment and cleanup of a crude oil release from existing crude oil pipelines and has the resources to oversee a release from the Keystone XL pipeline, if one should occur. The DENR manages a fund with sufficient resources to contain and initiate cleanup actions, if a release should occur, and the pipeline company is unable or refuses to perform the required response activities. Federal financial resources may also

be available if the responsible party refuses or is unable to perform the cleanup work.

Q. Does this pipeline place any additional burden on your program?

A. The Keystone XL pipeline does not place additional burden on the Ground Water Quality Program.

Q. Please explain the Regulated Substance Release Fund, the Superfund and/or any other program available to help fund a remediation project.

A. Please see Attachment 1. Attachment 1 is a copy of Appendix I from the "Findings Report" dated December 1, 2008 from the *South Dakota Underground Pipeline Task Force* report. This attachment is information on the South Dakota Regulated Substance Response Fund. This information was previously compiled and provided to the South Dakota Underground Pipeline Task Force.

Q. Is all of the information contained in Attachment 1 current?

A. No. The Department of Environment and Natural Resources currently has seven environmental contractors under contract. Tetra Tech, Rapid City, South Dakota, is also now under contract. Also, the balance of the Regulated Substance Response Fund as of 06/30/09 was $2,782,073.

Please also see Attachment 2. Attachment 2 is a copy of Appendix N from the "Findings Report" dated December 1, 2008 from the *South Dakota Underground Pipeline Task Force* report. This attachment is information on the federal Oil Spill Liability Trust Fund. This information was previously compiled and provided to the South Dakota Underground Pipeline Task Force.

Q. Any other information you believe the commission and the public will find useful.

A. The Ground Water Quality program has extensive staff experienced in overseeing the assessment and cleanup of all types of petroleum releases both in soils and ground water.

Appendix I

South Dakota Regulated Substance Response Fund

REGULATED SUBSTANCE RESPONSE FUND

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

CONTACTS:
Steve Pirner, Secretary
Tim Tollefsrud, Director

INTENT / USE / PURPOSE:

The money in the Regulated Substance Response Fund is continuously appropriated to provide funding for the clean up of regulated substance discharges. The Secretary of the Department of Environment and Natural Resources may expend funds from the response fund to provide for the costs of investigations, **emergency remedial efforts**, corrective actions, and managerial or administrative activities associated with such activities.

SUMMARY:

In 1988 SDCL: 34A-12-3 created the Regulated Substance Response Fund. The fund was created through an appropriation from general fund, a one-time contribution from the petroleum release compensation fund, and a temporary pesticide registration fee.

On going deposits into the fund come from; money from civil action or administrative proceedings for violation of environmental statutes or upon damage to the environment, including actions for administrative expense recoveries, civil penalties, compensatory damages, and money paid pursuant to any agreement, stipulation, or settlement in such actions or proceedings; and interest attributable to investment of the money in the response fund. Before the fund can be used, there must be a discharge of a regulated substance, but then the money is continuously appropriated to provide funds for the clean up of regulated substance discharges. The department may file civil actions or liens on property owned by the responsible person to cost recover.

REQUIREMENTS:

The Secretary of the Department of Environment and Natural Resources may expend funds from the response fund to provide for the costs of investigations, **emergency remedial efforts**, corrective actions, and managerial or administrative activities associated with discharges of regulated substances. For a substance to be classified as a regulated substance, it must be defined in either statute or rule. SDCL 34A-12-1 exempts sewage and sewage sludge from being classified as a regulated substance.

The secretary's use of the response fund shall be based upon the following:

(1) In the case of an investigation, when the secretary determines that a discharge requiring an emergency remedial effort may have occurred and that the general operating budget of the department for such purposes is not adequate to cover the costs of the necessary investigatory activities;

(2) In the case of an emergency remedial effort, when the secretary determines that a discharge has occurred and that corrective actions shall be immediately undertaken to protect an imminent threat to the public health or safety or to contain a discharge which, if not immediately contained, shall in time pose a significantly greater threat to public health or safety or to the environment of this state than if such action is not immediately taken;

(3) In the case of a discharge not of an emergency nature when the secretary determines that a discharge has occurred, that a responsible party or liability fund capable of performing the corrective actions either cannot be identified or refuses to undertake corrective actions, and that corrective actions shall be undertaken to protect the public health, safety, welfare, or environment of the state.

SDCL 34A-12-12 makes the responsible person strictly liable for any corrective action costs expended from the Regulated Substance Response Fund, and the department may file either civil actions or liens on property owned by responsible persons to cost recover.

STATUTES:

34A-12-3. Regulated substance response fund established - Purpose - Source of funds - Continuous appropriation - Informational budget - Annual legislative review -- There is hereby established in the state treasury an operating fund to be known as the regulated substance response fund for the purpose of providing funds for the clean up of regulated substance discharges. In addition to the money from the petroleum release cleanup fund as provided in § 34A-12-2 and the temporary pesticide registration fee increase provided by § 38-20A-9, funds from the following sources shall be deposited into the response fund:
(1) Direct appropriations to the response fund from the general fund;
(2) Money, other than criminal fines assessed in criminal actions, recovered by the state in any action or administrative proceeding based upon violation of the state's environmental statutes or upon damage to the environment, including actions for administrative expense recoveries, civil penalties, compensatory damages, and money paid pursuant to any agreement, stipulation, or settlement in such actions or proceedings;
(3) Interest attributable to investment of the money in the response fund;
(4) Money received by the department in the form of gifts, grants, reimbursements, or appropriations from any source intended to be used for the purposes of the response fund.
All money in the response fund is continuously appropriated for the purposes specified in § 34A-12-4. All money received by the department for the response fund shall be set forth in an informational budget pursuant to § 4-7-7.2 and be annually reviewed by the Legislature.
Source: SL 1988, ch 291, § 4.

34A-12-2. One-time contribution from petroleum release compensation fund to response fund - Annual contribution to groundwater protection fund -- The petroleum release compensation fund established pursuant to § 34A-13-18, shall make a one time contribution of three hundred fifty thousand dollars, to the response fund within one year after March 1, 1988, and shall contribute one hundred thousand dollars annually for five years to the groundwater protection fund to fund the groundwater research and education program established pursuant to § 46A-1-85. Source: SL 1988, ch 291, § 3; 1989, ch 306, § 55.

34A-12-4. Expenditure of funds by secretary - Grounds for expenditures -- When necessary in the performance of the secretary's duties under §§ 23A-27-25, 34A-1-39, 34A-2-75, 34A-6-1.4, 34A-6-1.31, 34A-11-9, 34A-11-10, 34A-11-12, 34A-11-14, 34A-12-1 to 34A-12-15, inclusive, 45-6B-70, 45-6C-45, 45-6D-60, and 45-9-68 and Title 34A relative to discharges, the secretary may expend funds from the response fund to provide for the costs of investigations, emergency remedial efforts, corrective actions , and managerial or administrative activities associated with such activities. The secretary's use of the response fund shall be based upon the following:

(1) In the case of an investigation, when the secretary determines that a discharge requiring an emergency remedial effort may have occurred and that the general operating budget of the department for such purposes is not adequate to cover the costs of the necessary investigatory activities;

(2) In the case of an emergency remedial effort, when the secretary determines that a discharge has occurred and that corrective actions shall be immediately undertaken to protect an imminent threat to the public health or safety or to contain a discharge which, if not immediately contained, shall in time pose a significantly greater threat to public health or safety or to the environment of this state than if such action is not immediately taken;

(3) In the case of a discharge not of an emergency nature when the secretary determines that a discharge has occurred, that a responsible party or liability fund capable of performing the corrective actions either cannot be identified or refuses to undertake corrective actions, and that corrective actions shall be undertaken to protect the public health, safety, welfare, or environment of the state. Source: SL 1988, ch 291, § 5; 1992, ch 158, § 55A; 1999, ch 182, § 3.

34A-12-12. Strict liability for costs of corrective action. Any person who has caused a discharge of a regulated substance in violation of § 34A-12-8 is strictly liable for the corrective action costs expended by the department pursuant to §§ 23A-27-25, 34A-1-39, 34A-12-1 to 34A-12-15, inclusive, 38-20A-9, 45-6B-70, 45-6C-45, 45-6D-60, and 45-9-68. Source: SL 1988, ch 291, § 13.

CURRENT STATUS

The Department of Environment and Natural Resources currently has six (6) contracts in place with environmental consulting firms to provide response capabilities. These contracts are 4 year contracts with extension provisions. Currently the department has contracts with the following firms: Geotek Engineering & Testing Services (Sioux Falls); Leggette, Brashears & Graham (Sioux Falls); Terracon Consultants (Rapid City and Omaha); West Central Environmental (Morris, Minnesota); BayWest (St. Paul, Minnesota); and American Engineering Testing Services (Pierre and Rapid City).

The balance of the Regulated Substance Response Fund as of 06/30/2008 was $ 2,575,500.00.

Appendix N

Federal Oil Spill Liability Trust Fund

The Oil Spill Liability Trust Fund

Introduction

The Oil Spill Liability Trust Fund (fund) was created by Congress in 1986 and its use was authorized by the signing of the Oil Pollution Act in 1990. The fund, managed by the U.S. Coast Guard, is established as a funding source to pay for cleanup costs and damages resulting from oil spills or threats of oil spills to navigable waters of the United States. For the purposes of this fund "navigable waters" is defined in § 300.5 of the National Contingency Plan.

The fund has two major components. First, the emergency fund. The emergency fund is available for Federal On-Scene Coordinators to respond to oil discharges and for Federal natural resource trustees to initiate natural resource damage assessments. This portion of the fund receives an annual $50 million apportionment. The Coast Guard has the authority to advance an additional $100 million into the emergency fund each year to supplement shortfalls. Second, the remaining Principal Fund balance is used to pay claims and to fund appropriations by Congress to Federal agencies to administer the provisions of the Oil Pollution Act and support research and development.

Who Can Access the Fund?

- All Federal On-Scene Coordinators
- Other Federal, State, Local, and Indian tribal government agencies that assist the Federal On-Scene Coordinator can be reimbursed for their costs.
- Natural Resource Trustees
- Claimants – individuals, corporations, and governments can submit claims for uncompensated removal costs and damages if the responsible party does not satisfy their claim.

Limitations to Accessing the Fund

- The release or threat of release must be into or on the navigable waters of the United States or adjoining shorelines or the Exclusive Economic Zone
- The discharge must be oil
- In general, the maximum amount expendable from the fund per incident is $1 billion.

Responsibility of the Responsible Party to a Spill

- When an oil spill occurs, the responsible party is responsible for complete cleanup of the spill.
- If the responsible party does not fully remove the spill and the Federal On-Scene Coordinator responds to the spill the responsible party will be later billed for all Federal response costs.

Funding

- The fund balance on April 27, 2006 was $662 million.
- As of March 18, 2008, the following is the projected end of year fund balance based on the barrel tax and historical expenditures:

  2008 - $1,030,009,455
  2009 - $1,107,363,831
  2010 - $1,227,242,256
  2011 - $1,345,434,782
  2012 - $1,468,866,674
  2013 - $1,601,770,189
  2014 - $1,744,565,195

EPA's Use of the Fund in South Dakota

In the early 1990's EPA used monies from the fund to cleanup a coal tar spill in the Big Sioux River at Fawick Park in Sioux Falls.

DRAFT
Revised 11 July 2005

USING THE OIL SPILL LIABILITY TRUST FUND

A Primer of Key Funding Eligibility Concepts and Procedures

These concepts are intended solely for the guidance of agency personnel. These concepts do not constitute a regulation and may not be relied upon to create a right or benefit, substantive or procedural, enforceable at law or in equity by any person. This document may change at any time, without prior notice.

July 11, 2005

DRAFT
Revised 11 July 2005

ACCESSING THE OIL SPILL LIABILITY TRUST FUND

DRAFT
Revised 11 July 2005

I. INTRODUCTION

The Coast Guard (CG) and the Environmental Protection Agency (EPA) are authorized under Section 311(c) of the Federal Water Pollution Control Act ("FWPCA") (as amended by the Oil Pollution Act of 1990), 33 U.S.C. § 1321(c), to remove a discharge, and to mitigate or prevent a substantial threat of a discharge, of oil to navigable waters or adjoining shorelines.[1/] A principal purpose of the Oil Pollution Act of 1990, P.L. 101-380 ("OPA") is to ensure that federal responders have the financial resources readily available to support an immediate and effective response. Those resources are provided by a $50 million annual appropriation from the Oil Spill Liability Trust Fund ("OSLTF") as outlined under OPA section 6002.[2/]

The three questions that must be answered to determine whether an oil response is authorized under Section 311(c) of the FWPCA are:

(1) Is the substance involved an oil?

(2) Is there a discharge or substantial threat of a discharge of oil?

(3) Is the discharge or substantial threat of discharge into navigable waters or adjoining shorelines?

If each of these elements is present, the Federal On-Scene Coordinator ("FOSC") is authorized to take oil response action under Section 311(c) of the FWPCA. Also, if each of these three elements is present, the OSLTF is available for use by the FOSC. Thus, it is important that each of these elements be documented by FOSCs when they access the OSLTF (or as soon thereafter as practical) so that the National Pollution Funds Center ("NPFC") can ensure that funds are being accessed appropriately.

This document provides funding eligibility guidance to FOSCs on these three threshold elements. In addition, guidance is provided on how to document these elements. Guidance is also provided on FOSC responsibilities with respect to documentation regarding the identification of responsible parties[3/]

[1/] Pursuant to Executive Order 12777, 56 Fed. Reg. 54757 (October 22, 1991), the President's authority under Section 311(c) of the FWPCA has been delegated to EPA for the inland zone and the Secretary of the Department in which the Coast Guard is operating for the coastal zone. The authority to remove a discharge, and to mitigate or prevent a substantial threat of a discharge, of oil extends not only to navigable waters and adjoining shorelines, but also to the waters of the exclusive economic zone and to discharges or substantial threats of discharges of oil "that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States." 33 U.S.C. §1321(c). Simply for ease of reference, the remainder of the guidance refers solely to "navigable waters or adjoining shorelines," but is not to be construed as any limitation on the full scope of authority available under Section 311(c) of the FWPCA.

[2/] Section 7 of Executive Order 12777 delegates authority for management of the Oil Spill Liability Trust Fund to the Secretary of the Department in which the Coast Guard is operating, and this authority is exercised within the Coast Guard by the National Pollution Funds Center.

[3/] FOSCs also have responsibilities with respect to the documentation of removal costs. Guidance this topic may be found in the NPFC User Reference Guide.

II. THE FOSC HAS BROAD REMOVAL AUTHORITY

A fundamental public policy underlying the FWPCA is that there shall be no discharge of oil to navigable water or adjoining shorelines. 33 USC 1321(b)(1). Consistent with that policy the President may, in accordance with the National Contingency Plan (NCP), ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial threat of discharge, of oil to navigable waters and adjoining shorelines. 33 USC 1321(c)(1). As noted above, the President's removal authority has been delegated to the Coast Guard for the coastal zone and to the Environmental Protection Agency for the inland zone. These authorities are also established in the NCP. See, e.g., 40 C.F.R. §§300.120(a) and 300.130. The OSLTF is available to pay the costs of federal oil removal. 33 USC 1321(s); 33 USC 2712(a)(1); 33 USC 2752(b).

"Remove or Removal" is defined as "containment and removal of the oil...from the water and shorelines or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare, including, but not limited to, fish, shellfish, wildlife, and public and private property, shorelines, and beaches." 33 USC 1321(a)(8).

"Removal costs" are the "costs of removal that are incurred after a discharge of oil has occurred or, in any case in which there is a substantial threat of a discharge of oil, the costs to prevent, minimize or mitigate oil pollution from such an incident." 33 U.S.C. 2701(31).

When there is a discharge or substantial threat of discharge of oil to navigable waters or adjoining shorelines, the FOSC determines the response actions appropriate under the NCP. The FOSC has broad authority to remove or arrange for the removal of a discharge and to mitigate or prevent a substantial threat of a discharge, and to direct or monitor all federal, state and private actions to remove a discharge or to mitigate or prevent a substantial threat of a discharge. 33 U.S.C. §1321(c); 40 C.F.R §§ 300.130 and 300.305(d). Containment, countermeasures and cleanup of the oil include a wide range of activities including controlling the source of a spill. 40 C.F.R. 300.310(a).

Removal authority should be construed broadly to achieve the policy enunciated by Congress – that there shall be no discharge of oil to navigable waters. The NCP recognizes that removal authority necessarily includes authority to address a discharge at its source, consistent with the no discharge policy. 40 C.F.R. 300.310(a). However, once the discharge to the water is stopped, the oil is removed from the navigable waters and shorelines, and all steps have been completed to prevent, minimize or mitigate any substantial threat of discharge to the water, NPFC removal funding typically ends.

The NPFC is responsible for making funds available for removal, but does not exercise oil removal authority under the FWPCA. Amounts appropriated annually from the OSLTF are made available by the NPFC to CG or EPA FOSCs for oil removal projects that are authorized under FWPCA 311(c) and consistent with the NCP. The NPFC has a fiduciary responsibility to ensure proper use of the OSLTF. Therefore, availability of funding is subject to NPFC policies and guidelines. In cases where it is unclear that the three FWPCA threshold elements have been met, the NPFC will work with the FOSC to ensure that the OSLTF will be used appropriately.

III. THRESHOLD ELEMENTS AND DOCUMENTATION REQUIREMENTS

A. Is it Oil?

1. FWPCA and OPA definitions of "oil"

Section 311(a) of the FWPCA defines "oil" as "oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." 33 U.S.C. § 1321(a)(1). OPA Title I, 33 U.S.C. §§2701-2720 creates a liability and compensation regime for oil discharges that is complementary to the provisions of Section 311 of the FWPCA. OPA Title I adopts the FWPCA definition of oil but adds an express exclusion for "any substance which is specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601) and which is subject to the provisions of that Act." 33 U.S.C. §2701(23). Thus, FWPCA oils are also OPA Title I oils except for any FWPCA oil that is specifically listed or designated as a CERCLA hazardous substance. See CERCLA Table of Hazardous Substances at 40 C.F.R. 302.4.

2. NPFC Policy on OSLTF Funding with Respect to Certain Substances

As a matter of policy, the NPFC and EPA have agreed that the NPFC will not generally provide funding from the OSLTF for responses with respect to the substances identified below, for which funding is generally available from the Hazardous Substance Superfund established under CERCLA.

a. Hexane. Hexane is specifically listed as a CERCLA hazardous substance. As a matter of policy, the NPFC will not generally provide funding from the OSLTF for response to the discharge or substantial threat of a discharge of hexane. FOSCs that are contemplating accessing the OSLTF to fund removal activities in response to the discharge or substantial threat of discharge of hexane should consult with their NPFC Regional Manager prior to accessing the OSLTF.

b. Creosote. Creosote is not widely used today, but historically was widely used as a wood preservative by wood treatment facilities. Creosote is specifically listed as a CERCLA hazardous substance. As a matter of policy, the NPFC will not generally provide funding from the OSLTF for responses to the discharge or substantial threat of a discharge of creosote. FOSCs that are contemplating accessing the OSLTF to fund removal activities in response to the discharge or a substantial threat of discharge of creosote-related contaminants should consult with their NPFC Regional Manager prior to accessing the OSLTF.

c. "Coal Tar" Wastes From Former Manufactured Gas Plants (MGPs). The term "coal tar" is often loosely used to refer to several types of substances derived from the distillation of coal, some of which are products, or by-products, and others which are wastes. With respect to funding, responses to discharges of "coal tar" wastes from former Manufactured Gas Plants ("MGPs") that contain constituents that are hazardous substances under CERCLA have typically been funded from the Hazardous Substance Superfund. As a matter of policy, the NPFC will not generally provide funding from the OSLTF for responses to the discharge or substantial threat of a discharge of "coal tar" wastes from MGPs. FOSCs that are contemplating accessing the OSLTF to fund removal activities in response to the discharge or substantial threat of discharge of "coal tar" wastes from a MGP should consult with their NPFC Regional Manager prior to accessing the OSLTF.

3. Natural Gas

Natural gas is not an oil. Response to a discharge or substantial threat of discharge of natural gas is not an oil response under FWPCA and is not funded from the OSLTF. However, oil may be present in some amounts when there is a natural gas incident, such as a leak, fire, or explosion from certain natural gas wells. Such oil may discharge to navigable waters or adjoining shorelines or there may be a substantial threat of such a discharge. Therefore, while a response to a natural gas incident will in general not be a response under the FWPCA for which OSLTF funding is available, FOSC response to the discharge of oil to navigable waters or adjoining shorelines, or the substantial threat of such a discharge, may be funded from the OSLTF. When confronted with a natural gas incident, FOSCs should explain and document how the response for which OSLTF funding will be used is for the primary purpose of removing a discharge of oil to navigable waters, or adjoining shorelines or mitigating or preventing the substantial threat of such a discharge.

4. Tire Fires

Oil may be produced in some amounts when there is a tire fire. Such oil may discharge to navigable waters or adjoining shorelines or there may be a substantial threat of such a discharge. Therefore, while a response to a tire fire in general will not be a response under the FWPCA for which OSLTF funding is available, FOSC response to the discharge of oil to navigable waters or adjoining shorelines, or the substantial threat of such a discharge, may be funded from the OSLTF. When confronted with a tire fire incident, FOSCs should explain and document how the response for which OSLTF funding will be used is for the primary purpose of removing a discharge of oil to navigable waters, or adjoining shorelines or mitigating or preventing the substantial threat of such a discharge.

5. Responses Potentially Involving Both FWPCA Oil and a CERCLA Hazardous Substance

a. The CERCLA "Petroleum Exclusion". The CERCLA definition of "hazardous substances" does not include, "petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of [section 101(14)] and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas)." 42 U.S.C. §9601(14).

EPA has interpreted the petroleum exclusion to only apply to: crude oil that naturally contains hazardous substances; and refined product containing hazardous substances or constituents that normally are added during the refining process. See Memorandum from Francis S. Blake, General Counsel, "Scope of the CERCLA Petroleum Exclusion Under Sections 101(14) and 104(a)(2)," July 31, 1987. Hazardous substances that are added to petroleum during use, or increased in concentration as a result of use, are not subject to the petroleum exclusion and are subject to regulation under CERCLA. Courts generally have accepted this interpretation.

If the facts and circumstances indicate that the CERCLA petroleum exclusion is not applicable to substances subject to the response action, the FOSC should closely coordinate with the NPFC and EPA Headquarters regarding funding.

b. Mixes of Oil and Hazardous Substances. When a discharge to navigable waters or adjoining shorelines is discovered or reported, the FOSC must be able to make a swift, field decision about whether the discharging material is oil, a hazardous substance, or a mix or combination of both in order to determine response authority and funding. These field determinations will take into account any readily available information from the RP or other informed source (e.g., state or local agencies). If the circumstances indicate that the substance is likely to be a mix or combination of oil and a specifically listed or designated CERCLA hazardous substance, the FOSC should closely coordinate with the NPFC and EPA Headquarters before funding is provided.

Even after deciding to conduct an oil response under the FWPCA and accessing the OSLTF, the FOSC should test the substance as soon as practical in order to confirm the nature of the substance. If the source of the discharge is not known, testing of the substance may also be useful in identifying the source and the responsible party for the source.

If, during a removal funded from the OSLTF, it is determined that the substance discharging or substantially threatening to discharge to protected waters or shorelines is a specifically listed or designated CERCLA hazardous substance, NPFC policy is that generally OSLTF funding should end. At that point, as appropriate, the FOSC may decide to seek funding from the CERCLA Superfund. In such circumstances, the NPFC and EPA should work together to facilitate a smooth transition of funding sources.

If an incident includes a distinct discharge or substantial threat of discharge of an oil and a distinct release or substantial threat of release of a CERCLA hazardous substance, and there are distinct response actions directed to each, those distinct response actions directed to the discharge or substantial threat of discharge of oil generally should be funded from the OSLTF, and those distinct activities directed to the CERCLA hazardous substances generally should be funded from CERCLA's Superfund.

B. Is there a Discharge or Substantial Threat of a Discharge?

If there is oil in or on the navigable water or adjoining shorelines, there has been an actual discharge that clearly satisfies this threshold element. This element is also satisfied if there is a substantial threat of a discharge of oil to navigable waters or adjoining shorelines.

DRAFT
Revised 11 July 2005

1. FOSC and NPFC roles

The FOSC, in exercise of his/her FWPCA oil response authority, determines the existence of a discharge or a substantial threat of a discharge of oil to navigable waters or adjoining shorelines. The FOSC also determines what action is needed to ensure the substantial threat of a discharge to protected waters and shorelines is mitigated or prevented. The NPFC does not exercise oil removal authority under FWPCA, but is responsible for making funds available for response actions authorized under 33 USC §1321 and consistent with the NCP to ensure the substantial threat of a discharge of oil to navigable waters or adjoining shorelines is mitigated or prevented. NPFC has a fiduciary responsibility to ensure proper use of the OSLTF and therefore will work with the FOSC to ensure that the OSLTF will be used appropriately.

To that end, the FOSC and the NPFC Case Officer should initiate a dialogue at the beginning of a response to a substantial threat of a discharge. These discussions help provide the NPFC with a full understanding of the FOSC's determination that a substantial threat of a discharge exists and help facilitate funding.

2. Substantial Threat

The OSLTF may be used when the FOSC responds under authority of FWPCA section 311(c) to prevent or mitigate a substantial threat of a discharge of oil to the navigable waters or adjoining shorelines. In making the determination that circumstances present a substantial threat of a discharge of oil to navigable waters or adjoining shorelines the FOSC should consider relevant factors in the context of the overall situation, including the following:

a. The source of the oil, the condition of the source including any environmental factors or weather which may change the condition of the source, and if the source is functioning in some way to contain the oil in whole or in part, facts relevant to an evaluation of the integrity of that containment mechanism and predicted or potential failures of that containment mechanism;

b. The proximity of the oil source to navigable waters or adjoining shorelines, the quantity of oil, any relevant available information regarding the nature of the oil, and the flow path from the oil source to the navigable waters, including slope, terrain, natural or manufactured conduits or drains, the absence of effective natural or manmade barriers between the source and the navigable waters, any environmental factors or weather conditions that may affect movement of the oil, and any other available information relevant to the potential movement of the oil from the source to the navigable waters;

c. Whether under all the facts and circumstances response action should be undertaken in order to prevent a discharge of oil to navigable waters or adjoining shorelines.

3. Documentation for Substantial Threat Incidents

FOSCs are to document the facts and circumstances relied upon in making the "substantial threat" determinations to the NPFC in order to memorialize the basis for the exercise of removal authority. Summary documentation should be provided in the initial POLREP, and detailed documentation should be provided as soon as practical. All documentation should reflect consideration of the relevant factors, as discussed above, and the basis for the determination that the circumstances present a substantial threat of a discharge of oil to the navigable waters or adjoining shorelines

Documentation of the "substantial threat" determination is important since the OSLTF is not available for response when an oil source has merely a remote potential to discharge oil "someday". Thus, provision of adequate documentation is a predicate to OSLTF funding. Even after OSLTF funding is made available, if additional relevant information becomes available, it is the FOSC's responsibility to provide that additional information and documentation to the NPFC, and to respond to NPFC's requests for additional information. In addition to its funding responsibilities, this documentation is also used by NPFC in support of other responsibilities that the NPFC fulfills, including the payment of claims under OPA, determination of liable responsible party debts, and to support enforcement actions necessary to recover removal costs from responsible parties

There are numerous ways an FOSC can document the factors considered and the basis for the decision that a specific situation presents a substantial threat of discharge, in support of their request for funding. Whatever methods are used, the FOSC should describe all of the relevant facts and circumstances, as discussed above, and include any available photographs. The following list provides several examples of the types of documentation that may be used for this purpose:

a. For Coast Guard-managed incidents: Operational logs or ICS forms such as the Incident Information Form, the Incident Briefing form (ICS 201), the Response Objectives form (ICS 202), the Unit Log (ICS 214) or the Executive Summary form (ICS Exec. Sum.);

b. For EPA managed incidents: the OPA90 Removal Project Plan (ORPP);

c. POLREPS;

d. E-mail to operational superiors and the NPFC;

e. A memorandum regarding the substantial threat determination; or

f. Administrative orders issued under FWPCA 311(c) to responsible parties.

Any of these or other similar methods of documentation may be used as long as the purpose is fulfilled, which is to document the FOSC's consideration of relevant factors and the basis for the determination that the circumstances present a substantial threat of a discharge of oil to the navigable waters or adjoining shorelines.

C. Is the Discharge or Substantial Threat of a Discharge into Navigable Waters?

Under the FWPCA, the term "navigable waters" is broadly defined as "the waters of the United States, including the territorial seas." 33 U.S.C. §1362(7).[4] Regulatory definitions of the term include, among other things, waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters that are subject to the ebb and flow of the tide (sometimes referred to as traditional navigable waters); interstate waters, including interstate wetlands; tributaries to traditional navigable waters; and wetlands that are adjacent to traditional navigable waters or their tributaries. See, e.g., 40 C.F.R. §300.5.

In January 2001, the Supreme Court held that use of isolated, non-navigable, intrastate waters by migratory birds was not a sufficient basis for the exercise of federal regulatory jurisdiction under Section 404(a) of the FWPCA. Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, 531 U.S. 159 (2001) ("SWANCC"). Since that decision was rendered, case law with respect to the meaning of the term "navigable waters" has been evolving.

Particularly given these legal developments, the FOSC should provide relevant information on the affected water or shoreline to the NPFC case officer, including the name and nature of the water, tributary connections between the water and downstream traditional navigable waters, and information regarding any other adjacent waters. If a question should arise with respect to the jurisdictional status of a particular water, agency counsel should be consulted.

D. Responsible Party Identification - Facility/Vessel Source

1. RP Definitions

OPA imposes liability for removal costs and damages "on each responsible party for a vessel or a facility from which oil is discharged, or which poses the substantial threat of a discharge of oil, into or upon the navigable waters or adjoining shorelines or the exclusive economic zone...." 33 U.S.C. §2702(a). Identification of the responsible parties under OPA depends on the source of the discharge or substantial threat of a discharge. See 33 U.S.C. §2701(32). In general, responsible parties for each type of pollution source are as follows:

a. Vessel. In the case of a vessel, responsible party or parties means the owner(s), operator(s), and demise charterer(s).

b. Onshore Facility. In the case of an onshore facility, responsible party or parties means the owner(s) and operator(s) of the facility. An onshore facility is any facility located in, on, or under any land within the United States other than submerged land.[5] There are

[4] Under OPA, the term "navigable waters" is also defined as the "waters of the United States, including the territorial seas," 33 U.S.C. §2701(21), and the term has been construed by courts to have the same meaning under OPA as under the FWPCA.

[5] "Facility" is further defined as

some exceptions for states and other government owners that have transferred possession and right to use the property to other persons by lease, assignment or permit at the time of the discharge or substantial threat of discharge. In the case of an actual discharge, the relevant time for determining ownership and operation is the time during which the discharge occurred. In the case of a substantial threat of a discharge, the relevant time for determining ownership and operation is the time during which a substantial threat was posed.

c. Offshore facility. In the case of an offshore facility, responsible party or parties means the lessee(s), permitee(s), and holder(s) of a right of use and easement of the area in which the facility is located. An offshore facility includes any facility located in, on, or under water. There are some exceptions for states and other government owners that have transferred possession and right to use the property to other persons by lease, assignment or permit at the time of the discharge or substantial threat of discharge.

d. Deepwater Port. In the case of a deepwater port licensed under the Deepwater Port Act of 1974, responsible party or parties means the licensee.

e. Pipeline. In the case of a pipeline, responsible party or parties means the owner(s) or operator(s) of the pipeline.

f. Abandonment. In the case of an abandoned vessel, onshore facility, deepwater port, pipeline, or offshore facility, responsible party or parties means the persons who would have been responsible parties immediately prior to the abandonment of the vessel or facility.

2. Documentation Required From FOSC

Under the NCP, the FOSC is responsible for identifying potentially responsible parties to the extent practicable. 40 CFR 300.305(b)(3). For a simple vessel case, this task is fairly straightforward. For a facility case involving numerous leases and other title documents, that process may be more lengthy and complicated. In the case of an onshore facility, FOSCs should generally retain a deed and title search company when the FPN is opened in order to identify all of the responsible parties as promptly as possible. Because this search facilitates the prompt identification of responsible parties, it should be conducted before the commencement of the removal where time permits and, in any event, as soon as possible during the response phase. The OSLTF is generally available to pay the costs of this search, and a draft model Scope of Work ("SOW") for this purpose is available from the NPFC. This procedure is also available with respect to offshore facilities. Documentation with respect to the identification of responsible parties for vessels and onshore and offshore facilities is discussed further below.

a. Vessel. In the case of a vessel, documentation of the responsible party should include the name of the vessel, dimensions, type of vessel, and some identifying number, such an official number if it is a U.S. flag vessel or a Lloyds number for foreign flag vessels.

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any structure, group of structures, equipment, or device (other than a vessel) which is used for one or more of the following purposes; exploring for, drilling for, producing, storing, handling, transferring, processing or transporting oil. This term includes any motor vehicle, rolling stock, or pipeline used for one or more of these purposes. 33 U.S.C. § 2701(9).

A copy of the vessel's Certificate of Documentation should be in the case file. For vessels with no Coast Guard documents, a copy of the vessel's state registration and drivers license of the owner and/or operator should be obtained, along with any other documents identifying the owners and operators.

b. Onshore Facility. As soon as the FPN is opened, in a case involving an onshore facility, the FOSC should generally retain a deed and title search company familiar with relevant property records. The attached model SOW for "Onshore Facilities" should be used in contracting with the deed and title search company and modified where appropriate. If the FOSC does not retain a deed and title search company, the FOSC should obtain the information and documentation set forth in the model SOW. In general, the title documents and leases will determine the owner(s) of the facility at the time of the discharge or substantial threat of a discharge of oil. The term operator is not limited to the operator of record. The term operator may include others who had control with respect to the facility's operations, even though these parties may not have been designated an operator of record by the state regulatory body. FOSCs should contact their Regional Counsel (for EPA) or District Legal Office (for Coast Guard) to resolve any enforcement issues and interpretation of various legal documents.

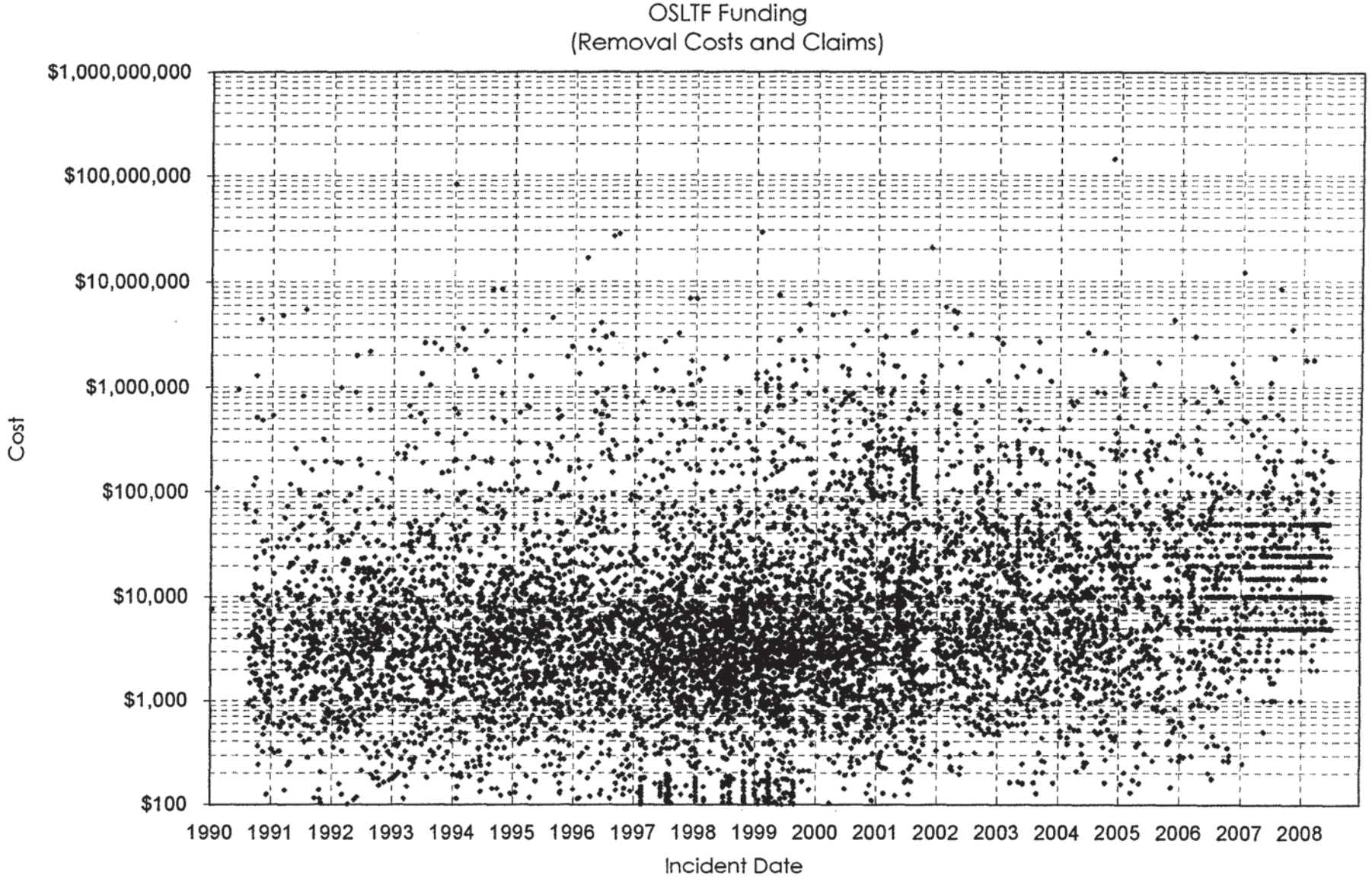
c. Offshore Facility. As soon as the FPN is opened, in the case of an offshore facility, the FOSC should generally obtain the documents and information set forth in the attached SOW for "Offshore Facilities." With respect to submerged lands owned by the state most of this information is usually kept by the state leasing authority or state oil gas regulatory body. As discussed above, the FOSC may contract these services out at the beginning of the removal project to a deed and title company familiar with records pertaining to oil and gas leasing.

FOSCs should contact their Regional Counsel (for EPA) or District Legal Office (for Coast Guard) to resolve any enforcement issues and interpretation of various legal documents. NPFC legal staff is available to provide advice to case managers on interpretation of these documents.

E. Funds Access Procedures

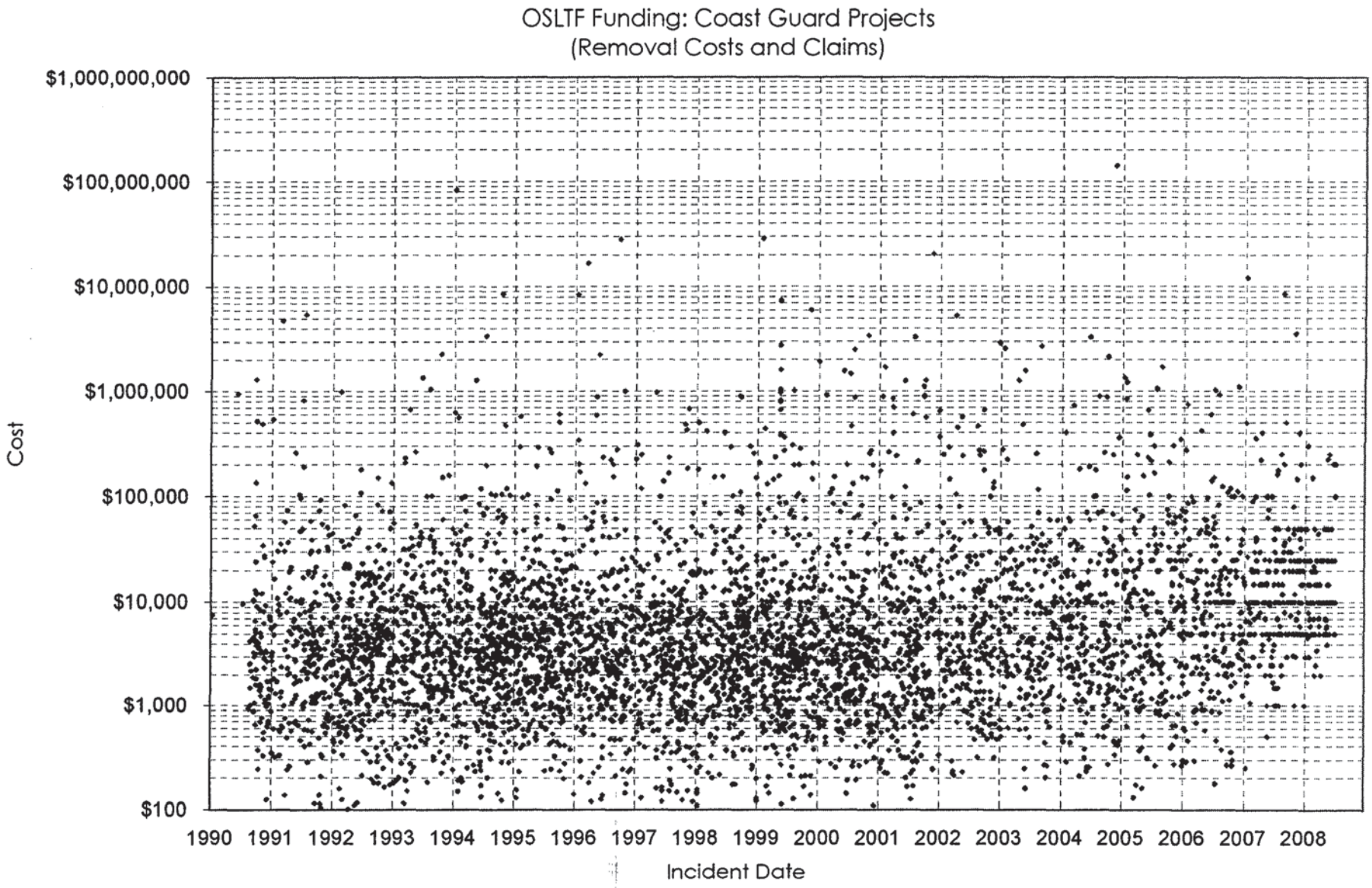
1. EPA FOSCs can initially obtain $50K from the OSLTF using CANAPS. EPA FOSCs should use CANAPS to request higher ceilings when necessary. Upon receipt of the request, the NPFC Case Officer will coordinate with the FOSC and raise the ceiling as appropriate. EPA FOSCs must prepare and submit Oil Removal Project Plans when requesting ceilings in excess of $250K.

2. USCG FOSCs can initially obtain $500K from the OSLTF using CANAPS. USCG FOSCS should use CANAPS to request higher ceilings when necessary. Upon receipt of the request, the NPFC Case Officer will coordinate with the FOSC and raise the ceiling as appropriate.



Source: National Pollution Funds Center

Prepared by Greg Buie 07/11/2008



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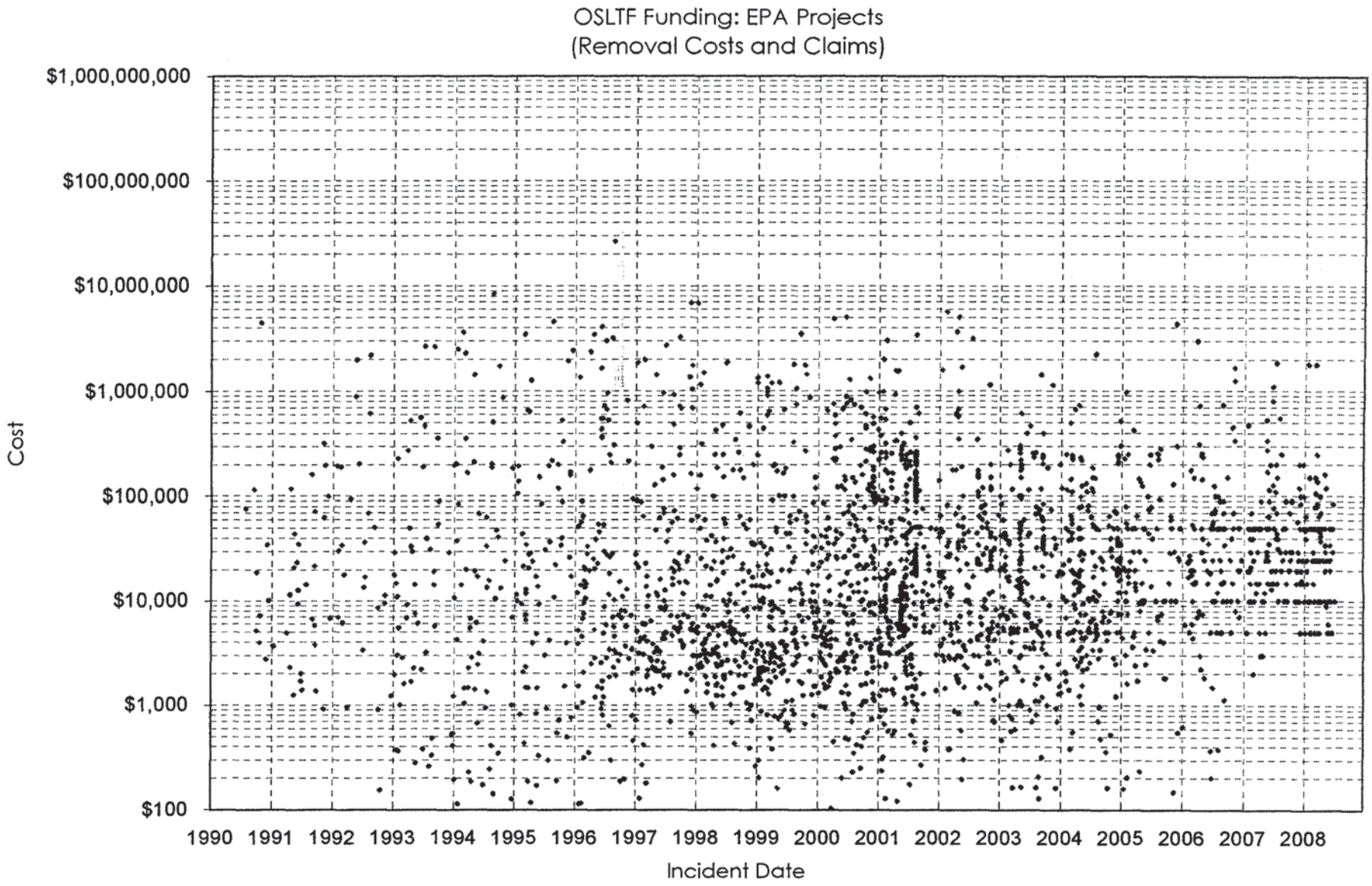
Prepared by Greg Buie 07/13/2008



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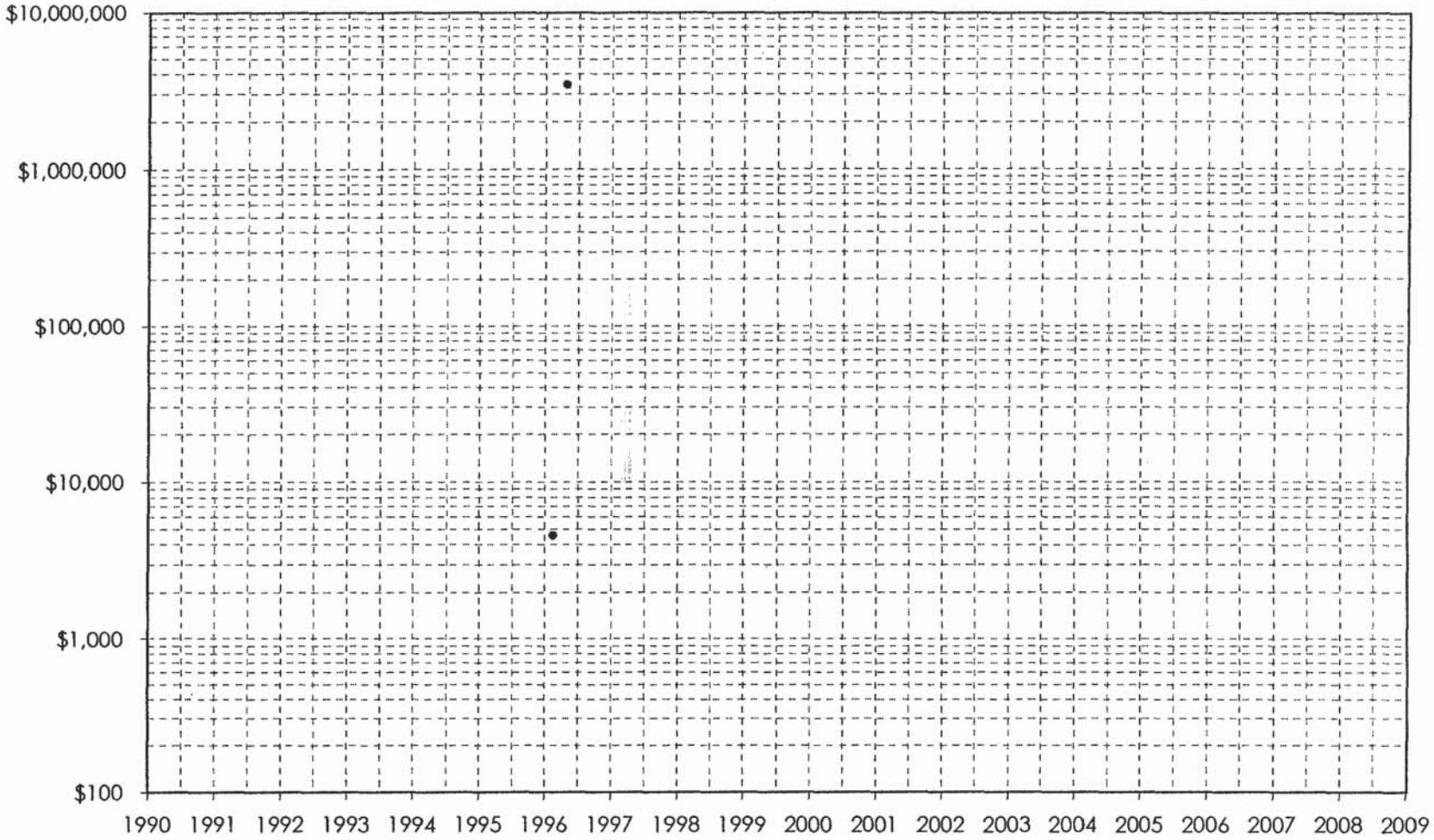
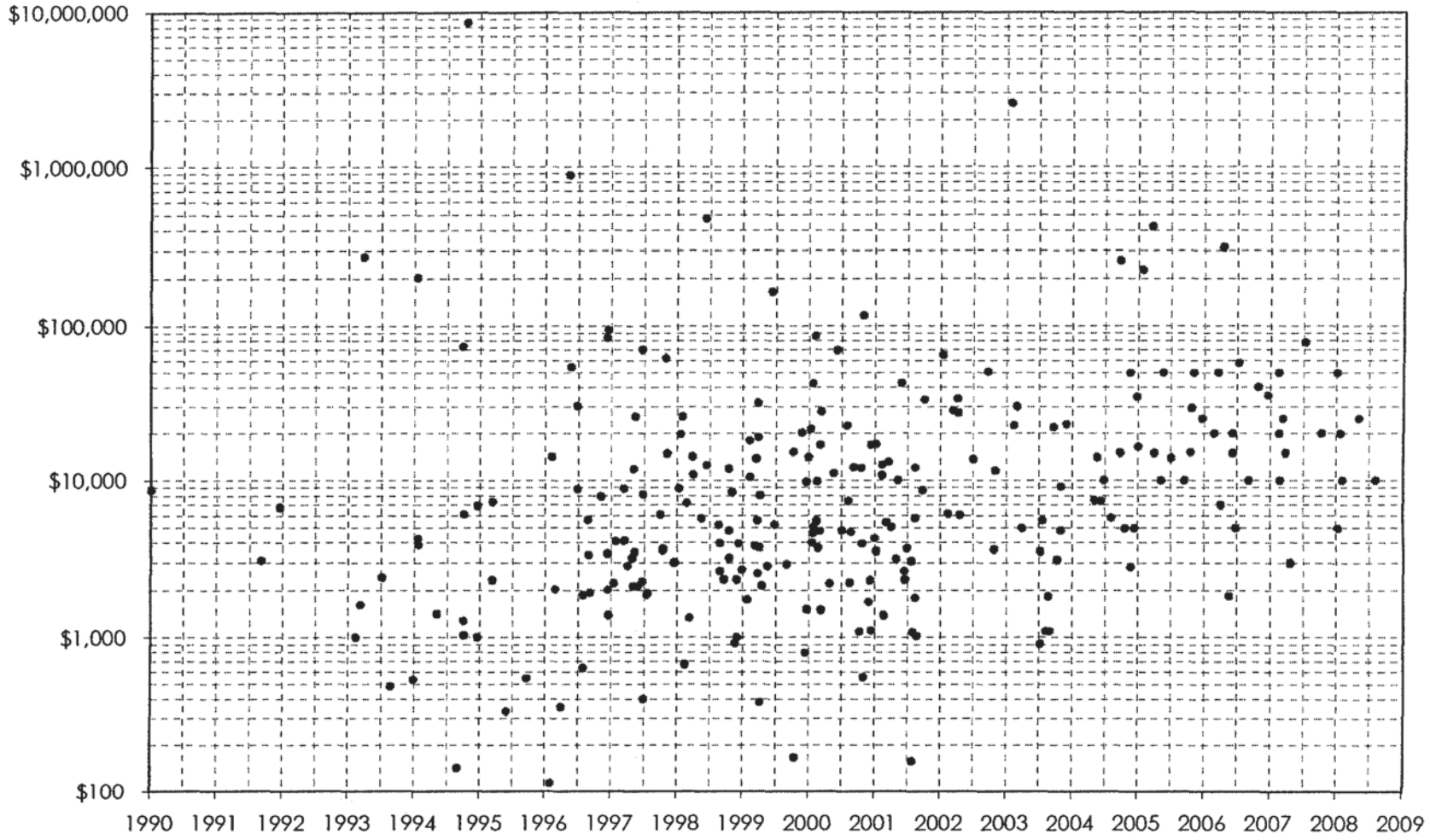
Prepared by Greg Buie 07/13/2008

OSLTF Removal Costs and Claims
South Dakota



OSLTF Removal Costs and Claims
Pipelines



BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF TOM KIRSCHENMANN
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. State your name.

A. Tom Kirschenmann.

Q. By who are you employed?

A. State of South Dakota.

Q. For what department do you work?

A. Department of Game, Fish, and Parks.

Q. State the program for which you work?

A. Division of Wildlife, Terrestrial Resources Chief.

Q. Please explain your role and duties within your department.

A. Coordinate the management and research of terrestrial wildlife (game and non-game) statewide; coordinate the administration of the Department's habitat programs, including private land's programs, various aspects of public land management, and hunting access programs; manage terrestrial environmental review assessments; and over-see programs related to the federal Farm Bill. These coordination and management efforts are accomplished through the oversight of a Habitat Program Administrator, Wildlife Program Administrator, and a Wildlife Damage Program Administrator, 21 biologists, and three staff assistants. Serve as the Department's liaison or representative for several state and federal agencies and associated committees and coordinate with non-government organizations, constituency groups, and agricultural entities on resource management programs, projects, and issues.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission.

Q. Were you involved in the Keystone XL permitting docket, HP09-001?

A. Yes.

Q. Did you file prefiled testimony in HP09-001?

A. Yes. (Exhibit___(TK-1))

Q. Did you also provide testimony at the evidentiary hearing in HP09-001?

A. Yes.

Q. Have you thoroughly reviewed all of the information filed in HP14-001?

A. I have reviewed the information related to wildlife and fisheries resources.

Q. Have you reviewed the Final Supplemental Environmental Impact Statement for the Keystone XL project?

A. Yes.

Q. Have there been any changes to the state threatened and endangered species list or Department of Game Fish and Parks' management plans since your original testimony filed in PUC Docket HP09-001?

A. There have been no changes to the threatened and endangered species list since my original testimony. The Department of Game, Fish and Parks finalized a revision of the state's Greater sage-grouse management plan in November 2014. The plan focuses on monitoring and habitat approaches/programs which are beneficial to wildlife and landowners alike. No regulatory mechanisms were included, however the plan discusses ways in which the Department can more closely work with other state agencies in reviewing energy development or other activities and projects to provide

management recommendations which may minimize or alleviate impacts to sage grouse and its associated habitats.

Q. If so, do any of those changes impact the Keystone XL project and can the project minimize its impact to any recently listed state threatened or endangered species?

A. No changes impact the project.

Q. Based on your review of the FSEIS and any other information provided to you in this docket, has your opinion on the Keystone XL project changed?

A. No.

Q. Are there any conditions in the Amended Final Decision and Order, dated June 29, 2010, that you believe, at this time, that Keystone XL cannot continue to meet?

A. No.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

KEYSTONE XL PROJECT
DOCKET HP09-001

PREFILED TESTIMONY OF TOM KIRSCHENMANN
ON BEHALF OF THE COMMISSION STAFF
SEPTEMBER 2009

BEFORE THE PUBLIC UTILITIES COMMISSION STATE OF SOUTH DAKOTA

PREFILED TESTIMONY OF TOM KIRSCHENMANN

Q. State your name.

A. Tom Kirschenmann.

Q. State your employer.

A. State of South Dakota, Department of Game, Fish, and Parks.

Q. State the program for which you work.

A. Division of Wildlife, Terrestrial Resources Chief.

Q. State the program roles and your specific job with the department.

A. The role of the Terrestrial Resources section is to study, evaluate, and manage all wildlife and associated habitats. Management includes game and non-game wildlife populations, habitat management on public lands and technical assistance and habitat development on private lands, population and habitat inventory, and environmental review of local and landscape projects. As Chief of the Terrestrial Resources Section, I oversee all wildlife management and research, as well as habitat management consisting of the department's public lands and private lands programs.

Q. Explain the range of duties you perform.

A. Duties include managing the Terrestrial Resources sections that includes two program administrators, 20 wildlife biologists, and two secretaries; oversee all wildlife research, management, and the establishment of hunting seasons for game species; oversee all private lands habitat programs; coordinate environmental review evaluations and responses related to terrestrial issues; serve as the Department's liaison for several state and federal agencies; and represent the Department on state and national committees.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. Are there any sensitive wildlife areas crossed by the pipeline?

A. There are a few areas that would fall under this category: sage brush habitat that includes sage grouse leks, crossing of several rivers, an area where American Burying Beetle are located within Tripp County, and native prairie.

Q. Please briefly summarize each.

A. The northwest corner of South Dakota is the easterly edge of the sagebrush range, including the easterly range of sage grouse. Sage grouse are dependent on sage brush habitat and traditional leks (courtship areas) are extremely important to this species. Disturbance of leks could have a negative impact on reproduction and ultimately recruitment to the population; applying additional strain to already small population. In addition, several species of concern depend on sage habitats in South Dakota, including the sagebrush vole, Brewer's sparrow and sage thrasher.

Although underground directional boring would be used to cross rivers such as the Cheyenne and White Rivers, these riparian areas provide critical habitat for multiple species, including nesting locations for species such as the least tern, bald eagles, and other raptors.

Tripp County and the southwest corner of Gregory County has an area approximately 800 square miles in size of occupied American Burying Beetle, with an estimated 600 acres affected by the pipeline route. This species is a federally listed endangered species.

The fragmentation of large contiguous tracts of native prairie resulting from infrastructure is a concern and the potential affect it would have on a number of grassland dependent bird species.

Q. Can the applicant mitigate the risks associated with crossing those sensitive areas?

A. <u>Sage brush habitat and sage grouse leks</u>

Locating and monitoring of active leks prior to construction would identify areas that would be recommended to avoid or restrict during March 1 through June 15. Sage brush habitat altered or destroyed during construction should be replanted to native species.

River crossings and riparian disturbance

Least Tern: If construction was to occur during the breeding season on the Cheyenne River, it would be recommended to conduct surveys to determine if any active nesting is occurring. If active nests are located, an adequate buffer (minimum of 0.25 mile) should be implemented with no disturbance within that buffer zone.

Bald Eagle: Monitoring of active nests should be conducted prior to and during construction. Active nests located should be provided a buffer of 1 mile during the nesting season (Feb. 1 – Aug. 15).

American Burying Beetle

Mitigation efforts should be deferred to the US Fish and Wildlife Service. Potential to set up a mitigation bank to off-set the acres lost to construction.

Grassland Fragmentation

It will be difficult to avoid total fragmentation due to roads and other infrastructure development, however disturbed ground should be replanted with native species and all necessary measures taken to avoid the infestation of noxious weeds and invasive plant species.

BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DOCKET NO. HP14-001

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUEDIN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

Direct Testimony of Daniel Flo on Behalf of the Staff of the South Dakota Public Utilities Commission

April 2, 2015

Q: Please state your name and business address.

A: Daniel Flo, Natural Resource Group, LLC (NRG), 1500 Southwest First Avenue, Suite 885, Portland, OR, 97201; 1000 IDS Center, 80 South 8th Street, Minneapolis, MN, 55402 (Corporate Office).

Q: Describe your educational background.

A: I received my Bachelor of Science Degree in 1996 from Minnesota State University, Mankato with a Major in Geography. I then received my Juris Doctor degree from Northwestern School of Law of Lew & Clark College in 2002. My educational and professional specialties are in environmental law and land use.

Q: By whom are you now employed?

A: I have been employed by Natural Resource Group, LLC from 2005 to 2010, and from 2013 to present. I currently hold the position of Senior Consultant.

Q: What work experience have you had that is relevant to your involvement on this project?

A: From 2005 to present, my responsibilities have been to provide clients in the energy and mining industries with environmental permitting services, including the preparation of Environmental Assessments and Environmental Impact Statements (EISs) under the National Environmental Policy Act and/or relevant state programs. My environmental permitting experience also includes the preparation of permit applications under Sections 404 and 401 of the Clean Water Act, the preparation of routing and siting applications to state utility commissions, and various other local, state, and federal environmental permits and approvals. I also provide project management services wherein I lead multi-disciplinary teams in performing route and site analysis, environmental field surveys, environmental permitting, construction compliance inspections, and post-construction restoration monitoring. A copy of my resume is appended to this testimony as Exhibit___DF-1.

Q: What Professional Credentials do you hold?

A: None.

Q: What is the purpose of your testimony?

A: In 2009, NRG provided environmental consulting services in support of PUC Staff's review of Keystone's original permit application. The scope of NRG's original review included a summary of the Department of State environmental review, a review of Keystone's application to the PUC, and an evaluation of the adequacy of Keystone's state permit application with respect to alternatives, paleontology, cultural resources, soils, erosion and sedimentation, and restoration methods described in the project's Construction, Mitigation, and Reclamation Plan (CMRP). Based on this review, NRG provided hearing support to PUC Staff including the preparation of prefiled testimony and expert testimony during the PUC hearing. The purpose of this testimony is to summarize NRG's review of Keystone's September 2014 Petition for Order Accepting Certification under SDCL § 49-41B-27 and associated supporting documentation, specifically our evaluation as to whether any of the changes identified by Keystone result in a change to our original testimony.

Q: What methodology did you employ?

A: I evaluated materials submitted to the South Dakota Public Utilities Commission (PUC) by TransCanada Keystone Pipeline, LP (Keystone), including Keystone's Petition for Order Accepting Certification under SDCL § 49-41B-27 and associated supporting documentation. Primarily, I evaluated the Findings of Fact from the PUC's Amended Final Decision and Order that have changed since 2010 as detailed in Keystone's table in Appendix C, and compared those changes to NRG's original testimony prepared in 2009. I also evaluated the red-line changes to Keystone's CMRP (dated April 2012) to determine whether the changes in that document result in changes to NRG's original testimony.

Q: With respect to the changes identified by Keystone in Appendix C, South Dakota PUC Amended Final Decision and Order, Tracking Table of Changes, please summarize your review by Finding Number. Findings 14 through 18:

A: The updated project information provided by Keystone for Findings 14 through 18 has been reviewed and results in no change to NRG's original (2009) testimony.

Q: Findings 19, 20, 22, 23:

A: The updated project information provided by Keystone for Findings 19, 20, 22 and 23 is outside the scope of NRG's 2009 review and testimony, and therefore results in no change to NRG's original testimony.

Q: Findings 24 through 29:

A: The updated project information provided by Keystone for Findings 24 through 29 is outside the scope of NRG's 2009 review and testimony, and therefore results in no change to NRG's original testimony.

Q: Finding 32:

A: I reviewed the red-line changes to Keystone's CMRP (dated April 2012) and compared those changes to NRG's original testimony from Ross Hargrove and Dr. James Arndt. My findings are summarized in Exhibit____DF-2. This table lists all CMRP sections with redline changes where NRG also provided recommendations in 2009, and provides my evaluation of Keystone's change with respect to NRG's 2009 testimony. None of the redline changes to Keystone's CMRP result in a change to NRG's 2009 testimony.

Q: Finding 33:

A: The updated project information provided by Keystone for Finding 33 has been reviewed and results in no change to NRG's original testimony.

Q: Finding 41:

A: I reviewed the additional site-specific crossing plans for the HDD crossings of Bad River and Bridger Creek, and reviewed NRG's original testimony. The addition of these two waterbodies as HDD crossings, and the supporting site-specific crossing drawings, result in no change to NRG's original testimony.

Q: Finding 50:

A: The updated project information provided by Keystone for Finding 50 has been reviewed and results in no change to NRG's original testimony.

Q: Finding 54:

A: The updated project information provided by Keystone for Finding 54 has been reviewed and results in no change to NRG's original testimony.

Q: Findings 60 through 63, and 68:

A: The updated project information provided by Keystone for Findings 60 through 63 and 68 is outside the scope of NRG's 2009 review and testimony, and therefore results in no change to NRG's original testimony.

Q: Finding 73:

A: See the response to Finding Number 32 above and my summarized findings in Attachment 2.

Q: Finding 80:

A: NRG's original recommendations included that Keystone be required to provide the final Construction/Reclamation (Con/Rec) Units and associated construction, restoration and mitigation procedures and corresponding pipeline milepost references to the PUC prior to construction. NRG also recommended that the Con/Rec classification system be developed in consultation with Natural Resources Conservation Service (NRCS) staff. NRG's recommendations were based in part on an understanding that Keystone would include Badlands (sodium bentonite) soils as a Con/Rec Unit. NRG also evaluated Keystone's examples of specific reclamation measures that may be used in areas where saline, sodic, and saline-sodic soils are encountered during construction and found the sample procedures to be adequate.

Keystone's update to Finding 80 indicates that Con/Rec mapping was completed in consultation with area NRCS staff. Keystone's Response to Commission Staff's First Set of Interrogatories (#18) indicates that Con/Rec Units are not part of the updated CMRP but that the results are included with the Department of State's FSEIS in Appendix R.

I reviewed Appendix R of the FSEIS on the Department of State's website and confirmed that Con/Rec Units were developed and are included as an appendix to that federal NEPA document. I also confirmed, based on the documentation provided in Appendix R including records of correspondence, that NRCS staff and other professional resources were consulted during the development of the Con/Rec classification system. Appendix R does not, however, include pipeline milepost references for the Con/Rec Units.

Keystone's update appears largely to satisfy NRG's original recommendation in that Con/Rec Units have been developed, that NRCS staff was consulted during the Con/Rec Unit development process, and that the Con/Rec classification system is available to the PUC prior to project construction.

To the extent that the Con/Rec Units do not specifically include a Badlands soils unit, NRG originally found that Keystone's construction, reclamation, and mitigation measures for dealing with this soil type, as discussed in the application, were appropriate and represented the tools that are typically used during construction in similar soils. The absence of a Badlands soils unit does not specifically represent a change to NRG's original testimony.

Finally, although the Con/Rec Units do not appear to specifically address construction or reclamation procedures in saline, sodic, or saline-sodic soils or saline seeps, there is no change to NRG's original testimony finding that the reclamation measures discussed in the application were adequate and appropriate for those soil types.

Q: Finding 83:

A: See the response to Finding Number 41 above. The updated project information provided by Keystone for Finding 83 results in no change to NRG's original testimony.

Q: Finding 90:

A: The updated project information provided by Keystone for Finding 90 is outside the scope of NRG's 2009 review and testimony, and therefore results in no change to NRG's original testimony.

Q: Finding 107:

A: The updated project information provided by Keystone for Finding 107 is outside the scope of NRG's 2009 review and testimony, and therefore results in no change to NRG's original testimony.

Q: Does this conclude your testimony?

A: Yes.

Daniel S. Flo
Email: daniel.flo@NRG-LLC.com

Daniel Flo is a Senior Regulatory Specialist in Natural Resource Group, LLC's (NRG) Portland office. Daniel has over 12 years of environmental assessment and permitting experience and specializes in project management for liquids pipelines, electric transmission and wind energy projects. Daniel is an experienced environmental project manager and is adept at overseeing all stages of project development including agency coordination, environmental surveys, major permitting, environmental review, construction, and restoration. Daniel is also NRG's Business Development Lead for the Construction Compliance practice group and is responsible for supporting and promoting NRG's Environmental Inspection, Third Party Compliance and related service areas.

Selected Project Experience

- Enbridge Energy, Inc., 2014 Wisconsin and Illinois Environmental Surveys Initiative Project, 2013 to Present, 470 miles of environmental surveys along Enbridge's existing Line 61 utility corridor: Project Manager responsible for overseeing preparation of field deployment, initial agency consultations, field training program, and environmental surveys including wetlands and waterbodies, cultural resources, sensitive habitats and protected species.
- Enbridge Energy, Inc., Line 3 Maintenance and Flexibility Project, May 2014 to November 2014, 16-mile-long 34-inch-diameter crude oil pipeline segment replacement project in North Dakota: Project Manager for environmental inspection, compliance management and daily reporting during construction of the maintenance replacement project.
- Enbridge Energy, Inc., Line 3 Maintenance and Flexibility Project, January 2014 to May 2014, 16-mile-long 34-inch-diameter crude oil pipeline segment replacement project in North Dakota: Project Manager responsible for environmental support activities for a high-priority maintenance replacement project, including desktop analysis, risk assessment, construction planning, and environmental permitting.
- Quanta Pipeline Services, Bluegrass Memphis Pipeline Project, 2013 to 2014, 91-mile-long natural gas liquids pipeline in Tennessee, Arkansas, and Mississippi: Project Manager responsible for environmental and cultural resources surveys and permitting, including U.S. Army Corps of Engineers (COE) Nationwide Permit 12 and levee crossing permits, water appropriation permits, stormwater discharge and hydrostatic testwater discharge permits, and protected species consultations.
- Enbridge Energy, Inc., Line 79 Pipeline Project, 2011 to 2012, 35-mile-long crude oil pipeline in Michigan: Project Manager responsible for environmental surveys and permitting, as well as preparation of a Michigan Environmental Impact Report and Joint Permit Applications under Michigan administrative rules Section 301 and 303, and multiple local drain crossing and soil erosion and sediment control permits.
- Preferred Sands of Minnesota, Kasota Mine Project, 2010 to 2012, non-metallic mineral mining and processing project in Minnesota: Project Manager responsible for successful completion of a Scoping Environmental Assessment Worksheet, local permitting and zoning, environmental surveys, and hydrogeological studies and modeling.
- Preferred Sands of Minnesota, 2010 to 2012, various non-metallic mineral mining and processing project sites in Wisconsin: Project Manager responsible for overseeing changes in zoning, conditional use permits, mine reclamation plans, and state and local permits.

- ALLETE Clean Energy, North Dakota One Wind Project, 2012, 100-megawatt (MW) wind energy project in North Dakota: Project Manager responsible for managing environmental survey and permitting and energy facility siting activities including obtaining site approval from the North Dakota Public Service Commission.
- Minnesota Power, Bison 2 and Bison 3 Wind Energy Facility Projects, 2011 to 2012, two 105-MW wind projects in North Dakota: Project Manager responsible for cultural and environmental field surveys and team preparation of energy facility siting applications and other documents necessary for site approval from the North Dakota Public Service Commission.
- CapX2020, Hampton to La Crosse 345 kV Transmission Line Project, 2011, 125-mile-long electric transmission project in Minnesota and Wisconsin: Author of the Land Use section of the State of Minnesota Draft Environmental Impact Statement (EIS).
- Rangeland Energy, COLT Connector Pipeline Project, 2010 to 2012, 20-mile-long crude oil pipeline in North Dakota: Project Manager responsible for environmental permitting and review and post-construction environmental inspections, including a facility siting / route permit from the North Dakota Public Service Commission.
- CapX2020, Fargo to Monticello 345 kV Transmission Line Project, 2010, the construction of major electric transmission lines from Fargo, North Dakota to Monticello, Minnesota: Co-Project Manager responsible for overseeing technical specialists involved with environmental and cultural resources field surveys and permit applications for the COE and the Minnesota Department of Natural Resources, as well as contributing to the environmental routing analysis process supporting route permitting and state utility commission certification.
- Enbridge Energy, Alberta Clipper Pipeline Project, 2006 to 2010, 300-mile-long, 36-inch-diameter crude oil pipeline between the United States – Canada border in North Dakota and Superior, Wisconsin: Deputy Project Manager responsible for managing environmental surveys and federal and state permitting including an EIS from the U.S. Department of State, National Forest Service crossing permits, North Dakota Public Service Commission route permit, and Minnesota Department of Natural Resources land and waterbody crossing permits.
- Enbridge Energy, Southern Lights Diluent Pipeline Project, 2006 to 2009, 190-mile-long, 20-inch-diameter refined product pipeline from Superior, Wisconsin to Clearbrook, Minnesota: Project Manager responsible for managing environmental surveys and federal and state permitting.
- South Dakota Public Utilities Commission, 2009: Presented expert testimony to the South Dakota Public Utilities Commission regarding the National Environmental Policy Act (NEPA) process and federal environmental review for interstate liquids pipelines.
- Enbridge Energy, LSr Pipeline Project, 2006 to 2008, 105-mile-long, 20-inch-diameter crude oil pipeline from the United States – Canada border at Neche, North Dakota to Clearbrook, Minnesota: Supervised environmental permitting and compliance and contributed to the development and submittal of numerous federal, state, and local permit applications as well as contributed to preparing an Environmental Assessment (EA) for the U.S. Department of State.
- El Paso, Continental Connector Natural Gas Pipeline Project, 2006, 384-mile-long natural gas pipeline in Texas, Oklahoma, Arkansas, and Louisiana: Authored the Land Use section of the Federal Energy Regulatory Commission (FERC) environmental report (Resource Report 8).

- Phoenix Expansion Pipeline Project, 2006, 259-mile-long natural gas pipeline in Arizona and 25 miles of additional loops in New Mexico: Authored the socioeconomics section and co-authored the land use section of the FERC EIS.

Education and Training

- J.D., Northwestern School of Law of Lewis & Clark College, Oregon, 2002
- B.S., Geography, Minnesota State University, Minnesota, 1996
- FERC Environmental Review & Compliance for Natural Gas Facilities seminar, Denver, 2009
- University of Minnesota Certified Erosion/Sediment Control Specialist; Certified Inspector / Installer; Certified Designer of Stormwater Pollution Prevention Plans, 2009

Finding Number	NRG Response
	The Project
14	The updated information provided by Keystone for Finding Number 14 has been reviewed and results in no change to NRG's original (2009) testimony.
15	Updated information has been reviewed and results in no change to NRG's original testimony.
16	Updated information has been reviewed and results in no change to NRG's original testimony.
17	Updated information has been reviewed and results in no change to NRG's original testimony.
18	Updated information has been reviewed and results in no change to NRG's original testimony.
19	The updated information provided by Keystone for Finding Number 19 is outside the scope of NRG's 2009 review and testimony, and therefore results in no change to NRG's original testimony.
20	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
22	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
23	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
	Demand for the Facility
24	The updated information provided by Keystone for Finding Number 24 is outside of the scope of NRG's original (2009) review and testimony, and therefore results in no change to NRG's original testimony.
25	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
26	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
27	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
28	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
29	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
	Environmental
32	I reviewed the redline changes to Keystone's CMRP (dated April 2012) and compared those changes to NRG's original testimony from Ross Hargrove and Dr. James Arndt. My findings are summarized in Attachment 2. This table lists all CMRP sections with redline changes where NRG also provided recommendations in 2009, and provides my evaluation of Keystone's change with respect to NRG's 2009 testimony. None of the redline changes to Keystone's CMRP result in a change to NRG's original testimony.

33	Updated information has been reviewed and results in no change to NRG's original testimony.
41	I reviewed the additional site-specific crossing plans for the HDD crossings of Bad River and Bridger Creek, and reviewed NRG's original testimony. The addition of these two waterbodies as HDD crossings, and the supporting site-specific crossing drawings, result in no change to NRG's original testimony.
50	No change to original testimony.
54	No change to original testimony.
	Design and Construction
60	The updated information provided by Keystone for Finding Number 60 is outside of the scope of NRG's original (2009) review and testimony, and therefore results in no change to NRG's original testimony.
61	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
62	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
63	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
68	Updated information is outside the scope of NRG's original review and results in no change to our original testimony.
73	See response to Finding Number 32 above. I reviewed the redline changes to Keystone's CMRP (dated April 2012) and compared those changes to NRG's original testimony from Ross Hargrove and Dr. James Arndt. My findings are summarized in Attachment 2. This table lists all CMRP sections with redline changes where NRG also provided recommendations in 2009, and provides my evaluation of Keystone's change with respect to NRG's 2009 testimony. None of the redline changes to Keystone's CMRP result in a change to NRG's 2009 testimony.
80	NRG's original recommendation was that Keystone provide the final Construction/Reclamation Units and associated restoration and mitigation procedures and corresponding pipeline milepost references to the PUC prior to construction. Keystone's update indicates that Con/Rec Unit mapping in consultation with area NRCS offices has been completed and that the results are included with the Department of State's FSEIS in Appendix R. This update appears to satisfy NRG's original recommendation.
83	Refer to Finding Number 41. No change to NRG's original testimony.
	Operation and Maintenance
90	The updated information provided by Keystone for Finding Number 90 is outside of the scope of NRG's original (2009) review and testimony, and therefore results in no change to NRG's original testimony.
	Socio-Economic Factors
107	The updated information provided by Keystone for Finding Number 107 is outside of the scope of NRG's original (2009) review and testimony, and therefore results in no change to NRG's original testimony.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF DAVID SCHRAMM
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. Please state your name and business address.

A. My name is David Schramm. My business address is 28100 Torch Parkway, Warrenville, Illinois, 60555.

Q. By whom are you employed and in what capacity?

A. I am employed as a Vice President-Senior Project Manager by EN Engineering, an engineering and consulting firm specializing in pipeline design, codes compliance, integrity, and automation services for the oil and gas industry.

Q. Please describe your educational background and professional experience.

A. I hold a B.S. degree from Iowa State University (Ames, Iowa) and I am a NACE Institute No. 3178 Certified Cathodic Protection Specialist and Certified Corrosion Technologist (confirm certification at www.naceinstitute.org). My professional experience consists of employment in the pipeline industry with EN Engineering, NICOR Technologies, NICOR Gas (Northern Illinois Gas), Corrpro Companies, Inc., and Harco Corporation.

My responsibilities in these positions includes nearly 35-years of extensive experience in the assessment and application of pipeline integrity and corrosion control programs including: corrosion control engineering, analysis and design, process control and measurement, internal “smart” tooling, cathodic protection design, installation and maintenance, computerized close interval potential survey, direct current voltage gradient survey, telluric current monitoring, measurement and investigation, stray DC and AC interference testing and mitigation, coating selection and inspection and material selection and purchasing.

I am currently responsible for the technical support of the Corrosion Control and Integrity Field service offerings including: the technical oversight of project performance and standards, the development and maintenance of technical guidelines, standards and procedures, quality assurance (ISO 9001) for corrosion control, cathodic protection, field failure and integrity management projects and proposals, and the qualification and training of corrosion control field failure, and system integrity personnel.

Within the corrosion control and cathodic protection industry, I have served in a Chair position for NACE T-10-A-11: Gas Industry Corrosion Problems (1995 through 2001), NACE International Certification Committee (2001 through 2005), Chair and Vice-Chair for the NACE International Professional Activities Committee (PAC), and currently serving as the Chair of the NACE Institute Certification Commission.

In addition, I am a certified Craft Instructor for the National Center for Construction Education (NCCER) as it relates to the American Petroleum Institute (API) Operator Qualification Program, a Veriforce Operator Qualification Evaluator, and served as a member of numerous NACE task or industry groups including the NACE Cathodic Protection Training and Certification Program task group, the Chicago Region Committee on Underground Corrosion (CRCUC) and the Michigan Electrolysis Committee (MEC).

My resume is attached to this document as Exhibit___DS-1.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. Please state the purpose of your testimony in this proceeding.

A. There are three main objectives of the Staff in this testimony. First, to ensure that the proposed changes to the Findings of Fact in the Decision, as identified by TransCanada Keystone Pipeline's (the Applicant) Tracking Table of Changes, comply with the Federal Pipeline Safety Regulations 49CFR 195, Transportation of Hazardous Liquids by Pipeline. Secondly, the objective is to ensure that the Applicant has met any new requirements imposed by the Federal Pipeline Safety Regulations 49CFR 195 since the Amended Final Decision and Order was issued on June 29, 2010 with respect to the application for a permit (Permit) to construct and operate a crude oil pipeline in South Dakota. Lastly, the objective is to ensure that the amended permit conditions, and any project changes, are still able to meet the conditions upon which the permit was issued, specifically focusing on pipeline design, integrity management and compliance with PHMSA regulations (49CFR 195).

This testimony deals specifically with updates made to the project as provided by Keystone on the Tracking Table of Changes, specifically as they relate to 49 CFR Part 195 Subpart H.

Q. Keystone updated project specifications as they relate to Finding 68 in the Amended Final Decision and Order to indicate that TransCanada has experienced no evidence of corrosion on fusion bonded epoxy lines except for one instance

where an adjacent foreign utility interfered with the cathodic protection system. Do requirements set forth in 49 CFR Part 195 and / or the safety measures set forth in the DOS Final SEIS adequately address interference currents?

A. Stray DC corrosion interference testing, assessment, and mitigation is prescribed under Table 4, Special Conditions as recommended by PHMSA, page 87, item 36. The program stipulated by PHMSA should address the detection and mitigation of stray DC current effects. As interpreted, the PHMSA program requirements are considered more stringent than Part 195, Subpart H – as additional timing requirements have been established.

Q. Are there any other interference conditions that might lead to the development of corrosion on fusion bonded epoxy coated pipelines?

A. The phenomenon of AC stray current interference is becoming a more prominent concern within the industry; especially, but not exclusively, associated with FBE and/or Epoxy ARO (Abrasion Resistant Overcoat) protectively coated pipeline systems. This issue is addressed and prescribed under Table 4, Special Conditions as recommended by PHMSA, page 80, item 21. The program stipulated by PHMSA should address the detection and mitigation of stray AC current effects. As interpreted, the PHMSA program requirements stipulate that control of induced AC from parallel electric transmission lines and other interference issues (e.g., crossings, substations, transpositions or capacitive or conductive coupling (fault)) are to be incorporated into pipeline design and addressed during the construction phase. This program recommendation is also consistent with the notice contained in the DOT/OPS Advisory: 68FR64189 – 11/12/2003. If not already provided, a copy of the construction

techniques for the mitigation of AC stray current, the testing for, engineering analysis, modeling, and mitigation design for AC interference should be made available to SDPUC for record.

Q. Are there any other operational conditions that might lead to the development of corrosion on fusion bonded epoxy coated pipelines?

A. Pipeline coating requirements are prescribed under Table 4, Special Conditions as recommended by PHMSA, page 73, item 9 and on page 74, item 10 and 11. These are considered more stringent than 195, Subpart H – as additional inspection and inspection voltages are required at both the coating mill and when coating is applied at field locations. Item 15 on page 75 addresses the impact from higher operating temperatures (120-degrees F or above) and prescribes requirements for notification and operational response and follow-up testing should this occur under defined durations.

Q. Does the update made to Finding 68 violate any requirements set forth in 49 CFR Part 195 Subpart H?

A. 195.577 and 195.575 requires pipelines exposed to stray current to have a program in place to identify, test for, and minimize the detrimental effects of such currents. In addition, the design and installation of any impressed current or galvanic anode cathodic protection system must be designed to minimize any adverse effects on existing adjacent metallic structures. As such this update does not violate any requirements set forth in 49 CFR Part 195 Subpart H and does not violate the DOT/OPS Advisory: 68FR64189 – 11/12/2003 issued.

Q. Does the update made to Finding 68 violate any mandates set forth in the original or amended permit conditions?

A. As noted above, the update made to Finding 68 is adequately addressed by the incorporation of all PHMSA recommendations into the original or amended permit conditions. As such, this update does not violate any requirements set forth in the original or amended permit condition.

Q. Do any of the other project changes identified in the Tracking Table of Changes provided by Keystone violate the mandates set forth in 49 CFR Part 195 Subpart H?

A. No they do not.

Q. As they relate to 49 CFR Part 195 Subpart H, do any other project changes identified in the Tracking Table of Changes provided by Keystone violate the mandates set forth in the original or the amended Permit Conditions?

A. No they do not.

Q. Does this conclude your testimony?

A. Yes.

David A. Schramm

VP, Corrosion Control and Integrity Field Services, Integrity

Key Relevance
SME - Cathodic Protection Design
SME - Corrosion Control Field Assessments
SME - Cathodic Protection Trouble Shooting
SME - AC Mitigation Design and Analysis
SME -Atmospheric Corrosion Inspection
SME -Internal Corrosion
SME – Wall Loss Assessment (Corrosion)
SME – Coating Condition Assessment

Job Title:
VP Corrosion Control and Integrity Field Services Integrity

Years with EN Engineering: 13

Total Years of Experience: 35

Primary Office Location:
Warrenville, IL, USA

Education:

B.S., Resource Management, Iowa State University, Ames, Iowa

Professional Certifications:

- NACE Institute No. 3178 Certified Cathodic Protection Specialist
- NACE Institute No. 3178 Certified Corrosion Technologist

Overview: Mr. Schramm has over thirty-five (35) years of extensive experience in the direct and practical application of corrosion control methods, cathodic protection assessment and design, and system integrity management and field services.

Direct experience with external, internal, and atmospheric corrosion control on natural gas and liquid transmission and distribution pipeline systems, under-ground natural gas storage, under-ground storage tanks, above-grade storage tanks, power plant structures, condenser/chiller/heat exchange equipment, production and injection/withdrawal wells, lead sheath cable, underground electric cable, water transmission systems, and fresh-water marine structures

Responsible for the technical performance, quality, and operation service offerings that provide:

- Corrosion engineering analysis and design
- Cathodic protection monitoring and assessment
- Process control and measurement
- Correlation of internal “smart” tool to indirection inspection survey data
- Cathodic protection design, installation and maintenance
- AC safety and AC corrosion assessment, modeling, and mitigative design
- Computerized close interval potential survey
- Direct current and alternating current voltage gradient survey
- Stray DC interference and telluric current monitoring, measurement, and mitigation
- Coating selection and inspection
- Material selection, specification and procurement
- Technical specification and procedure
- OQ qualification and training
- Corrosion related field failure, wall loss assessment, and remaining strength evaluation
- Indirect and direct inspection program support
- Field installation oversight and inspection
- Project management and commission services
- Operational support including:
  - Leak detection
  - Purge operations
  - Watch and protect and rights-of-way inspection
  - Locating
  - High Consequence Assessment and Class Survey

Professional Organizations & Affiliations

NACE International Institute (NII)

- Chairman, Certification Committee (Board) (2012-2016)

NACE International (NACE)

- Professional Activities Director (PDAC) (Board) (2011 to 2014)
- Professional Activities (PDAC) Chair (2011 to 2014)
- Professional Activities (PDAC) Vice-Chair (2008 to 2011)
- Certification Committee Chair (2003 to 2006)
- Certification Committee Vice-Chair (2000 to 2002)
- T-10A-11: Gas Distribution Industry Corrosion Problems Chair (1997 to 2001)
- T-10A-11: Gas Distribution Industry Corrosion Problems Vice-Chair (1995 to 1997)
- SME Department of Defense (DoD) Panel on Training and Certification
- CP Interference Course Development Task Group: Cathodic Protection Interference (2006)
- Cathodic Protection Sub-Committee: Cathodic Protection Technologist (2004)
- Cathodic Protection Training and Certification Program Task Group: Cathodic Protection Level 1 (2000) and Cathodic Protection Level 2 (2000)
- Cathodic Protection Task Group: Cathodic Protection Training Program (1999 – 2000)
- Chicago Section – Special Events Chairman (1985-1986)
- Chicago Section – Membership Chairman (1986-1987)
- Chicago Regional Committee on Underground Corrosion (CRCUC) Chair and Vice-Chair
- Michigan Electrolysis Committee Chair and Vice-Chair

Corporate program support:

- ENE Health, Safety, and Environmental Committee – member
- OSHA Safety Training Programs
  - Development and documentation of program safety documents.
  - Initial creation and training of Level 0 OSHA training presentations (PowerPoint)
- Vision Accounting and Project Documentation:
  - Part of management team charged with the development of project management and project set-up (2014/2015) Vision EWMS project.
  - Developed IN proposal documentation and procedures under Opportunity section of Vision
  - Automation of reports and training of Vision to departmental Project Mangers
- Operator Qualification and Safety Records
  - Administrator for ISNETWORLD software and NCCER program audit and oversight.
  - Initial development and submittal of safety programs for RAV review
  - Initial support for Client response and safety program update.
  - Set-up and established support for Veriforce OQ programs.
- ISO 9001: 2000 Certification
  - Part of team tasked with the initial development and completion of ISO 9001 policy and procedures within EN Engineering; leading to, ISO9001: 2000 certification for the corporate office.

Relevant Projects:

Tallgrass Development
SME project direction for excavation analysis of coating and pipeline wall assessment and conductance, evaluation, and assessment if in-situ pipeline coating assessment to TMO102-2002 Standards. Direct analysis of data obtained from field and laboratory testing, written report and recommendations.

Valero Energy Corporation
SME project direction for AC Threat Assessment on 150-mile pipeline as an "active" high level management approach to evaluate both present "threat area" and future AC "threat" risk. Project included the gathering of AC voltages on the pipeline and soil resistivity at intervals not exceeding 1000-ft. AC Threat calculation, research and inclusion of historic data obtained from other sources (DFOS), generation of plots and graphs, scenario or sensitivity analysis, report, observations and recommendations.

Professional Organizations & Affiliations, cont.

National Center for Construction Education and Research (NCCER)

- Certified Master Trainer (2010)
- Certified Administrator (2010)
- Certified Craft Trainer/Evaluator: Core Curricula, Gas Pipeline Operations, Liquid Pipeline Control Center Operations, Liquid Pipeline Field Operations, Pipeline Core, Pipeline Corrosion Control, Pipeline Electrical and Instrumentation (E&I), Pipeline Maintenance, Pipeline Mechanical, Specialty Craft

Veriforce

- Authorized Evaluator

Midwest Energy Association (MEA)

- Administrator

The Society for Protective Coatings (SSPC)

- Member

Additional

- API 1161 – Task Group on Operator Qualification, Pipeline Segment – Resolution of Appreciation for contributions to the Task Group
- OSHA 510 Certified "Occupational Safety & Health Standards for the Construction Industry"
- TWIC (Transportation Workers Identification Credential)
- Clockspring Trainer/Installer Certified (2002)
- Administration Training: Assessor Training (Nicor Gas- 1994)
- Quality Awareness Training (Nicor Gas- 1993)
- Basic Corrosion Course (NACE- 1983)

Southern Star Gas Central
SME project support for 20-inch diameter natural gas pipeline damaged by 12kV AC power line arc near Joplin, Missouri including: assessment of condition, documentation of event, wall loss discovery, assessment and written report, and Client support with regulatory oversight and questions

Exxon Mobil Refinery
SME technical project support assessment of condition (cathodic protection systems), annual survey, remediation, and recommendation.

United States Gypsum
Develop, perform training, assessment and evaluation for operator qualification of Client employee resources, assess natural gas pipeline system and plant facilities, and develop initial pipeline normal operation system drawing format.

United States Gypsum
SME level support for isolation flange failure in Washington, PA including: assessment of condition, purge out of product, oversight of repairs, purge in of product, and restoration of service.

Corrosion Control Operations
Managed and directed the Corrosion Control Service Group for Nicor Technologies and Nicor Gas providing corrosion control consulting services to distribution and transmission pipelines, municipal and utility organizations, and commercial and industrial customers. Responsible for the performance of all operating corrosion control programs (internal, external and atmospheric) on the Nicor Gas pipeline system including specification, performance and day-to-day operation. As a member of the Nicor Gas welding and joining, system integrity, and code committee operating task groups provided technical expertise in pipeline integrity, research and testing, corrosion control and cathodic protection issues. Having responsibility for the due diligence corrosion control and cathodic protection evaluations on acquisition projects in Argentina and Tennessee. Developed risk, quality, and integrity management programs related to corrosion control and cathodic protection operations. Location: IL

Additional, Cont.

- Goodall Rectifier School: Goodall Electric, Inc. (1982 –
- Managing Cultural Diversity (Coleman Management Consultants (1994)
- Control, West Virginia, University (1985)
- Corrosion Prevention by Cathodic Protection (NACE– 1983)
- Effective Business Communication (IWCC – 1990)
- Appalachian Underground Course: Advanced Corrosion

Expert Witness Testimony:

- South Dakota Public Utility Commission - Testimony
  - Keystone Pipeline, October 2007- Corrosion and Protective Coating Sections and Related Code
  - Keystone XL, September 2009 – Corrosion and Protective Coating Sections and Related Code
  - Keystone XL, March, 2015 – Corrosion Protective Coating Sections and Related Code
- State of Iowa Utilities Board
  - 2002, Testimony related to AC Interference, assessment, and mitigation as it relates to: proposed pipeline construction beneath overhead AC transmission systems, Iowa.

Corrosion Control Services
Directed and coordinated the Nicor Gas corrosion control programs for distribution, transmission, and storage facilities. Directly supervision responsibility for the completion of annual corrosion control and corrosion control activities which include: annual reading programs, close interval survey, stray current interference, and impressed current rectifier system replacement.

Research Services
Managed and directed the research lab for Nicor Gas and was responsible for day-to-day operation, quality performance, testing, recommendation and approval, including the performance and analysis ASTM and ANSI test standards and methods. Directly responsible for the purge routine process for all large-diameter high- pressure pipelines. Conducted, analyzed and developed corrosion control action and recommendation for all wall loss and field failure events. Locations: IL

Lakehead Pipeline Company
Directed the completion of all annual cathodic protection reading programs, close interval survey, stray current interference, impressed current rectifier system replacement, and field failure investigations for the Lakehead Pipe Line Company over a six (6) year period on facilities that include pipeline, compression, substation, and storage facilities. Locations: ND, MN, WI, IL, MI, NY.

Portal Pipeline Company
Supervised and completed the annual cathodic protection reading program for the Portal Pipe Line Company including pipeline, gathering and wellhead systems. Location: ND

Alyeska Pipeline Service Company
In-state direction, supervision and related to the process of conducting, analyzing and performing telluric based close interval surveys for the Trans-Alaska Pipeline System (TAPS) over a four (4) year period. Direct responsible for the performance, provision, data quality, data analysis and report recommendations. Location: AK

Technical Presentations:

- PG&E – February, 2015 Technical Presentation on AC Interference and Mitigation
- NACE International, January-2015 Northern Plains Corrosion Control Short Course, Omaha, Nebraska – Speaker and presentation on AC interference and Mitigation and case examples
- USG – January, 2015 – Technical Presentation on Plant Audit Inspections
- NACE San Antonio Section Meeting, May-2014 – Speaker and presentation on AC interference and mitigation and case examples
- NACE International, January-2014 Plains Short Course (Omaha), Nebraska – Speaker and presentation on AC interference and Mitigation and case example
- NACE Wisconsin Short Course, September, 2013 – Cathodic Protection Design and Practical
- NACE Wisconsin Short Course, September, 2013 – Casings: Design and Regulations
- NACE International, August – 2013 Central Area Conference, Little Rock – Speaker and presentation on AC interference and Mitigation and case example
- Northern Natural Gas (NNG) Spring Corrosion Round Table – 2013: AC Interference and Mitigation Training (Minneapolis, Des Moines, El Paso)
- Northern Natural Gas (NNG) Spring Corrosion Round Table – 2013: CIS/ECDA Defect and Interpretation
- AGA/SPE, March 2012 – Identification and Prevention of Corrosion in Gas Storage Gathering Facilities

Desert Generation and Transmission Company
Supervised, conducted and performed the design and testing services for the Deseret Generation and Transmission Company. Planned and performed a wide variety of duties involving the evaluation, design, and installation of cathodic protection systems to inhibit corrosion on pipelines, tanks, and similar underground and submerged structures including electrical continuity and protection of concrete steel cylinder pipe. Locations: UT

Mobil Oil
Conducted and analyzed all underground facilities for the potential application of cathodic protection for the Mobil-Joliet Refinery. Operational and performance responsibilities related to installation of new and existing cathodic protection systems: design, redesign, and installation of impressed current systems for tank bottoms. Location: IL

Montana Power
Conducted, analyzed and performed close interval and leak detection surveys on large diameter - high pressure – natural gas transmission pipelines owned and operated by Montana Power near Helena, Montana. Location: MT

Northern Natural Gas
Conducted, analyzed and performed close interval surveys on large diameter - high pressure – natural gas transmission pipelines owned and operated by Northern Natural Gas (NNG) in the Upper Peninsula of Michigan. Location: MI

Mountain Bell Telephone
Supervised, conducted, analyzed and performed the corrosion control and cathodic protection analysis of the Mountain Bell Telephone lead sheath cable running between Evanston and Cheyenne. Locations: WY

Coffeen Power Plant
Supervised, conducted, analyzed, designed and installed cathodic protection systems for the Coffeen Power Plant Facilities operated by the Central Illinois Light Company (CILCO). Location: IL

Technical Presentations, cont.

- NACE Wisconsin Section – Annual Short Course – 2013: Speaker and presentation on Cathodic Protection Design and Practical's and Casings: Design and Regulations
- NACE Wisconsin Section – 2012: Speaker and presentation on AC interference and Mitigation and a case example related to a 12-inch and 20-inch pipeline system.
- 51st. Annual Underground Corrosion Short Course: Speaker and presentation on AC issues on Pipelines presented under the System Integrity section, Purdue University, 2012
- 51st. Annual Underground Corrosion Short Course: Pipeline Casing Presentation, 2012
- 51st. Annual Underground Corrosion Short Course: Station Assessment Procedures, 2012
- EPRI/Southwest Research: June 2010, Copper Grounding Presentation
- China International Oil and Gas Pipeline Conference, Langfang, Hebel, China, November-2009: Safety and Operability Assessment Report and HAZOP Study Report (PetroChina),
- China International Oil and Gas Pipeline Conference, Langfang, Hebel, China, November-2009: ECDA Implementation Case Study – Pipeline Integrity and Corrosion Control Technology
- NACE International, March, 1991 – The Development and Conversion to an "On-line" Corrosion Control Records System Using a Burroughs Mainframe Computer, Corrosion 91, Paper Number 346, NACE International

LaGrange Hospital
Designed, analyzed and supervised the installation of galvanic anode systems designed to protect the interior water box of condenser/chiller units operated by the LaGrange Hospital. Location: IL

Union 76
Supervised, conducted and analyzed the cathodic protection systems installed on over 250 underground gasoline and waste oil storage tanks systems owned and operated by Union 76. Locations: IL, KY, IN

O'Hare Airport
Designed and supervised the installation of galvanic anode protection systems for aviation fuel pipelines related to jet-way expansions. Responsible for the cathodic protection assessment, design, and mitigation on jet-way expansions of the G & H terminals as well as field supervision on the United Airlines terminal 1 construction project. Locations: IL

City of Viburnum
Designed and supervised the installation of down-hole impressed current systems for the City of Viburnum including the protection of water well casing, column and bowls. Location: MO

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF JENNY HUDSON
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. Please state your name and business address.

A. My name is Jenny Hudson. My business address is 28100 Torch Parkway, Warrenville, Illinois, 60555.

Q. By whom are you employed and in what capacity?

A. I am employed as a Vice President-Senior Project Manager by EN Engineering, an engineering and consulting firm specializing in pipeline design, codes compliance, integrity and automation services for the oil and gas industry.

Q. Please describe your educational background and professional experience.

A. I hold a B.S. degree in Geological Engineering from the University of Missouri-Rolla. Additionally, I am a registered Professional Engineer in the State of Illinois as well as a registered NACE Cathodic Protection Technologist.

My professional experience consists of employment in the pipeline industry with EN Engineering and previously with Nicor Gas. While at Nicor Gas I had roles in the Storage Department as well as in the Corrosion Control Department. At EN Engineering, my responsibilities have been focused in the areas of pipeline integrity, codes compliance and corrosion control. Additionally, I am a member of several industry technical committees. My resume is included in Exhibit___JH-1.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. Please state the purpose of your testimony in this proceeding.

A. There are three main objectives of the Staff in this testimony. First, to ensure that the proposed changes to the Findings of Fact in the Decision, as identified by TransCanada Keystone Pipeline's (the Applicant) Tracking Table of Changes, comply with the Federal Pipeline Safety Regulations 49CFR 195, Transportation of Hazardous Liquids by Pipeline. Secondly, the objective is to ensure that the Applicant has met any new requirements imposed by the Federal Pipeline Safety Regulations 49CFR 195 since the Amended Final Decision and Order was issued on June 29, 2010 with respect to the application for a permit (Permit) to construct and operate a crude oil pipeline in South Dakota. Lastly, the objective is to ensure that the amended permit conditions, and any project changes, are still able to meet the conditions upon which the permit was issued, specifically focusing on pipeline design, integrity management and compliance with PHMSA regulations (49CFR 195).

This testimony deals specifically with changes to Federal Pipeline Safety Regulations 49CFR 195 since the Amended Final Decision and Order was issued and project changes specific to the area of Integrity Management (§195.452).

Q. Please describe any changes to federal pipeline safety regulations since the Amended Final Decision and Order was issued on June 29, 2010.

A. Since the proposed Keystone Pipeline is a hazardous liquid pipeline, I will describe any changes to Part 195 – Transportation of Hazardous Liquids by Pipeline.

As part of Amendment 195-94, which went into effect October 1, 2010, section 195.207 was added as a new section covering the transportation of pipe by railroad, ship or barge. This amendment also revised sections 195.3, 195.116, 195.264, 195.307, 195.401, 195.432, 195.452, 195.571, 195.573, and 195.588. Per the Federal Register notice, these amendments did not require pipeline operators to take on any significant new pipeline safety initiatives.

On January 1, 2011, changes to Part 195 went into effect as part of Amendment 195-95. These changes addressed the National Registry of Pipeline and LNG Operators and reporting requirements. As part of the changes, new section 195.64 was added, section 195.62 was removed, and updates were made to sections 195.48, 195.49, 195.52, 195.58 and 195.63. The intent of these changes was to enhance the Pipeline and Hazardous Materials Safety Administration's (PHMSA) ability to understand, measure and assess the performance of individual operators and the industry in its entirety, as well as to expand and simplify the electronic reporting required of operators.

As part of Amendments 195-96 and 195-96C, changes were made to apply safety regulations to rural low stress hazardous liquid pipelines that were not previously covered by safety regulations. Section 195.12 was rewritten to address these new requirements. Changes were also made to sections 195.1 and 195.48. These changes went into effect October 11, 2011 and were made in

order to comply with a mandate provided in the Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006.

Amendment 195-97 expedited certain implementation dates pertaining to the Control Room Management regulations contained in section 195.446. The rule went into effect August 15, 2011.

Amendment 195-98, which went into effect October 25, 2013, updated the administrative civil penalty maximums for violation of the safety standards and made technical corrections and updates to certain administrative procedures. This amendment made changes to section 195.402.

Amendment 195-99, which went into effect March 6, 2015, incorporated by reference new, updated or reaffirmed editions of applicable consensus standards subject to the regulations, and also made non-substantive editorial corrections clarifying code language in certain sections. This amendment added new section 195.207 addressing requirements for the transportation of pipe by truck. Additionally, changes to the following sections were made: 195.5, 195.406, 195.3, 195.106, 195.116, 195.118, 195.124, 195.132, 195.134, 195.205, 195.214, 195.222, 195.228, 195.264, 195.307, 195.405, 195.432, 195.444, 195.452, 195.565, 195.573, 195.579 and 195.587. Per the Federal Register notice, these amendments did not require pipeline operators to take on any significant new pipeline safety initiatives.

Of additional note is Amendment 195-93. This amendment added a new section to Part 195 addressing Control Room Management. While the effective date of this ruling was February 1, 2010, which was prior to the Amended Final Decision and Order being issued, the regulation did not require operators to have Control Room Management procedures developed until August 1, 2011. As a result, Control Room Management was not directly discussed during the prior proceedings.

Q. Numerous sections of code were referenced previously as being modified. Were these changes significant?

A. The majority of the changes were clarifications in code language, editorial corrections, modifications to the way industry standards are referenced in the regulation and incorporating by reference updated or reaffirmed versions of industry standards. As an example, prior to Amendment 195-99, section 195.132 used the term “API Standard 620”. After the amendment, section 195.132 read “API Std 620”. However, there were some changes that could be considered more substantive, which I will discuss below.

Changes to section 195.1, made as part of Amendment 195-96, provided for a complete rewrite of the section. This section identifies which pipelines are covered by Part 195. The primary impact was the inclusion of all rural onshore hazardous liquid low stress and certain gathering pipelines under the regulation.

Changes to 195.12, made as part of Amendment 195-96, address changes to the requirements for rural low stress pipelines.

Changes to 195.64, made as part of Amendment 195-95 added reporting requirements to operators as they relate to the National Registry of Pipeline and LNG Operators.

Changes to 195.207, as made by Amendment 195-94, added this section covering the transportation of pipe by railroad, ship or barge. Amendment 195-99 added requirements for the transportation of pipe by truck.

Changes to 195.432, made as part of Amendment 195-99 added significant detail to paragraph (b) regarding internal inspection interval of in-service breakout tanks.

Amendments 93 and 97 added requirements pertaining to Control Room Management.

Q. Please describe how the changes to Part 195, described previously, will have an effect on the proposed Keystone Pipeline?

A. As mentioned previously, the majority of the changes were not substantive in nature and as a result, have minimal impact on the requirements for the design, integrity management and implementation of Part 195 requirements, as they

relate to the proposed Keystone pipeline. However, there are some changes that will.

Since the Amended Final Decision and Order was issued on June 29, 2010, changes to 49 CFR Part 195 have required operators to develop and implement a Control Room Management Plan. Control Room Management requirements were not specifically addressed in the prior proceedings. The Control Room Management Regulations will be described in more detail by Mr. Chris Hughes.

Through use of the National Registry of Pipeline and LNG Operators, Keystone will be required to notify PHMSA no later than 60 days before construction on the pipeline begins. This is addressed in 195.64(c)(1)(ii).

Transportation of pipe will need to be per the mandates set forth in section 195.207.

Significant changes relative to rural low stress pipelines were made to the federal pipeline code; however, since the proposed Keystone pipeline is not a rural low stress rural line, those regulatory changes do not have an impact on this proceeding.

Changes related to breakout tanks were made to the federal pipeline code; however, Keystone has stated there will be no tank facilities constructed in South Dakota. As a result, there is no impact relevant to these proceedings.

Q. Keystone updated project specifications as they relate to Finding 50 in the Amended Final Decision and Order to state 19.9 miles of the proposed pipe in South Dakota have the potential to impact a High Consequence Area. Previously Keystone had stated a spill had the potential to impact 34.3 miles of HCA. Can you please describe the impact this change has?

A. As a result of the change, less pipe in the state of South Dakota will be subject to integrity management regulations (195.452) due to less pipe having the potential to impact a High Consequence Area in the event of a pipeline release.

Q. Does this change violate any requirements set forth in 49 CFR Part 195?

A. Presuming the revised HCA analysis was performed in accordance with Part 195, it does not.

Q. Does this change violate any mandates set forth in the original or amended permit conditions?

A. Presuming the revised HCA analysis was performed in accordance with Part 195, it does not.

Q. Do any of the other project changes identified in the Tracking Table of Changes provided by Keystone violate the mandates set forth in 49 CFR 195.452?

A. No they do not.

Q. As they relate to 49 CFR 195.452, do any other project changes identified in the Tracking Table of Changes provided by Keystone violate the mandates set forth in the original or the amended Permit Conditions?

A. No they do not.

Q. Does this conclude your testimony?

A. Yes.

Jenny Hudson, PE
Vice President – Integrity

Key Relevance
Integrity Management
Compliance and Best Practice Audits
Risk Assessment and Prioritization
MAOP / MOP Verification
Integrity Assessments

Job Title:
Vice President
Integrity

Years with EN Engineering: 13

Total Years of Experience: 15+

Primary Office Location:
Warrenville, IL

Education:

- B.S., Geological Engineering, University of Missouri, Rolla, Missouri, 1997

Professional Registration:

- IL

Overview: Ms. Hudson has over fifteen (15) years of pipeline integrity, codes compliance, and corrosion control experience with natural gas and hazardous liquid pipeline systems. Experience includes developing pipeline integrity procedures, participating in and providing assistance with jurisdictional audits, providing expert testimony, implementing External Corrosion Direct Assessment (ECDA) and Internal Corrosion Direct Assessment (ICDA) methodologies, developing Control Room Management plans and procedures and records verification.

Relevant Projects:

Southern Star Central Gas Pipeline – Integrity Management
Develop written integrity management plan procedures and supporting documentation to meet the requirements of Subpart O. Facilitate operator committee meetings to review, finalize and implement procedures within the organization. Develop and provide training to operator personnel on new plans and procedures.

Southern Star Central Gas Pipeline – Integrity Management
Facilitate operator preparation for PHMSA jurisdictional integrity management audit. Actively participate in jurisdictional audit as client representative.

Vectren Energy Delivery – Integrity Management
Develop and modify written integrity management plan procedures and supporting documentation. Facilitate operator committee meetings to review, finalize and implement procedures within the organization. Develop and provide training to operator personnel on modified and new processes and procedures.

Vectren Energy Delivery – Integrity Management
Provide support on pipeline integrity issues as well as External Corrosion Direct Assessment and Internal Corrosion Direct Assessment.

Southwest Gas – Integrity Management
Manage team and perform audit of integrity management program to identify code compliance and best practice issues. Review included manual and procedure review, personnel interviews and documentation review.

South Dakota Public Utilities Commission - Integrity Management
Provide expert testimony on integrity management issues related to hazardous liquid pipelines on two occasions.

United States Gypsum - Integrity Management
Manage and oversee integrity management program including HCA identification, threat analysis and integrity assessment. Actively participate in jurisdictional integrity management audit as client representative.

DTE/MichCon - Integrity Management
Perform jurisdictional review of integrity management program including code compliance and best practice recommendations. Make modifications to ECDA plan.

Professional Organizations & Affiliations:

- ASME B31.8 Corrosion / O&M Subgroup
- AGA Transmission Pipeline Operations
- AGA Corrosion Control

Publications & Patents:

- Co-Author of "Cathodic Protection of a Large-Diameter Distribution System: Corrosion Monitoring and Testing", American Water Works 2004 DSS Conference
- Co-Author of "New Distribution Regulations Promote Risk Analysis", American Public Gas Association, 2008
- Presentation for NACE Central Area Conference, 2008
- Presentation for Kentucky Gas Association, 2008
- Presentation for Illinois American Water Works Association, 2010
- Presentation for AGA Operations Conference, 2012

Professional Certifications:

- NACE – International Cathodic Protection Technologist (CP Level 3)

Relevant Projects (Cont'd):

Northern Natural Gas - Integrity Management
Facilitate mock integrity management audit. Evaluated oral responses as well as written documentation and provided feedback in order to help operator prepare for jurisdictional audit.

Aux Sable Liquids Products - Integrity Management
Oversee development of liquid integrity management plan.

Oklahoma Natural Gas - Integrity Management
Perform gap analysis of written integrity management plan. Furnish documented feedback on plan including recommended modifications.

NIPSCO – Integrity Management
Oversee modifications to Transmission Integrity Management Program. Facilitate mock audit and participate in state jurisdictional audit.

Tesoro – Pipeline Safety
Perform pipeline risk management, procedure and management practice audit. Audit included review of written plans, personnel interviews and review of documentation. Formal close-out presentation given to upper management.

NIPSCO – Pipeline Safety
Perform audit of pipeline safety programs, including evaluation of written procedures, personnel interviews and documentation review.

Confidential Client - Due Diligence
Perform data research and integrity evaluation for potential buyer of pipeline assets.

NIPSCO – System Risk and Prioritization
Provide technical support for rate recovery filing including review of methodology used to select projects to reduce system risk and independent review of project cost estimating methodologies. Interact with legal counsel and state jurisdictional agencies.

Vectren – System Risk and Prioritization
Provide technical support for rate recovery filing including review of methodology used to select projects to reduce system risk and independent review of project cost estimating methodologies.

American Gas Association (AGA) – Integrity Management
Organized a study of the potential impact of increased testing requirements on AGA member companies as well as industry as a whole. Analyzed cost, timelines, configuration, inspectability, resource availability, and other barriers. Utilized PHMSA Transmission Annual Report data further substantiated through detailed interviews with subset of AGA member companies.

Ameren – MAOP Verification
Oversee team performing records research, gap analysis and data evaluation related to MAOP verification.

Relevant Projects (Cont'd):

Pacific Gas and Electric - ASV/RCVs
Performed a review of the use of Automatic Shut-off Valves (ASV) and Remote Control Valves (RCV) including industry best practice, survey of natural gas transmission and distribution companies regarding their experiences with ASVs and RCVs, alternatives and merits of available technologies, pertinent industry literature and regulations. Identified individual valve segments within the transmission system and prioritized based on risk factors.

Southern Star Central Gas Pipeline - Training
Administer training related to corrosion control field testing.

Duke - Distribution Integrity Management
Oversee development of Distribution Integrity Management Plan.

Peoples Natural Gas - Distribution Integrity Management
Oversee development of Distribution Integrity Management Plan Procedures.

PECO – Distribution Integrity Management
Perform review of Distribution Integrity Management Program.

Southern Star Central Gas Pipeline - External Corrosion Direct Assessment Manage implementation of External Corrosion Direct Assessment methodology as well as review and analyze data. Provide support for Long Range Ultrasonic Testing including procedure development and notification to PHMSA.

Nicor Gas – ECDA / ICDA
Management and implementation of External Corrosion Direct Assessment and Internal Corrosion Direct Assessment projects. Provide support for Long Range Ultrasonic Testing including procedure development and notification to PHMSA.

Nicor Gas - ECDA
Perform direct examinations as part of ECDA process.

DTE/Michcon - ECDA / ICDA
Management and implementation of External Corrosion Direct Assessment and Internal Direct Assessment projects. Provide support for Long Range Ultrasonic Testing.

United States Gypsum - ECDA / ICDA
Manage External Corrosion Direct Assessment and Internal Corrosion Direct Assessment projects to meet federal mandates.

United States Gypsum - Pipeline Operations
Develop jurisdictional manuals including Integrity Management Plan, Operation and Maintenance, Emergency Response.

Dominion - Audit / Review
Participate on team reviewing various client station assets. Focus was on corrosion control codes compliance and best practice issues.

Relevant Projects (Cont'd):

United States Gypsum - Audit / Review
Participate on team reviewing various client pipeline assets. Focus was on corrosion control codes compliance and best practice issues.

Duke - Control Room Management
Oversee modifications to existing control room management plan.

Integrys - Control Room Management
Oversee development of control room management plans.

DTE/Michcon - Control Room Management
Oversee development of control room management plan.

Northern Natural Gas - AC Mitigation
Develop plan and procedures related to AC corrosion and AC mitigation.

Nicor Gas - Corrosion Control
Perform annual cathodic protection surveys. Obtain rectifier readings and bond readings.

Nicor Gas - Corrosion Control
Perform close-interval survey and direct current voltage gradient survey.

Du Page Water Commission - Corrosion Control
Develop and assist with corrosion control program. Activities include establish monitoring program, cathodic protection design, data review, data analysis and corrosion control consulting. Field testing for steel and PCCP water transmission mains including structure-to-electrolyte readings, AC readings, isolation flange testing, Panhandle Eastern Testing, stray current interference testing and close-interval survey.

Northwest Suburban Municipal Joint Action Water Agency - Corrosion Control Evaluation of cathodically-protected PCCP water transmission main. Testing included close-interval survey (on, instant off and depolarized), isolation flange testing and cathodic protection test point readings. Project also included analysis of data and recommendations.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF CHRISTOPHER HUGHES
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. Please state your name and business address.

A. My name is Christopher Hughes. My business address is 28100 Torch Parkway, Warrenville, Illinois, 60555.

Q. By whom are you employed and in what capacity?

A. I am employed as a Senior Project Manager by EN Engineering, an engineering and consulting firm specializing in pipeline design, codes compliance, integrity and automation services for the oil and gas industry.

Q. Please describe your educational background and professional experience.

A. I hold a M.S. degree in Welding Engineering from The Ohio State University in Columbus, Ohio. In addition, I hold a B.S. degree in Mathematics from the Ohio Dominican University in Columbus, Ohio.

My professional experience consists of employment in the pipeline industry with EN Engineering and previously with the U.S. Army, Columbia Gas, CC Technologies / DNV and Enterprise Products. My responsibilities in the Army included operation and management of storage facilities and the design and construction of temporary pipelines. At Columbia Gas my responsibilities included natural gas pipeline operations via SCADA, statistical and forecast analysis, and cost analysis. My responsibilities at CC Technologies / DNV included material testing, failure analysis, stress corrosion cracking analysis, pipeline repair research and presentation as well as report, plan and procedure writing. At Enterprise Products my responsibilities included integrity assessment type determination, Information Analysis, annual reporting, evaluate defects and recommend appropriate repairs and other implementation of the Integrity

Management Program for hazardous liquids. My responsibilities at EN Engineering have been focused in the areas of control room management and pipeline integrity.

My resume is included in Exhibit___CH-1.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. Please state the purpose of your testimony in this proceeding.

A. There are three main objectives of the Staff in this testimony. First, to ensure that the proposed changes to the Findings of Fact in the Decision, as identified by TransCanada Keystone Pipeline's (the Applicant) Tracking Table of Changes, comply with the Federal Pipeline Safety Regulations 49CFR 195, Transportation of Hazardous Liquids by Pipeline. Secondly, the objective is to ensure that the Applicant has met any new requirements imposed by the Federal Pipeline Safety Regulations 49CFR 195 since the Amended Final Decision and Order was issued on June 29, 2010 with respect to the application for a permit (Permit) to construct and operate a crude oil pipeline in South Dakota. Lastly, the objective is to ensure that the amended permit conditions, and any project changes, are still able to meet the conditions upon which the permit was issued, specifically focusing on pipeline design, integrity management and compliance with PHMSA regulations (49CFR 195).

This testimony deals specifically with changes to Federal Pipeline Safety Regulations 49CFR 195 since the Amended Final Decision and Order was issued in the area of Control Room Management (§195.446). Additionally, this testimony addresses updates made by Keystone in the Tracking Table of on two specific Findings of Fact.

Q. Control Room Management regulations went into effect February 1, 2010 which required operators to have a Control Room Management Plan and procedures developed by August 1, 2011. An additional Control Room Management / Human Factors rule effective August 15, 2011 required operators to implement the procedures for roles and responsibilities, shift change, change management, and operating experience, fatigue mitigation education and training by October 1, 2011 and the other procedures for adequate information, shift lengths, maximum hours-of service, and alarm management by August 1, 2012. Please describe the Control Room Management regulations.

A. The Control Room Management regulations prescribe safety requirements for controllers, control rooms, and SCADA systems used to remotely monitor and control pipeline operations. The regulations address human factors, engineering and management solutions for the purpose of enhancing the performance reliability of operator personnel that control pipeline operations. Each operator must have and follow written control room management procedures that implement the requirements of §195.446 including (a) roles and responsibilities of CRM staff, (b) implement API RP 1165, (c) point to point verification between

SCADA and field equipment, (d) testing of back-up systems, (e) personnel fatigue mitigation, (f) alarm management plan and procedures, (g) change management procedures, and (h) incorporation of operator experience and training.

Q. How do these regulations compare to requirements set forth in the DOS final SEIS, Appendix Z, which Keystone has stated they will comply with?

A. The requirements set forth in the DOS final SEIS, Appendix Z comply with these regulations.

Q. Have you reviewed a copy of the Keystone Control Room Management Plan or Alarm Management Plan?

A. No I did not. However, these plans are subject to review by the Pipeline and Hazardous Materials Safety Administration (PHMSA) during a jurisdictional audit.

Q. Keystone updated project specifications as they relate to Finding 18 in the Amended Final Decision and Order to utilize API 5L X70M high-strength steel. Previously Keystone was planning on utilizing API 5L X70 or X80 high strength steel. Does this change violate any requirements set forth in 49 CFR Part 195?

A. 49 CFR Part 195 requires pipe be manufactured per the requirements of API Standard 5L, 44th edition. The most current edition of the API standard uses the suffix M to indicate Thermomechanical Rolled or Formed pipe. Assuming the pipe is manufactured per the requirements of the 44th edition, this change does not violate 49 CFR Part 195.

Q. Does this change violate any mandates set forth in the original or amended permit conditions?

A. Assuming the pipe is manufactured per the requirements of the 44th edition, it does not.

Q. Keystone updated project specifications as they relate to Finding 20 in the Amended Final Decision and Order to include twenty (20) mainline valves in the state of South Dakota, all of which will be remotely controlled. Previously, the design included sixteen (16) mainline valves, seven (7) of which were to be remotely controlled. Please describe the differences, if any, these changes have on pipeline safety.

A. This decision enhances pipeline safety as the decision to have all valves remotely controlled decreases the time to close the valves in the event of a rupture and the increased number of valves reduces the potential spill volume.

Q. Does this change violate any requirements set forth in 49 CFR Part 195?

A. No.

Q. Does this change violate any mandates set forth in the original or amended permit conditions?

A. No.

Q. Does this conclude your testimony?

A. Yes.

Christopher Hughes
Senior Project Manager – Integrity

Key Relevance
Liquids Integrity Management
Control Room Management
Information Analysis
Integrity Assessments
Fitness for Service
MAOP/MOP Verification
Regulatory Compliance
Project Management

Job Title:
Senior Project Manager
Integrity

Years with EN Engineering: 3

Total Years of Experience: 25

Primary Office Location:
Warrenville, IL / Houston, TX

Education:

- MS, Welding Engineering
  The Ohio State University
- BS, Mathematics
  Ohio Dominican University

Professional Organizations & Affiliations:

- American Petroleum Institute
- American Society of Mechanical Engineers
- NACE

Overview: Mr. Hughes has twenty five (25) years of experience in engineering, management, operations, sales, and education. He has fourteen (14) years of experience in asset integrity and operations specific to the energy industry. Experienced in pipeline analysis, CRM, FFS, and RCA as well as regulatory compliance.

Relevant Projects:

Control Room Management
Project Manager
Implemented and managed multiple CRM projects involving plan audits, gap analysis, plan development and alarm rationalization for multiple natural gas distribution companies.

Integrity Management Program
Project Manager
Implemented and managed multiple IMP projects involving gap analysis, plan audits and procedure & plan development for multiple companies for both hazardous liquid and natural gas assets.

Fitness for Service
Project Manager, Engineer
Manage a multi-disciplinary approach to evaluate structural components to determine if they are fit for continued service due to flaws, damage or severe operating conditions at defined maximum operating pressures for natural gas and hazardous liquid pipelines.

MAOP / MOP Verifications
Project Manager
Implemented and managed a multi-million dollar MAOP/MOP Standardization projects involving multiple teams in multiple locations to document and ensure compliance of natural gas transmission systems and hazardous liquid pipelines. Performed due diligence of pipeline material, pump location and pressure testing records, performed calculations, and determined appropriate MOP / MAOP per 49 CFR 192 and 49 CFR 195.

Information Analysis
Project Manager, Engineer
Managed and performed comprehensive review of pipeline information regarding potential impact of release, HCAs, historical data, age, product type, pipeline characteristics, terrain, response times, coating and other available information to accurately recommend assessments, program reviews and revisions, remediation and other risk factors for both natural gas and hazardous liquid pipelines.

Regulatory Compliance
Project Manager, Engineer
Spearheaded multi-departmental diagnostic review of regulatory status of company assets and implementation of changes resulting in the most comprehensive regulatory status inventory to date. Coordinated and implemented PHMSA and API annual reports.
Review of regulatory status and physical properties of client onshore and offshore assets to provide third party opinions regarding jurisdiction and applicable assessments.

Relevant Projects (Cont'd):

Operating Procedure / Qualification
Project Manager
Procedure and OQ development and maturation including welding, operator qualification and liquids Integrity Management Program procedures.

Material Testing
Engineer
Supervised destructive testing of pipe and weld samples including physical and chemical analysis for various clients. Performed metallography of samples and provided full analysis of results and recommendations.

ECDA / ICDA
Project Manager
Management and implementation of External Corrosion and Internal Corrosion Direct Assessment projects for both natural gas and hazardous liquid operators.

Workshops
Engineer
Coordinated national association's training in Pipeline Repair facilitating all schedules and the acquisition of speakers / demonstrators and caterers ensuring a successful two day experience. Delivered presentations on pipeline repair methods.

National Manuals
Engineer
Part of team that developed the DOT Pipeline Repair Manual and TTO5 as well as a contributing author.

Acquisition Due Diligence
Engineer
Coordinated with Commercial Engineering departments to develop acquisition valuation of potential pipeline acquisitions. Performed document due diligence.

Stress Corrosion Cracking Analysis
Engineer
Analyzed the factors contributing to SCC found on line pipe, determining likely causes and areas of risk for hazardous liquid pipelines.

Previous Employment

Enterprise Products Partners - Houston, TX
Pipeline Integrity Engineer
Led pipeline integrity efforts and programs in pipeline risk management and analysis. Implemented and matured the written Integrity Management Programs, standards and procedures improving efficiency. Coordinated and implemented PHMSA and API annual reports helping improve industry knowledge and safety. Matured and strengthened the assessment method selection process improving assessment data quality.
Recommended preventive and mitigative measures; determined re-assessment interval and methods through informational analysis of pipelines while maintaining system safety and regulatory compliance. Provided Engineering support including welding calculations, material selection, sizing, test pressure, MOP/MAOP/Set Point calculations, evaluation of defects and recommend appropriate repairs improving overall pipeline safety. Provided input to new construction of pipelines and due diligence supporting Pipeline Integrity safety and regulation efforts.

DNV – Columbus (formerly CC Technologies) - Dublin, OH
Staff Engineer
Developed, managed, and implemented projects for oil and gas companies resulting in successful completion on time and within budget. Directed engineers to perform applicable testing / research providing clients with detailed analysis. Analyzed pipeline designs, noted areas of concern, and recommended changes maintaining regulatory compliance. Managed and organized national association's training in Pipeline Repair facilitating all schedules and the acquisition of speakers / demonstrators and caterers.
Tested physical and chemical properties of welds, materials, and coatings providing recommendations to clients. Employed Engineering Critical Assessment methods, calculated remaining life and fatigue, determined corrosion high-risk areas, proposed solutions, and verified code compliance improving compliance and safety of client pipelines.
Developed repair, material testing, and welding manuals and procedures used by the U.S. government and various pipeline companies. Delivered presentations on pipeline stress, corrosion, and repair to clients and students

Columbia Gas - Columbus, OH
Gas Controller
Calculated cost and benefit analyses of operating strategies optimizing profitability. Performed statistical, trend, and forecast analysis for pipeline operations ensuring safe delivery of sufficient supply. Coordinated pipeline flow via SCADA ensuring uninterrupted natural gas supply to commercial markets. Trained new Gas Controllers. Established and maintained SCADA alarms. Created CADD drawings for new SCADA system. Responsible for day to day operations of the Columbia Gas System.

U.S. Army & U.S Army Reserve
Petroleum Specialist / Combat Engineer
Managed facility personnel maintaining integrity of storage tanks and pipelines as section leader and squad leader. Analyzed and managed purchasing and inventory, ensuring combat ready supplies. Constructed and managed mobile pipelines to maintain fuel supplies in the field. Operated heavy machinery as part of construction, demolition of structures, earth movement and fuel transportation.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF PAIGE OLSON
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. State your name.

A. Paige Olson.

Q. By who are you employed?

A. State of South Dakota.

Q. For what department or program do you work?

A. State Historic Preservation Office (SHPO)

Q. Please explain the program goals and your role and duties within SHPO.

A. The National Historic Preservation Act of 1966 is the foundation for the preservation work of the South Dakota State Historical Society (SDSHS). The State Historic Preservation Office (SHPO), a program under the SDSHS is charged to survey historic properties and maintain an inventory; identify and nominate properties to the National Register of Historic Places; advise and assist federal, state, and local government agencies in fulfilling their preservation responsibilities; provide education and technical assistance in historic preservation; develop local historic preservation programs, consult with federal and state agencies on their projects affecting historic properties; and advise and assist with rehabilitation projects involving federal assistance. My specific role is to monitor federally funded, licensed or permitted projects and to ensure historic properties are taken into consideration. I provide technical analyses, reviews and assistance to government agencies to ensure compliance with state and federal guidelines. I serve as the lead over the review and compliance function of SHPO.

From Class Specifications

Functions: (These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)

1. Reviews construction work plans for federally funded projects to determine if they are in compliance with state and federal preservation laws.

a. Assesses impact of the project on historic properties and ensures those properties are given due consideration during the planning and implementation of projects.

b. Concurs or disagrees with determinations of eligibility for historic properties and the effect of proposed project on those properties within legally mandated timelines.

c. Reviews archaeological survey reports and documentation submitted by principal investigators and Senior Archaeologists to determine if proper methodology and standards established by state and federal government are met.

d. Works with agency officials to determine appropriate mitigation techniques when resources cannot be avoided.

e. Negotiates with and assists agencies in developing legal agreements to mitigate effects to historic properties and agreements to provide for alternative review and compliance procedures.

2. Provides technical assistance to government officials, contractors, lending institutions and agencies, and the general public to help them understand federal and state laws and to suggest compliance requirements

.

a. Reviews survey reports developed for construction projects to determine if findings are in compliance with appropriate federal and state rules and regulations.

b. Monitors additions, deletions, or changes in interpretation of federal rules and regulations.

c. Writes and recommends guidelines for government agencies or federal fund recipients.

d. Compiles and analyzes data from a variety of sources to determine if agencies are having difficulty complying with requirements.

e. Maintains a record of all determinations about construction projects to be used as the basis of reports and future federal funding requests.

3. Prepares and writes comprehensive plans to manage cultural resources in South Dakota and establish guidelines to ensure that cultural resources are identified and protected.

a. Determines eligibility of archaeological sites and makes recommendations for their inclusion in the National Register of Historic Places and contributes research to a statewide comprehensive historic preservation plan.

b. Responds to requests from property owners, government agencies, and others to provide technical information about significance of sites.

4. Develops effective public information programs to inform South Dakota citizens about archaeology, pre-history, and the need to preserve South Dakota's cultural heritage.

a. Develops and manages public education programs to inform amateur archaeology groups, students, and the general public.

b. Designs and develops educational handouts, brochures and presentations.

c. Manages and participates in archaeological excavation projects to maintain a working knowledge of South Dakota pre-history and to mitigate the impact of development on significant sites.

5. Oversees the maintenance of a computerized system that tracks information relating to archaeological sites in order to provide an accurate and effective data base for research projects.

6. Provides work direction and training for review and compliance program staff to ensure projects are reviewed in an accurate, consistent and timely manner.

a. Establishes program priorities.

b. Assigns and reviews work.

c. Sets goals and recommends changes in work plans.

d. Develops office procedures.

e. Recommends the hiring of new staff.

f. Makes budget recommendations.

7. Performs other work as assigned.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission

Q. Were you involved in the Keystone XL permitting docket, HP09-001?

A. Yes.

Q. State and explain the South Dakota laws and federal regulations that protect archaeological and historic resources in this state.

A. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their project on historic properties. The federal regulations 36 CFR part 800 – Protection of Historic Properties explain how federal agencies take into consideration historic properties. In general, Section 106 is a four step process.

Step 1: Initiate Section 106 Process – the federal agency establishes if it has a federal undertaking. (A federal undertaking in general is any project, activity, or program funded, permitted or licensed by a federal agency. This also includes federal approval.) The agency determines if the federal undertaking has the potential to affect historic properties. (Historic properties are prehistoric or historic district, site building, structure, or object listed on the National Register of Historic Places or eligible for listing on the National Register. This term includes properties of religious and cultural significance to Indian tribes.) If the federal undertaking does not have the potential to affect historic properties the agency is done. If the agency determines the undertaking does have the potential to affect historic properties they go to step 2.

Step 2: Identify Historic Properties – the federal agency identifies historic properties within the project area or area of potential effect (APE). If after conducting the appropriate level of research the agency determines that no historic properties are located within the APE, the agency documents their

findings and exits the process. If however, historic properties are identified the agency moves to the next step.

Step 3: Assess Adverse Effect – if historic properties are identified in the APE, the federal agency determines how the project will impact the identified properties. If the project can be modified or conditions are imposed as to minimize the impact of the project on historic properties the federal agency may determine the project will have a “No Adverse Effect”. If this is the case, the agency consults with the consulting parties, documents their decision, and exits the process. However, if the agency determines the project will have an “Adverse Effect” on historic properties the agency moves to the final step.

Step 4: Resolution of Adverse Effect – the federal agency, in consultation with other consulting parties, develops a memorandum of agree to mitigate the adverse effects.

Throughout this process the federal agency should be consulting with various parties as described in the regulations.

South Dakota Codified Law 1-19A-11.1Preservation of historic property – Procedures. The state or any political subdivision of the state may not undertake any project which will encroach upon, damage or destroy any property included in the State or National Register of Historic Places.

However, in this case the National Historic Preservation Act supersedes SDCL 1-19A-11.1. The U.S. Department of State will be issuing a permit to TransCanada for the Keystone XL project. The U.S. Department of State is required to comply with Section 106 of the National Historic Preservation Act.

Q. Did you file prefiled testimony in HP09-001?

A. Yes. (Exhibit____PO-1)

Q. Did you also provide testimony at the evidentiary hearing in HP09-001?

A. Yes.

Q. Have you thoroughly reviewed all of the information filed in HP14-001?

A. Yes.

Q. Have you reviewed the Final Supplemental Environmental Impact Statement for the Keystone XL project?

A. I have reviewed the cultural resource sections of the FSEIS.

Q. Has Keystone XL, to the best of your knowledge, complied with the state and federal rules and regulations you described previously?

A. To the best of my knowledge Keystone XL is in the process of complying with Section 106 of the National Historic Preservation Act through the programmatic agreement.

Q. Has your opinion on the Keystone XL project changed?

A. No.

Q. Are there any conditions in the Amended Final Decision and Order, dated June 29, 2010, that you believe, at this time, that Keystone XL cannot continue to meet?

A. SHPO would like to ensure that proper monitoring measures are in place for the four proposed horizontal directional drilling (HDD) locations known as the Bad River HDD, Cheyenne River HDD, Little Missouri River HDD and the White River HDD. As part of consultation under Section 106 of the National Historic Preservation Act, SHPO recommended that geomorphological/ geoarchaeological monitoring of the four HDD installations be conducted. These recommendations were not included in Attachment F "Historic Trail and Archaeological Monitoring Plan" of the Programmatic Agreement. It is unclear if Keystone XL intends to follow these recommendations which will ensure that if deeply buried cultural deposits are present they can be taken into consideration. SHPO recommends including these areas in the plan entitled "Keystone XL Pipeline Project, Historic Trail and Archaeological Monitoring Plan" to be monitored by a qualified geomorphologist/ geoarchaeologist.

SHPO would like to ensure that Keystone XL is aware of our continued concerns about the construction of electrical distribution/transmission facilities and the potential impacts to the Slim Buttes area.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

KEYSTONE XL PROJECT
DOCKET HP09-001

PREFILED TESTIMONY OF PAIGE HOSKINSON OLSON
ON BEHALF OF THE COMMISSION STAFF
SEPTEMBER 2009

BEFORE THE PUBLIC UTILITIES COMMISSION STATE OF SOUTH DAKOTA

PREFILED TESTIMONY OF PAIGE HOSKINSON OLSON

Q. State your name.

A. Paige Hoskinson Olson

Q. State your employer.

A. State of South Dakota, Tourism and State Development, State Historical Society

Q. State the program for which you work.

A. State Historic Preservation Office (SHPO)

Q. State the program goals and your specific role in the department.

A. The National Historic Preservation Act of 1966 is the foundation for the preservation work of the South Dakota State Historical Society (SDSHS). The State Historic Preservation Office (SHPO), a program under the SDSHS is charged to survey historic properties and maintain an inventory; identify and nominate properties to the National Register of Historic Places; advise and assist federal, state, and local government agencies in fulfilling their preservation responsibilities; provide education and technical assistance in historic preservation; develop local historic preservation programs; consult with federal and state agencies on their projects affecting historic properties; and advise and assist with rehabilitation projects involving federal assistance. My specific role is to monitor federally funded, licensed or permitted projects and to ensure historic properties are taken into consideration. I provide technical analyses, reviews and assistance to government agencies to ensure compliance with state and federal guidelines. I serve as the lead over the review and compliance function of SHPO.

Q. Explain the range of duties you perform.

A. From Class Specifications

Functions:

(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)

1. Reviews construction work plans for federally funded projects to determine if they are in compliance with state and federal preservation laws.

a. Assesses impact of the project on historic properties and ensures those properties are given due consideration during the planning and implementation of projects.

b. Concurs or disagrees with determinations of eligibility for historic properties and the effect of proposed project on those properties within legally mandated timelines.

c. Reviews archaeological survey reports and documentation submitted by principal investigators and Senior Archaeologists to determine if proper methodology and standards established by state and federal government are met.

d. Works with agency officials to determine appropriate mitigation techniques when resources cannot be avoided.

e. Negotiates with and assists agencies in developing legal agreements to mitigate effects to historic properties and agreements to provide for alternative review and compliance procedures.

2. Provides technical assistance to government officials, contractors, lending institutions and agencies, and the general public to help them understand federal and state laws and to suggest compliance requirements.

a. Reviews survey reports developed for construction projects to determine if findings are in compliance with appropriate federal and state rules and regulations.

b. Monitors additions, deletions, or changes in interpretation of federal rules and regulations.

c. Writes and recommends guidelines for government agencies or federal fund recipients.

d. Compiles and analyzes data from a variety of sources to determine if agencies are having difficulty complying with requirements.

e. Maintains a record of all determinations about construction projects to be used as the basis of reports and future federal funding requests.

3. Prepares and writes comprehensive plans to manage cultural resources in South Dakota and establish guidelines to ensure that cultural resources are identified and protected.

a. Determines eligibility of archaeological sites and makes recommendations for their inclusion in the National Register of Historic Places and contributes research to a statewide comprehensive historic preservation plan.

b. Responds to requests from property owners, government agencies, and others to provide technical information about significance of sites.

4. Develops effective public information programs to inform South Dakota citizens about archaeology, pre-history, and the need to preserve South Dakota's cultural heritage.

a. Develops and manages public education programs to inform amateur archaeology groups, students, and the general public.

b. Designs and develops educational handouts, brochures and presentations.

c. Manages and participates in archaeological excavation projects to maintain a working knowledge of South Dakota pre-history and to mitigate the impact of development on significant sites.

5. Oversees the maintenance of a computerized system that tracks information relating to archaeological sites in order to provide an accurate and effective data base for research projects.

6. Provides work direction and training for review and compliance program staff to ensure projects are reviewed in an accurate, consistent and timely manner.

a. Establishes program priorities.

b. Assigns and reviews work.

c. Sets goals and recommends changes in work plans.

d. Develops office procedures.

e. Recommends the hiring of new staff.

f. Makes budget recommendations.

7. Performs other work as assigned.

Decision-making Authority:

Decisions include interpreting state and federal preservation laws, amount and type of guidance provided to state and federal agencies, whether to concur or not concur with an agency's determination of National Register eligibility for identified properties, and whether to concur or not concur with determination of the project's effect on historic properties, establishment of work priorities, goals and work plans for program staff; and content of handouts, brochures and presentations.

Decisions referred include final approval of Memoranda and Programmatic agreements; final content of presentation materials; budgetary recommendations and approval; and new staff hires.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission (Staff).

Q. State and Explain the South Dakota laws or Federal regulations that protect archaeological and historic resources in this state.

A. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their project on historic properties. The federal regulations 36 CFR part 800 – Protection of Historic Properties explain how federal agencies take into consideration historic properties. In general, Section 106 is a four step process.

Step 1: Initiate Section 106 Process – the federal agency establishes if it has a federal undertaking. (A federal undertaking in general is any project, activity, or program funded, permitted or licensed by a federal agency. This also includes federal approval.) The agency determines if the federal undertaking has the potential to affect historic properties. (Historic properties are any prehistoric or historic district, site building, structure, or object listed on the National Register of Historic Places or eligible for listing on the National Register. This term includes properties of traditional religious and cultural importance to Indian tribes.) If the federal undertaking does not have the potential to affect historic properties the agency is done. If the agency determines the undertaking does have the potential to affect historic properties they go to step 2.

Step 2: Identify Historic Properties – the federal agency identifies historic properties within the project area or area of potential effects (APE). If after conducting the appropriate level of research the agency determines that no historic properties are located within the APE, the agency documents their findings and exits the process. If however, historic properties are identified the agency moves to the next step.

Step 3: Assess Adverse Effect – if historic properties are identified in the APE, the federal agency determines how the project will impact the identified

properties. If the project can be modified or conditions are imposed as to minimize the impact of the project on historic properties the federal agency may determine the project will have a "No Adverse Effect." If this is the case, the agency consults with the consulting parties, documents their decision, and exits the process. However, if the agency determines the project will have an "Adverse Effect" on historic properties the agency moves to the final step.

Step 4: Resolution of Adverse Effect – the federal agency, in consultation with other consulting parties, develops a memorandum of agree to mitigate the adverse effects.

Throughout this process the federal agency should be consulting with various parties as described in the regulations.

South Dakota Codified Law 1-19A-11.1 Preservation of historic property – Procedures. The state or any political subdivision of the state may not undertake any project which will encroach upon, damage or destroy any property included in the State or National Register of Historic Places until the Office of History has been given notice and an opportunity to investigate and comment on the proposed project.

However, in this case the National Historic Preservation Act supersedes SDCL 1-19A-11.1. The U.S. Department of State will be issuing a permit to TransCanada for the Keystone XL project. The U.S. Department of State is required to comply with Section 106 of the National Historic Preservation Act.

Q. Has Keystone XL, to the extent you are involved and know, complied with the process?

A. To the best of my knowledge the U.S. Department of State is in the process of complying with Section 106 of the National Historic Preservation Act.

Q. Are there any archaeological and or historically sensitive areas crossed by the Keystone XL pipeline?

A. The U.S. Department of State is in the process of determining if any archaeological and or historically sensitive areas will be impacted by the Keystone XL Pipeline. On July 7, 2009, we received a letter from Ms. Elizabeth Orlando, U.S. Department of State, and the report entitled "Level III Cultural Resource Survey for the Steele City Segment in South Dakota of the Keystone XL Project, Butte, Haakon, Harding, Jones, Lyman, Meade, Perkins, and Tripp Counties, South Dakota," prepared by SWCA Environmental Consultants. The report details the results of the archaeological survey for portions of the proposed centerline. However, there is a discrepancy between Ms. Orlando's letter and the survey report regarding the amount of survey conducted. The report indicates that 9 new sites were located during the current survey efforts and one known site was revisited. See below. The report does not include the identification of places of religious and cultural significance, or the identification of deeply buried archaeological deposits. To date, sites 39BU0039, 39HK0138, 39JN0051, 39LM0519 and 39PE0400 are located within the APE and will be affected by construction.

Q. Please briefly summarize each.

A. Ten archaeology sites and 15 isolated finds were identified during this portion of the survey. Isolated finds by definition are not eligible for listing on the National Register of Historic Places and are not taken into consideration. The ten archaeological sites are as follows:

39PE0400 – undated rock alignment

39MD0823 – prehistoric lithic scatter

39MD0824 – historic artifact scatter

39JN0051 – historic farm/ranch

39JN0052 – historic trash dump

39LM0518 – historic trash scatter

39TP0058 – historic artifact scatter

39BU0039 – prehistoric stone circle

39HK0138 – historic homestead

39LM0519 – historic burial place

We concurred with the U.S. Department of States findings for the following sites: 39MD0823, 39MD0824, 39JN0052, 39LM0518, and 39TP0058 should be considered not eligible for listing on the National Register of Historic Places, and therefore, do not need to be taken into consideration.

39JN0051 and 39LM0519 should be considered eligible for listing on the National Register of Historic Places, and therefore, need to be taken into consideration. 39LM0519 is a burial and should be avoided regardless of its eligibility.

39BU0039 and 39HK0138 should be considered unevaluated for listing on the National Register of Historic Places. These sites should be formally evaluated for listing.

39PE0400 was recommended as not eligible, but we disagreed with this assessment and requested additional information about this site.

Site 39BU0039, 39HK0138, 39JN0051, 39LM0519 and 39PE0400 are located within the APE and will be affected.

Q. Can the Applicant mitigate the risks associated with crossing those sensitive areas?

A. Because the identification efforts are not complete this has not been determined.

Q. If so, please explain.

A. The U.S. Department of State intends to conduct "phased identification and evaluation." A programmatic agreement will be developed to facilitate compliance with Section 106 of the National Historic Preservation Act. The agreement should establish mitigation measure to ensure the above sites and any new sites located within the APE are taken into consideration.

Q. Please provide any additional information that may be helpful or necessary for us to investigate further.

A. During an informal meeting with the consultants for TransCanada, but prior to establishment of the federal action, we discussed having an archaeologist monitor the open trench for deeply buried deposits during construction. We have since recommended that a geomorphologic study be conducted to identify areas with the potential for deeply buried archaeological deposits. We further recommended those areas be tested prior to construction, so if deposits are located, they can be taken into consideration as part of the identification process. We have received no response to our recommendations from the U.S. Department of State.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-001 TO CONSTRUCT THE KEYSTONE XL PIPELINE

DOCKET HP14-001

PREFILED TESTIMONY OF DARREN KEARNEY
ON BEHALF OF THE COMMISSION STAFF
APRIL 2, 2015

Q. State your name.

A. Darren Kearney.

Q. State your employer and business address.

A. South Dakota Public Utilities Commission, 500 E Capitol Ave, Pierre, SD, 57501.

Q. State your position with the South Dakota Public Utilities Commission.

A. I am a Staff Analyst, which is also often referred to as a Utility Analyst.

Q. What is your educational background?

A. I hold a Bachelor's of Science degree, majoring in Biology, from the University of Minnesota. I am also in the process of getting a Masters of Business Administration degree from the University of South Dakota and I expect to be awarded that degree in May of 2015.

Q. Please provide a brief explanation of your work experience.

A. I began my career in the utility industry working as contract biologist for Xcel Energy, where I conducted biological studies around various power plants, performed statistical analysis on the data collected, and authored reports in order to meet National Pollutant Discharge Elimination System (NPDES) permit requirements.

After two years of performing biological studies, I then transitioned into an environmental compliance function at Xcel Energy as a full time employee of the company and became responsible for ensuring Xcel's facilities maintained compliance with the Oil Pollution Act of 1990. This involved writing Spill Prevention Control and Countermeasure (SPCC) plans and also ensuring Xcel facilities maintained compliance with those plans. During this time I was also responsible for the company's Environmental Incident Response Program, which involved training Xcel employees on

spill reporting and response, managing spill cleanups, and mobilizing in-house and contract spill response resources. I was also responsible for aboveground storage tank permitting during this time.

I was in that role for approximately three years and then I transitioned to a coal-fired power plant at Xcel and became responsible for environmental permitting and compliance for the plant. Briefly, my responsibilities involved ensuring that the facility complied with all environmental permits at the plant, which included a Clean Air Act Title V Air Permit, a Clean Water Act NPDES permit, and a hazardous waste permit. I also submitted reports on the plant's operations to various agencies as required by permit or law. After three years at the power plant, I left Xcel Energy to work for the South Dakota Public Utilities Commission (SD PUC).

I have been at the SD PUC for just over two years now. During this time I worked on a variety of matters in the telecom, natural gas, and electric industries. The major dockets that I worked on were transmission siting dockets, pipeline siting dockets, and energy efficiency dockets. I also attended a number of trainings on public utility policy issues, electric grid operations, regional transmission planning, electric wholesale markets, and utility ratemaking.

Q. On whose behalf was this testimony prepared?

A. This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission.

Q. Were you involved in the Keystone XL permitting docket, HP09-001?

A. No.

Q. Did you file prefiled testimony in HP09-001?

A. No. However, I adopt the testimony of Staff witness Tim Binder in docket HP09-001. (Exhibit___(DK-1))

Q. Did you provide testimony at the evidentiary hearing in HP09-001?

A. No.

Q. Have you thoroughly reviewed all of the information filed in HP14-001?

A. Yes. I also reviewed the following: relevant sections of the Department of State's Final Supplemental Environmental Impact Statement; relevant background information included in docket HP09-001; South Dakota Codified Laws and Rules applicable to the Petition; and discovery requests and responses of all parties.

Q. Were other Staff involved in the review of this petition?

A. Yes. Other Staff members involved in the review consisted of Brian Rounds (Staff Analyst) and Mary Zanter (Pipeline Safety Inspector).

Q. Explain, in your words, the role of the SDPUC Staff in the Petition proceedings.

A. After initial review of the filing, Staff identified the findings of fact changes provided by Keystone XL in Exhibit C of the petition that Staff believed could impact the opinions of Staff's expert witnesses that were provided in docket HP09-001. Staff then procured consultants, making a good-faith effort to utilize the same witnesses or consultants used in docket HP09-001, to review the changes identified by Keystone XL and determine the following: 1) if the changes identified in Exhibit C resulted in a change to the professional opinion provided by Staff's witnesses in HP09-001, 2) if the changes identified in Exhibit C comply with the rules and regulations that the witnesses are subject matter experts of, and 3) whether any other Keystone XL project changes or

information in the witnesses' possession resulted in a change to their professional opinion.

In regards to processing the Petition by the Commission, Staff made great efforts to educate interveners on the process. Specifically, Staff responded to calls and emails from interveners with questions on a number of matters, including: the role of an intervener, the procedural schedule, the proper form of discovery, what laws and rules are applicable to the proceeding, and other miscellaneous information requests.

Staff was also active in discovery, where Staff submitted interrogatories to Keystone XL and responded to interrogatories submitted to Staff by Keystone XL and other interveners. Upon closure of discovery, Staff reviewed all interrogatories and responses communicated between all parties in order to understand the issues that could potentially be contested during the proceeding.

Q. What did Staff focus on during its review of the Petition?

A. In accordance with the Commission's order in this docket to limit the scope of discovery only to issues relevant to whether the proposed Keystone XL Pipeline continues to meet the fifty permit conditions set forth in Exhibit A of the June 29, 2010, Amended Final Decision and Order and the changes identified by Keystone XL in Exhibit C, Staff focused its review on the fifty permit conditions and Exhibit C changes. Moreover, Staff's experts focused their review on the project changes identified in Exhibit C that fell within their areas of expertise.

Q. How many parties were granted party status?

A. The commission granted party status to forty-two parties. All individuals who filed for party status were granted party status, however it is Staff's recollection that

during the hearing it was clarified that Jane Kleeb and Benjamin D. Gotschall had both filed for party status on behalf of Bold Nebraska. Therefore, their applications for party status were combined and the Commission approved one application of party status for the Bold Nebraska organization.

Q. How many parties withdrew as interveners?

A. As of the date of writing this testimony, two interveners requested withdrawal of their party status and the Commission so approved. These interveners were the South Dakota Wildlife Federation and the Sierra Club.

Q. Did Staff review the road repair indemnity bond amount required in the Amended Final Decision and Order issued on June 29, 2010? If so, should the amount change?

A. Yes. In condition 23, subpart f, of the HP09-001 Amended Final and Decision and Order, the Commission identified that "Keystone shall obtain and file for approval by the Commission prior to construction in such year a bond in the amount of $15.6 million for the year in which construction is to commence and a second bond in the amount of $15.6 million for the ensuing year, including any additional period until construction and repair has been completed…" This bond amount was set based on Staff witness Tim Binder's recommendation and was calculated as being ten percent of the estimated construction cost in South Dakota of $312 million and spread over two years.

According to revised finding of fact No. 23 in Exhibit C of the Petition, Keystone XL identifies that the total estimated project cost in South Dakota increased from $921.4 million to $1.974 billion in South Dakota. Keystone XL states that the project cost increased due to new technical requirements, inflation, and additional costs associated

with increased project management, regulatory, material storage, and material preservation that resulted from the six year delay in starting construction. Staff believes that not all of the project cost increases identified by Keystone XL would directly impact that estimated construction cost in South Dakota. Staff does believe, however, that inflation would have a direct impact on construction costs. Therefore, Staff recommends the Commission increase the bond amount to account for inflation.

In order to determine the appropriate bond amount as a result of the six year delay in starting construction, Staff used the 2009 estimated South Dakota construction cost of $312 million and escalated the cost to the year 2015 using a 2.5% inflation rate. This resulted in an estimated construction cost of $361.8 million for year 2015. Using the same method established in docket HP09-001 to calculate the appropriate bond amount, Staff determined that the bond should be set at $18 million for two years. Therefore, Staff recommends the Commission increase the bond amount identified in finding of fact No. 88 and condition No. 23 in the Amended Final Decision and Order from $15.6 million to $18 million. Should Keystone XL not agree with Staff's methodology used for updating the bond amount, then Staff proposes that Keystone XL should provide its most current estimate of South Dakota construction costs and then recommend a bond amount in accordance with the methodology used in docket HP09-001 in order to maintain consistency between the two dockets.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

KEYSTONE XL PROJECT
DOCKET HP09-001

PREFILED TESTIMONY OF TIM BINDER
ON BEHALF OF THE COMMISSION STAFF
SEPTEMBER 2009

BEFORE THE PUBLIC UTILITIES COMMISSION STATE OF SOUTH DAKOTA

PREFILED TESTIMONY OF TIM BINDER

Q. State your name.

A. Tim Binder.

Q. State your employer and business address.

A. South Dakota Public Utilities Commission, 500 E Capitol Ave, Pierre, SD.

Q. State you position with the South Dakota Public Utilities Commission (SDPUC)

A. I am a Staff Analyst.

Q. What is your educational background?

A. I hold a Bachelor's degree in Political Sciences from the University of South Dakota of Vermillion, SD.

Q. When did TransCanada file the siting application for the Keystone XL pipeline?

A. The South Dakota Public Utilities Commission received the application on March 13, 2009.

Q. Did you review the TransCanada Keystone XL siting application?

A. Yes, along with the company's prefiled testimony, exhibits and data responses.

Q. Were other SDPUC Staff involved in the review of this application?

A. Yes, a variety of Staff, each with a different background are "assigned" to each docket the SDPUC considers. In this case, Staff members directly assigned to this application are:

(i) Nathan Solem, an engineer and a pipeline safety inspector;

(ii) Stacy Splittstoesser, an engineer and a pipeline safety inspector, with previous experience in the South Dakota Department of Environment and Natural Resources, and;

(iii) Bob Knadle, a staff analyst with an economics background.

Q. Was the application considered complete at the time of filing?

A. Generally, the application was complete. There were several areas, however, that both commission Staff and Staff subject matter experts believed needed additional detail or otherwise were not in strict compliance with the rules or statutes. Attached as Exhibit A are relevant portions of Staff's first two data requests along with applicant's answers. Staff believes this information, along with data request information provided later by expert subject matter witnesses completes the application.

Q. Explain, in your words, the role of the SDPUC Staff in siting permit applications.

A. It is our, Staff's, role to ensure that all applicable statutes and administrative rules are addressed. We study the application in order to determine whether the proposed project, in this case the pipeline, presents any overly burdensome threat of harm or impact to South Dakota's resources and citizens. Pipelines, just like cars, airplanes and boats are legal to operate in South Dakota, despite the inherent dangers associated with each. Staff further seeks to determine whether the planned construction, operation and maintenance of this pipeline present any undue or uncharacteristic dangers in comparison to other pipelines of similar type. With that in mind, Staff received the approval of the Commission to engage several independent experts to help identify potential mitigative measures which will lessen any dangers or potential damages presented by this application if the project is approved by the Commission.

Q. Please explain the burden of proof of applicants involved in siting applications of this nature.

A. South Dakota Codified Law 49-41-22 lays out four specific burdens for the applicant. Staff reads these burdens as follows:

(1) The proposed facility will comply with all applicable laws and rules;

(2) The facility will not pose *an unacceptable* threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;

(3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and

(4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

Q. Staff has inserted "unacceptable" into burden two (2) above, why?

A. As the SD Supreme Court recognized in *The Matter of Otter Tail Power Company on Behalf of Big Stone II for an Energy Conversion Facility Permit for the Construction of the Big Stone II Project* (attached as Exhibit B), nothing in SDCL Chapter 49-41B restricts the PUC as to require it to prohibit facilities posing any threat of injury to the environment. Such a standard could potentially eliminate all siting projects in South Dakota. Rather, it is a question of the *acceptability* of a possible threat. As previously stated, Staff engaged several independent experts to help identify any potentially unacceptable threats. The experts also identified potential mitigative measures to lessen any threat.

Q. Does Staff have any recommendations regarding an appropriate indemnity bond for damages according to SDCL 49-41B-38?

A. Yes. Staff reviewed the statute, prior commission action and all information submitted by the applicant (See Exhibit A) regarding the proper bond amount. Based on Staff's review, we find the applicant's recommendation of a $15,600,000 indemnity for 2011 and a second indemnity bond in the same amount for 2012 to be appropriate.

Q. How many parties submitted a request to intervene?

A. 15 parties requested intervention.

Mary Jasper (Jasper)

Paul F. Seamans (Seamans)

Darrell Iversen (D. Iversen)

The City of Colome (Colome)

Glen Iversen (G. Iversen)

Jacqueline Limpert (Limpert)

John H. Harter (Harter)

Zona Vig (Vig)

Tripp County Water User District (TCWUD)

Dakota Rural Action (DRA)

David Niemi (David Niemi)

Debra Niemi (Debra Niemi)

Lon Lyman (Lyman)

Ruth M. Iversen (Iversen)

Martin R. Lueck (Lueck)

Q. Were all those parties granted intervener status?

A. Yes, all parties requesting intervention status were granted party status to this proceeding.

Q. Did Staff communicate with the interveners? If so, how?

A. Yes, Staff's first discovery request sent on June 12, 2009, to interveners included a cover letter outlining the procedural schedule as approved by the Commission on June 9th, as well as a brief description of the intervention process. The correspondence is attached as Exhibit C. It was Staff's hope that interveners would come forward with

concerns that could be vetted by the independent experts, referenced below, as well as through the process of further discovery.

Q. Did Staff receive any responses or objections from interveners regarding Staff's discovery request?

A. No, with the exception of Dakota Rural Action, Staff did not receive discovery responses or objections from interveners. Staff asked that initial responses be submitted by July 13, 2009, and with the exception of Dakota Rural Action, Staff received no substantive replies to our discovery request.

Q. Did Staff receive *any* communication from interveners, other than Dakota Rural Action, regarding the pre-hearing process? (pre-filed testimony, discovery, etc.)

A. Yes, one intervener, Debra Niemi, responded to Staff's June 12, 2009, communication on August 24, 2009. Staff assisted Ms. Niemi and her brother in filing testimony.

Q. Has Staff received any other communications from any of the intervening parties other than Dakota Rural Action or Ms. Niemi?

A. No, as of the filing date of this testimony, September 25, 2009, Staff has not received any communications, replies or responses from any of the other interveners.

South Dakota Public Utilities Commission
TransCanada Keystone Pipeline, LP
Docket HP09-001
Response to Staff's First Data Request

May 1, 2009
Page 1 of 1

1-1

Data Request:

Provide a description of the present US demand for crude oil per 20:10:22:10.

Response:

U.S. crude oil demand, as represented by U.S. crude oil refinery inputs, averaged about 14.5 million barrels per day (bpd) for the week ending April 17, 2009, up 529 thousand bpd from the previous week's average. Net U.S. imports of crude oil averaged nearly 9.9 million bpd during that same period, up 464 thousand bpd. (EIA Weekly Petroleum Status Report, week ended April 17, 2009 **DOE/EIA-0208(2009-16)**).

Response prepared by: Robert Jones

South Dakota Public Utilities Commission
TransCanada Keystone Pipeline, LP
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Response to Staff's First Data Request

1-2

Data Request:

Provide a map showing cemeteries and places of historical significance adjacent to or abutting the transmission site per 20:10:22:11. The towns of Buffalo and Midland show on the route maps but the cemeteries are not noted.

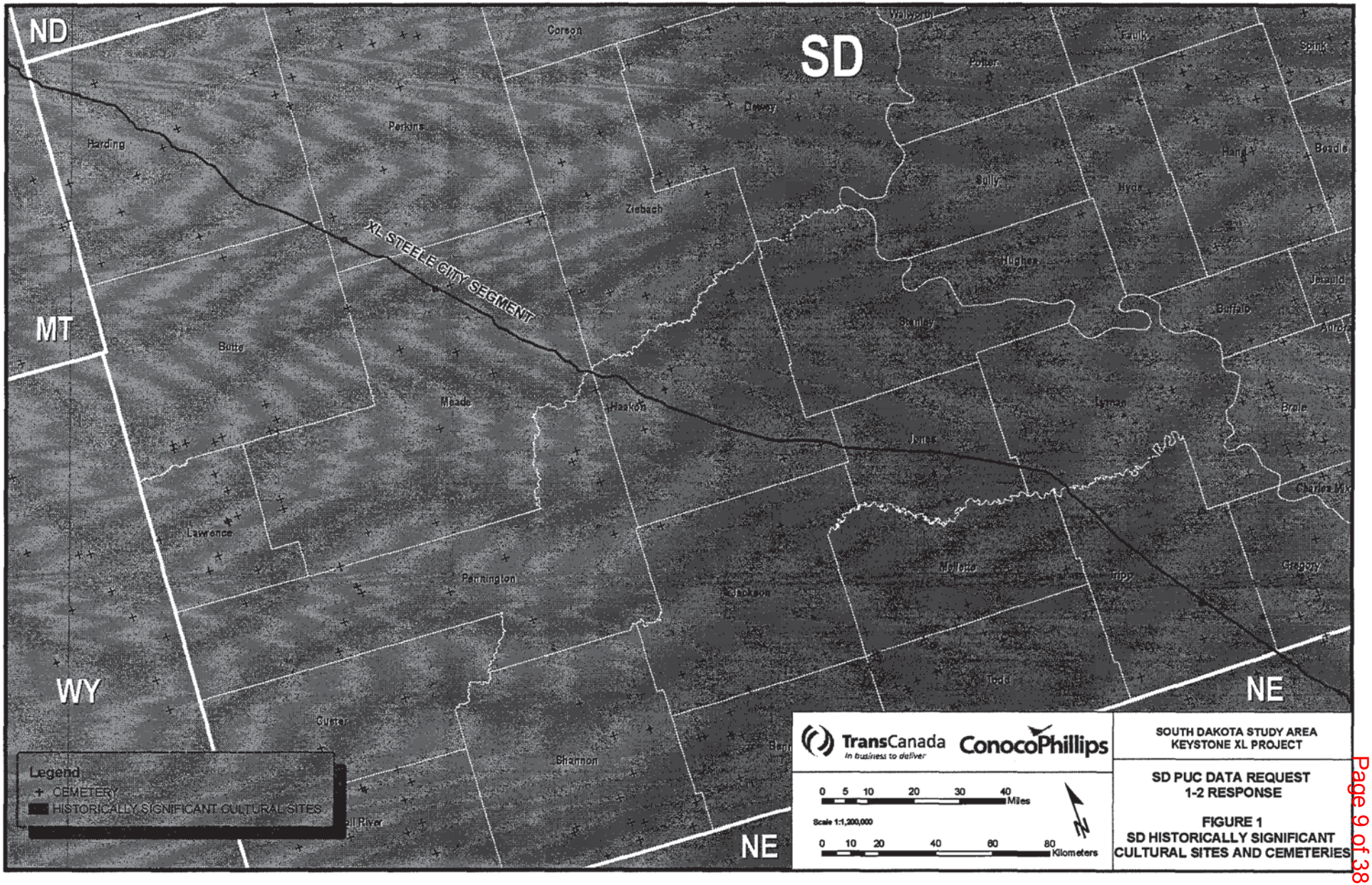
Response:

Cemeteries adjacent to or abutting the Project are noted in Exhibit A of the application as labels on Mapbook 1 and as included on the USGS 1:24,000 topographic maps base on Mapbook 2. The cemetery near the Town of Buffalo is located south of town which is not shown on the submitted maps. The cemetery of the Town of Midland is labeled in both mapbooks. Please see the attached **Figure 1** for locations of cemeteries in South Dakota.

Keystone understands "places of historical significance" to mean prehistoric or historic districts, sites, buildings, structures, or objects included in or eligible for the National Register of Historic Places (NRHP). Due to the sensitive nature of these locations, they have only been identified to the Section scale (see attached letter). Please see the attached **Figure 1** for locations of the four identified places of historical significance near the route in South Dakota.

Department of State will assess the information provided and determine eligibility for the NRHP with the South Dakota State Historic Preservation Officer.

Response prepared by: Jon Schmidt


ND
SD
MT
WY
NE
NE
XL STEELE CITY SEGMENT
Corson
Walworth
Faulk
Spink
Potter
Dewey
Perkins
Harding
Ziebach
Sully
Hyde
Hand
Beadle
Hughes
Jerauld
Stanley
Buffalo
Aurora
Butte
Meade
Haakon
Lyman
Brule
Jones
Charles Mix
Lawrence
Pennington
Mellette
Tripp
Gregory
Jackson
Todd
Custer
Shannon
Bennett
Legend
CEMETERY
HISTORICALLY SIGNIFICANT CULTURAL SITES
TransCanada
In business to deliver
ConocoPhillips
0 5 10 20 30 40 Miles
Scale 1:1,200,000
0 10 20 40 60 80 Kilometers
SOUTH DAKOTA STUDY AREA
KEYSTONE XL PROJECT
SD PUC DATA REQUEST
1-2 RESPONSE
FIGURE 1
SD HISTORICALLY SIGNIFICANT
CULTURAL SITES AND CEMETERIES

South Dakota Department of Tourism and State Development

January 15, 2009

The South Dakota Office of the State Historic Preservation Officer encourages State and Federal agencies to protect fragile and non-renewable sacred and cultural resources through the restriction of site location data. The release of this information could result in the vandalism, looting or other damage of scared and cultural resources. The following laws prohibit the public dissemination of site location data.

South Dakota Codified Law 1-20-21.2.

Confidentiality of records pertaining to location of archaeological site-- **Exceptions**. Any records maintained pursuant to § 1-20-21 pertaining to the location of an archaeological site shall remain confidential to protect the integrity of the archaeological site. The state archaeologist may make the information from the records of an archeological site available to any agency of state government and any political subdivision of the state or to any tribe, which, in the opinion of the state archaeologist, may conduct an activity that affects any such site. The state archaeologist shall also make the information from the records of an archeological site available to the owner of the land that is an archeological site and may make the information available to any qualified researcher or research entity.

Section 304 (16 U.S.C. 4702-3)

(a) Authority to Withhold from Disclosure. The head of a Federal agency or other public official receiving grant assistance pursuant to this Act, after consultation with the Secretary, shall withhold from disclosure to the public, information about the location, character, or ownership of a historic resource if the Secretary and the agency determine that disclosure may-

(1) cause a significant invasion of privacy;

(2) risk harm to the historic resource; or

(3) impede the use of a traditional religious site by practitioners.

(b) Access Determination.-When the head of a Federal agency or other public official has determined that information should be withheld from the public pursuant to subsection (a), the Secretary, in consultation with such Federal agency head or official, shall determine who may have access to the information for the purpose of carrying out this Act.

(c) Consultation with Council.-When the information in question has been developed in the course of an agency's compliance with section 106 or 110(f), the Secretary shall consult with the Council in reaching determinations under subsections (a) and (b).

Archeological Resources Protection Act - Section 9

(a) Information concerning the nature and location of any archaeological resource for which the excavation or removal requires a permit or other permission under this Act or under any other provision of Federal law may not be made available to the public under subchapter II of chapter 5 of title 5 [of the United States Code] or under any other provision of law unless the Federal land manager concerned determines that such disclosure would—

(1) further the purposes of this Act or the Act of June 27, 1960 [the Reservoir Salvage Act, as amended, 16 U.S.C. 469- 469c-1] and

(2) not create a risk of harm to such resources or to the site at which such resources are located.

South Dakota Public Utilities Commission
TransCanada Keystone Pipeline, LP
Docket HP09-001
Response to Staff's First Data Request

May 1, 2009
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1-3

Data Request:

Provide a written summary of the geological features using a topographical 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. Current description does not utilize map.

Response:

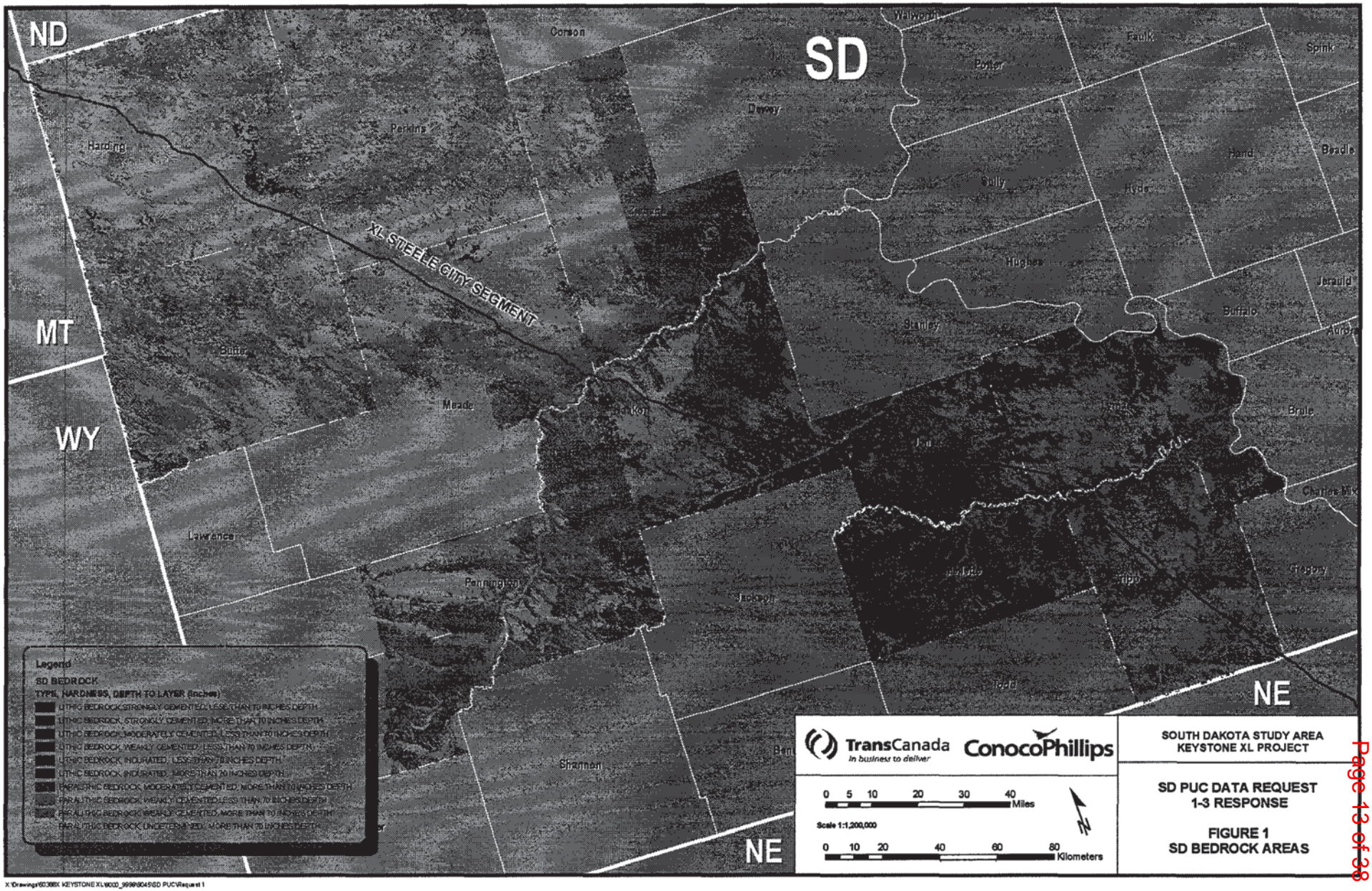
Maps depicting the bedrock and surficial geology of the Project area, along with a figure depicting available geologic cross-sections of the Project area are provided as an attachment to this response. South Dakota Geological Survey 15 minute geologic maps are also provided for reference where available in the Project area.

Figure 1 depicts the bedrock type, hardness, and depth within counties crossed by or near the route.

Figure 2 depicts the surface geology of the State of South Dakota according to the SDGS (Martin et al., 2004). Please note, that according to Martin et al. (2004) "This map should not be enlarged or otherwise used in an attempt to interpret more detail than can be seen at the 1:500,000 scale."

Figure 3 contains available generalized geologic cross sections that have been modified to reflect the relative location of the Project in the northern portion of the route.

Response prepared by: Richard Gale



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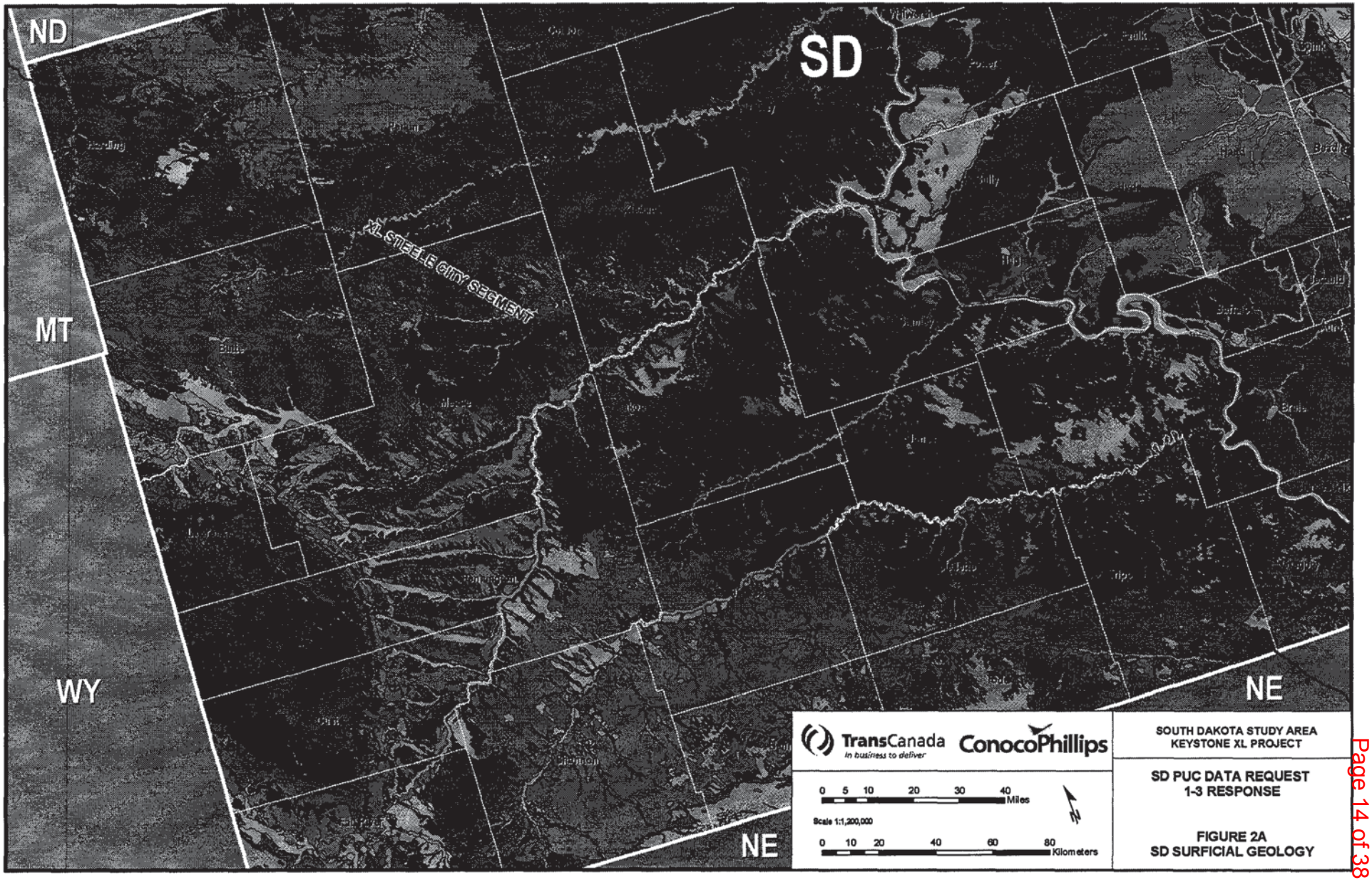

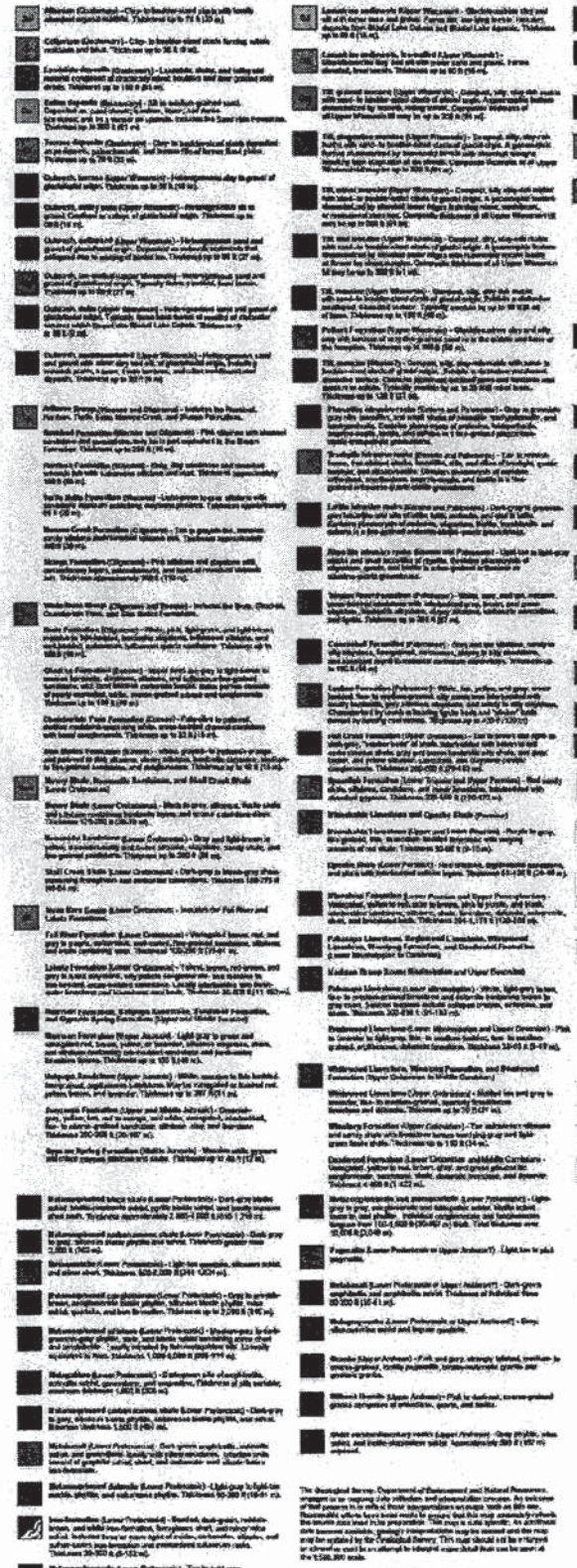

SOUTH DAKOTA STUDY AREA
KEYSTONE XL PROJECT

SD PUC DATA REQUEST
1-3 RESPONSE

002858

FIGURE 2B
SD SURFICIAL GEOLOGY LEGEND

TransCanada
In business to deliver

ConocoPhillips

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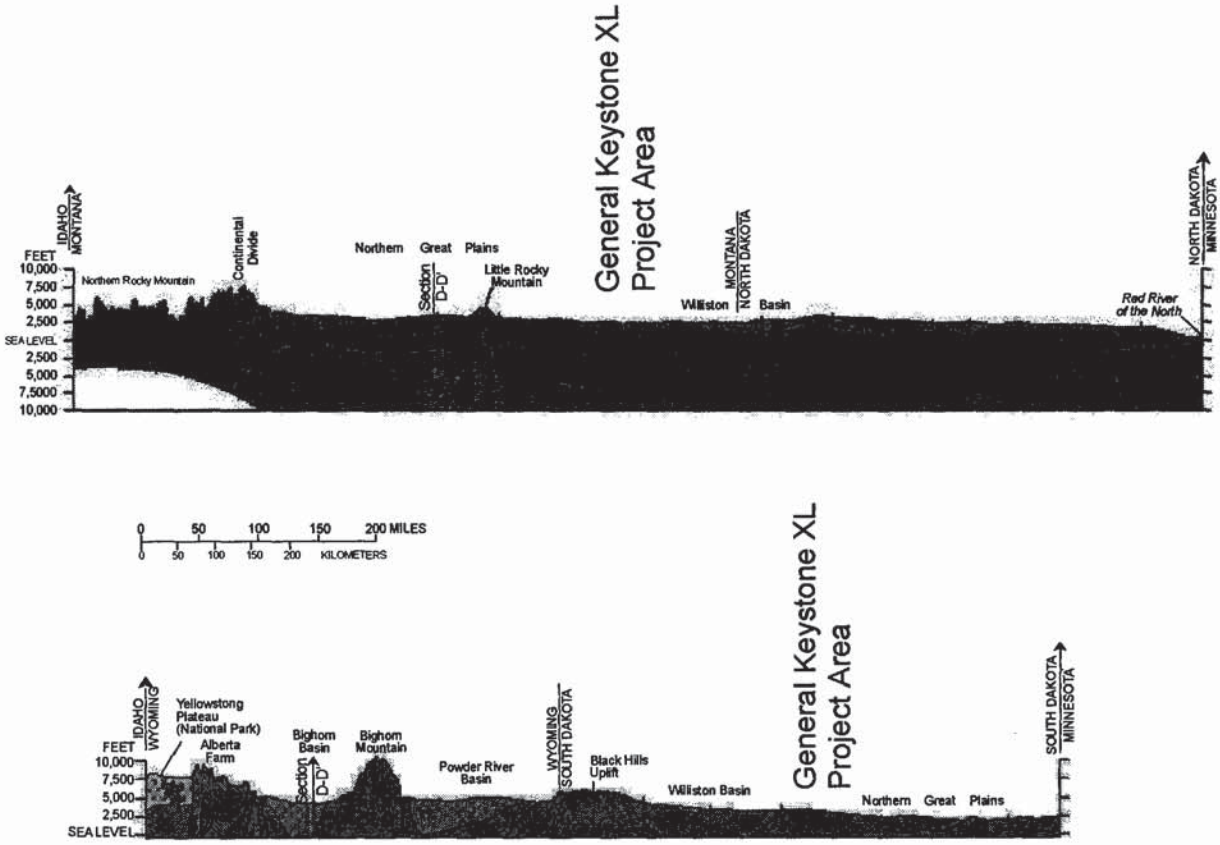

Modified from:

Whitehead, R.L. 1996. Groundwater Atlas of the United States, Segment 8: Montana, North Dakota, South Dakota, and Wyoming. US Geological Survey Hydrologic Atlas 730-I; Figure 11.

EXPLANATION

- Quaternary volcanic rocks
- Quaternary and Tertiary valley-fill deposits
- Tertiary intrusive and volcanic rocks
- Tertiary sedimentary rocks
- Mesozoic sedimentary rocks
- Paleozoic sedimentary rocks
- Precambrian Belt Supergroup
- Precambrian igneous and metamorphic rocks
- Fault—Arrows show relative vertical movement
- Bend in section

SOUTH DAKOTA STUDY AREA
KEYSTONE XL PROJECT

SD PUC DATA REQUEST
1-3 RESPONSE

FIGURE 3
GENERAL GEOLOGIC
CROSS-SECTIONS

South Dakota Public Utilities Commission
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Docket HP09-001
Response to Staff's First Data Request

1-5

Data Request:

Provide a table to show breeding times of sensitive SD species and a map to show migration pathways of sensitive SD species. Additionally, provide a map of recorded occurrences of the prairie fringed orchid. (SDCL 20:10:22:16).

Response:

Breeding periods of sensitive species potentially occurring within the Keystone XL Project area in South Dakota are listed below.

Species	Breeding Periods
Bald Eagle	February 1 - August 15
Greater Sage Grouse	March 1 - June 15
Interior Least Tern	April 15 - August 15
Whooping Crane	NA – Migrant through the project area only.
River Otter	February 15 - June 15
Swift Fox	April 1 - August 31
Blacknose Shiner	June 1 - July 31
Northern Redbelly Dace	April 1 - June 30
Pearl Dace	June 1 - July 31
Sturgeon Chub	June 1 - July 31
American Burying Beetle	June and August

Consultation with the South Dakota Department of Game, Fish and Parks (SDGFP) indicates that there is no specific information on migration pathways of sensitive South Dakota species (SDGFP 2009). It is assumed that riparian corridors function as pathways for some species.

Comparison of the western prairie fringed orchid historical and extant ranges shows the species apparently has been lost from South Dakota (USFWS 1996), but factors that indicate the species could still be present include 1) incomplete surveys in areas of suitable habitat crossed by the project route on private lands; and 2) erratic flowering patterns and long dormancies make it difficult to detect populations (Phillips 2003). Based on these factors and agency review of the project route through South Dakota, the USFWS recommends surveys for occurrence along the

Response prepared by: Jon Schmidt

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1-5

project route south of Hwy 18 in Tripp County (USFWS 2008). Surveys are planned for June 2009 and information will be provided following survey completion.

References:

Phillips, L. 2003. Pollination of Western Prairie Fringed Orchid, *Platanthera praeclara*: Implications for Restoration and Management. Restoration and Reclamation Review Student On-Line Journal (Hort 5015/5071). University of Minnesota, St. Paul, Minnesota (USA) Department of Horticultural Science. (http://hort.agri.umn.edu/h5015/rrr.htm).

South Dakota Department of Game, Fish, and Parks (SDGFP). 2009. Email correspondence from D. Backlund (SDGFP) to P. Lorenz (AECOM). April 2, 2009.

U.S. Fish and Wildlife Service (USFWS). 2008. Correspondence during a meeting held on June 10, 2008 between C. Besskin (USFWS) and P. Lorenz (AECOM) in Pierre, SD.

USFWS. 1996. Western Prairie Fringed Orchid Recovery Plan (*Platanthera praeclara*). U.S. Fish and Wildlife Service. Fort Snelling, Minnesota. Vi + 101 pp.

Response prepared by: Jon Schmidt

South Dakota Public Utilities Commission
TransCanada Keystone Pipeline, LP
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Response to Staff's First Data Request

May 1, 2009
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1-6

Data Request:

Provide a description of the steps you will take to foster positive public relations per ARSD 20:10:22:23 (7).

Response:

Please refer to Section 6 of the Keystone XL permit application for discussion of impacts that the construction, operation, and maintenance of the proposed pipeline will have on the affected area. Amelioration of potential adverse community impacts is discussed within the section and throughout other parts of the application. In general, community impacts are expected to be positive and potential negative impacts will be ameliorated through thoughtful design, construction and operation.

Complementing the design, construction and operation of the pipeline, TransCanada's approach to siting and construction fosters positive public relations by striving to:

- Provide information about the project and the company to landowners, communities and other interested parties along the route;
- Gather feedback on the proposed project from interested parties;
- Provide information in response to stakeholder issues and concerns; and
- Build a foundation for the development of long-term relations with key stakeholders and communities.

The approach includes:

- Project open houses /informational meetings;
- Local meetings and briefings with public officials and other interested parties;
- Providing information and responding to queries from local and regional media;
- Meetings and discussions with landowners;
- Establishment of toll-free information lines and project e-mail to facilitate questions about the project;
- Establishment of a project website;
- Development of fact sheets describing the project;
- Issuance of newsletters regarding project developments; and
- Monitoring and additional actions as appropriate.

Response prepared by: Robert Jones

South Dakota Public Utilities Commission
TransCanada Keystone Pipeline, LP
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Response to Staff's First Data Request

May 1, 2009
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1-7

Data Request:

Supply more detailed labor estimate by type of position per 20:10:22:24 for:

a) Number of permanent positions with Keystone XL and estimated annual labor costs
b) Number of contractor permanent positions and estimated annual labor costs
c) Number of subcontractor permanent positions and estimated annual labor costs
d) Number of construction positions with Keystone XL and estimated annual labor costs
e) Number of contractor construction positions and estimated annual labor costs
f) Number of subcontractor construction positions and estimated annual labor costs

Response:

a) Permanent staff positions with Keystone XL are planned to be in two locations, one location will have 4 employees (2 technical, 1 manager and 1 administrator), and the second location will have 2 employees (both technical). The total is 6 employees, with an estimated annual labor costs @ $860,000.
b) Keystone does not anticipate that any new contractors or subcontractors will form to construct and operate the Project; however Keystone will utilize existing local firms for brush clearing, snow removal, and emergency response contractor personnel.
c) Please see response to (b).
d) The number of construction positions associated with the Keystone XL Project is 90 with an annual labor const of $13 million over tow years.
e) **Table 16** in the original application reflects the number of contractor and subcontractor construction positions and estimated annual labor costs.
f) Please see response to (e).

Response prepared by: Robert Jones

South Dakota Public Utilities Commission
TransCanada Keystone Pipeline, LP
Docket HP09-001
Response to Staff's First Data Request

1-8

Data Request:

Please provide for each classification in question 1-7 above, the percentage of employees that will remain in the area after construction is completed.

Response:

a) 100%
b) Although Keystone does not anticipate having permanent positions after construction, the local firms hired as described in the response to 1-7 (b) will be located in South Dakota.
c) 0% Please see response to DR 1-7 (b).
d) 0%
e) 10%-15% It is estimated that approximately 10 to 15 percent of the total construction work force could be hired locally. This same 10 to 15 percent is expected to remain in the area after construction is complete.
f) Please see response to (e).

Response prepared by: Robert Jones

South Dakota Public Utilities Commission
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May 1, 2009
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1-9

Data Request:

Provide a flowchart showing design capacity of the transmission system per 20:10:22:38 (1). The current flowchart does not show the design capacity.

Response:

The Mechanical Flow Schematic provided in the application as Exhibit 3 reflects the nominal design capacity of 900,000 bpd.

Response prepared by: Meera Kothari

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF SOUTH DAKOTA

In the Matter of the Application by TransCanada Keystone Pipeline, LP for a Permit under the South Dakota Energy Conversion and Transmission Facility Act to Construct the Keystone XL Project

DOCKET HP09-001

STAFF'S SECOND DATA REQUEST

May 22, 2009

2-1. Please provided estimated time schedules for accomplishment of major events in the commencement and duration of the proposed facility per ARSD 20:10:22:22. Provide the same information for each construction spread in South Dakota.

Description	Start	End
2011 Mobilization	**04/15/11**	**05/15/11**
Spread 5	04/15/11	05/14/11
Spread 7	04/15/11	05/14/11
2012 Mobilization	**04/16/12**	**05/15/12**
Spread 4	04/16/12	05/15/12
Spread 6	04/16/12	05/15/12
Spread 8	04/16/12	05/15/12
2011 Construction	**05/16/11**	**10/12/11**
Spread 5	05/16/11	10/12/11
Spread 7	05/16/11	10/12/11
Final Clean Up for 2011 Spreads	**08/29/11**	**10/12/11**
Spread 5	08/29/11	10/12/11
Spread 7	08/29/11	10/12/11
Complete T&E Species Exclusion Windows & HDD Crossings	**09/15/11**	**12/15/11**
Spread 4	09/15/11	12/15/11
Spread 6	09/15/11	12/15/11
Spread 8	09/15/11	12/15/11
2012 Construction	**05/16/12**	**10/12/12**
Spread 4	05/16/12	10/12/12
Spread 6	05/16/12	10/12/12
Spread 8	05/16/12	10/12/12
Final Clean Up 2012 Spreads	**10/13/12**	**11/30/12**
Spread 4	10/13/12	11/30/12
Spread 6	10/13/12	11/30/12
Spread 8	10/13/12	11/30/12

2-2. Please provide the total number of open cuts across public gravel and the total across public paved roads.

Keystone does not anticipate the open cutting of any public gravel or paved road. Site visits confirm that successful road bores should be achievable at all public roads. Private roads will likely be crossed by open cutting.

2-3. Please provide the total estimated cost of the road restoration for all public road open cuts and the total estimated cost for road restoration of all public paved road open cuts.

This is not applicable, as Keystone will not open-cut any public roads.

2-4. What is the average width of an open cut across a road? (Not road width but length of road disturbed by the open cut.)

Again, Keystone does not anticipate open cutting of any public roads. Open cutting of private roads is a function of the pipe diameter. For the 36-inch Keystone XL project, it is anticipated that the length of disturbance along the private road would be 12 feet.

2-5. SCDL 49-41B-38 requires an indemnity bond for damage to roads and bridges. Propose an equitable amount for said bond and provide the basis for determining that amount.

In the Keystone Pipeline proceeding, the Commission adopted an indemnity bond amount based on 10 percent of the value of construction in South Dakota for each year of construction, as recommended in Witness Muehhausen's testimony and report. For the Keystone XL project, the total construction costs for South Dakota are approximately $312,000,000. Accordingly, using the Commission's Keystone approach, Keystone suggests a $15,600,000 indemnity bond each for 2011 and 2012.

2-6. Provide an estimate of the number of miles of gravel or stone surfaced roads that may require grading and/or replenishment of the surface materials due to deterioration from pipeline construction traffic.

The total estimated number of miles of gravel or stone surfaced roads that will be utilized during construction is approximately 600 miles. Based on experience from a previous project in North Dakota, approximately 50% or 300 miles of the roads may require grading and/or replenishment of the surface materials due to deterioration from pipeline construction traffic.

2-7. Provide an estimate of the cost of the grading and replenishment in the previous question.

An estimate of the cost of the grading and replenishment in question 2-6 is in the range of $3,168,000 to $3,326,400

744 N.W.2d 594, 2008 SD 5
(Cite as: 744 N.W.2d 594)

C

Supreme Court of South Dakota.
In the Matter of OTTER TAIL POWER COMPANY on Behalf of **BIG STONE II** co-Owners for an Energy Conversion Facility Permit for the Construction of the **Big Stone II** Project.
No. 24485.

Argued on Nov. 7, 2007.
Decided Jan. 16, 2008.

Background: Electric utility applied for a permit to construct a coal-fired conversion facility. The Public Utilities Commission (PUC) approved the permit, and environmental organizations appealed. The Circuit Court of the Sixth Judicial Circuit, Hughes County, Lori S. Wilbur, J., affirmed, and environmental groups appealed.

Holdings: The Supreme Court, Konenkamp, J., held that:
(1) the PUC's decision to grant the permit would not be reviewed de novo, and
(2) evidence was sufficient to establish that the facility would not pose a threat of serious injury to the environment, though it would emit 4.7 million tons of carbon dioxide annually.

Affirmed.

West Headnotes

[1] Public Utilities 317A 194

317A Public Utilities
317AIII Public Service Commissions or Boards
317AIII(C) Judicial Review or Intervention
317Ak188 Appeal from Orders of Commission
317Ak194 k. Review and Determination in General. Most Cited Cases
Findings of fact by the Public Utilities Commission (PUC) are reviewed under the clearly erroneous standard, while its conclusions of law are reviewed de novo. SDCL § 1-26-36.

[2] Public Utilities 317A 194

317A Public Utilities
317AIII Public Service Commissions or Boards
317AIII(C) Judicial Review or Intervention
317Ak188 Appeal from Orders of Commission
317Ak194 k. Review and Determination in General. Most Cited Cases
In an appeal of a decision by the Public Utilities Commission (PUC), a reviewing court must consider the evidence in its totality and set the PUC's findings aside if the court is definitely and firmly convinced a mistake has been made. SDCL § 1-26-36.

[3] Electricity 145 8.6

145 Electricity
145k8.6 k. Environmental Considerations in General. Most Cited Cases
Supreme Court would not review decision by Public Utilities Commission (PUC) to issue electric utility a permit to construct a coal-fired conversion facility de novo, and instead would review the decision under the clearly erroneous standard, despite contention by environmental groups that the PUC erroneously applied statute, requiring a permit applicant to establish that a proposed facility did not pose a serious threat to the environment, by approving the permit when the PUC also found that the facility would emit 4.7 million tons of carbon dioxide annually; no matter how grave the Court's concerns were on global warning, the Legislature designated the PUC as the responsible agency for the question of granting a permit, and the Legislature and Congress were the government bodies which had to balance the competing interest of economic development and protection of the environment. SDCL §§ 1-26-36, 49-41B-22.

[4] Public Utilities 317A 194

317A Public Utilities
317AIII Public Service Commissions or Boards
317AIII(C) Judicial Review or Intervention
317Ak188 Appeal from Orders of Commission
317Ak194 k. Review and Determina-

744 N.W.2d 594, 2008 SD 5
(Cite as: 744 N.W.2d 594)

tion in General. Most Cited Cases
In an appeal of a decision by the Public Utilities Commission (PUC), while a reviewing court gives due regard to the agency's well-reasoned and fully informed decision, the court will not uphold clear errors of judgment or conclusions unsupported in fact. SDCL § 1-26-36.

[5] Electricity 145 ⚿8.6

145 Electricity
145k8.6 k. Environmental Considerations in General. Most Cited Cases
Evidence was sufficient to establish, in permit proceeding before the Public Utilities Commission (PUC), that electric utility's proposed coal-fired conversion facility would not pose a threat of serious injury to the environment; though the PUC found that the facility would emit 4.7 million tons of carbon dioxide annually, environmental groups opposing the facility did not dispute there was a need for additional wattage and did not present a viable alternative to the facility, no carbon dioxide emission standards had been enacted by Congress, and there was evidence that the facility would only increase carbon dioxide emissions by 0.0007 percent nationally and that the facility would produce 18% less carbon dioxide that existing coal-fired plants. SDCL §§ 1-26-36, 49-41B-22.

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Thomas J. Welk, Christopher W. Madsen of Boyce, Greenfield, Pashby & Welk Sioux Falls, South Dakota, Attorneys for appellee **Big Stone II** Co-Owners.

John J. Smith, Assistant Attorney General, SD Public Utilities Commission, Pierre, South Dakota, Attorneys for appellee SD Public Utilities Commission.

KONENKAMP, Justice.

[¶ 1.] Otter Tail Power Company, on behalf of several utilities, applied for a permit to construct **Big Stone II**, a coal-fired energy conversion facility. Certain non-profit environmental organizations intervened to oppose the application. They asserted that the carbon dioxide (CO_2) emissions from **Big Stone II** would contribute to global warming, thereby posing a threat of serious environmental injury. The South Dakota Public Utilities Commission (PUC) concluded that although the facility will emit CO_2, the amount will not pose a threat of *serious* injury to the environment. It found that CO_2 emissions are not currently regulated by Congress or South Dakota and that **Big Stone II** would only increase the national amount of emissions by seven hundredths of one percent. Because the PUC followed existing legal guidelines in approving the permit, and its findings were not clearly erroneous, we uphold its decision.

Background

[¶ 2.] The South Dakota Legislature acknowledged the significant impact energy development has on "the welfare of the population, the environmental quality, the location and growth of industry, and the use of the natural resources of the state." SDCL 49-41B-1. It enacted legislation to "ensure that [energy conversion and transmission] facilities are constructed in an orderly and timely manner so that the energy requirements of the people of the state are fulfilled." *Id.* The Legislature deemed it "necessary to ensure that the location, construction, and operation of facilities will produce minimal adverse effects on the environment and upon the citizens of this state by providing that a facility may not be constructed or operated in this state without first obtaining a permit from the [PUC]." *Id;* SDCL 49-41B-4.

[¶ 3.] A permit application must include:

(1) The name and address of the applicant;

(2) Description of the nature and location of the facility;

(3) Estimated date of commencement of construction and duration of construction;

(4) Estimated number of employees employed at the site of the facility during the construction phase and during the operating life of the facility. Estimates shall include the number of employees who are to be utilized but who do not currently reside

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within the area to be affected by the facility;

(5) Future additions and modifications to the facility which the applicant may wish to be approved in the permit;

(6) A statement of the reasons for the selection of the proposed location;

(7) Person owning the proposed facility and person managing the proposed facility;

(8) The purpose of the facility;

(9) Estimated consumer demand and estimated future energy needs of those consumers to be directly served by the facility;

*597 (10) The potential short and long range demands on any estimated tax revenues generated by the facility for the extension or expansion of public services within the affected areas;

(11) Environmental studies prepared relative to the facility;

(12) Estimated construction cost of the facility.

SDCL 49-41B-11.

[¶ 4.] After a request for a permit is filed, the PUC must enlist a local review committee, which "shall meet to assess the extent of the potential social and economic effect to be generated by the proposed facility, to assess the affected area's capacity to absorb those effects at various stages of construction, and formulate mitigation measures." SDCL 49-41B-7. This committee issues a final report to the PUC with its findings and "recommendations of the committee as to mitigation measures and minority reports." SDCL 49-41B-10. The PUC may also "prepare or require the preparation of an environmental impact statement[.]" SDCL 49-41B-21. An applicant is required "to establish that: (1) The proposed facility will comply with all applicable laws and rules; (2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area; (3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and (4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government." SDCL 49-41B-22.

[¶ 5.] On November 8, 2004, in accord with SDCL 49-41B-5, the Otter Tail Corporation, doing business as Otter Tail Power Company, submitted a proposal to the PUC for permission to construct an energy conversion facility. Otter Tail submitted the proposal on behalf of Central Minnesota Municipal Power Agency, Great River Energy, Heartland Consumers Power District, Montana-Dakota Utilities Company, a division of MDU Resources Group, Inc., Southern Minnesota Municipal Power Agency, and Western Minnesota Municipal Power Agency (Applicants).[FN1] As proposed, the facility would be a 600 megawatt (MW) coal-fired electric generating plant to be located in Grant County, South Dakota, east of Milbank and Northwest of Big Stone.[FN2] The facility would be named **Big Stone II** and be situated next to an older facility, Big Stone I.

FN1. As confirmed by counsel at oral argument, some utilities have since pulled out of the project. Otter Tail and Montana-Dakota Utilities Company indicate that they will proceed with a smaller facility.

FN2. In 1972, various electrical utilities and other electrical industry participants voluntarily joined Mid-Continent Area Power Pool (MAPP), an association organized to promote efficiency and reliability in the industry by pooling power generation and transmission. MAPP noted that by the summer of 2011, the MAPP United States region would have an 819 megawatt deficit. To alleviate the forecasted deficit, MAPP concluded that members would need to construct power generators, purchase additional capacity, and/or reduce the growth in demand.

[¶ 6.] Several organizations sought to intervene: Clean Water Action; South Dakota Chapter Sierra Club; Union of Concerned Scientists; Mary Jo Stueve; Minnesotans for an Energy-Efficient Economy; Izaak Walton League of America, Midwest Office; and Minnesota Center for Environmental Ad-

vocacy (Intervenors). The Intervenors opposed the application on multiple grounds related to the environmental impact of **Big Stone II**. ***598** The PUC granted intervention to all parties.[FN3]

FN3. Clean Water Action and the Sierra Club later withdrew.

[¶ 7.] The Applicants' petition to the PUC triggered SDCL 49-41B-6, and a local review committee was established to prepare a social and economic assessment of **Big Stone II**. The assessment (1) examined the potential impacts of **Big Stone II**; (2) addressed the area's ability to absorb those impacts; (3) identified a list of actions needed to ensure a smooth project; and (4) prepared a list of recommended mitigation measures. The committee's findings relate to issues not implicated in this appeal, and therefore, will not be discussed.

[¶ 8.] An environmental impact statement was also prepared. Among many other things, the impact statement assessed the air quality effects of **Big Stone II**. In so doing, the statement first identified the applicable regulations, stating

> The Clean Air Act, and its amendments (CAA), requires the Federal U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standard (NAAQS) for pollutants considered harmful to public health and the environment.... The USEPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called "criteria" pollutants.[FN4]
>
> FN4. These include: carbon monoxide (CO), lead, nitrogen dioxide, two types of particulate matter, ozone, and sulfur dioxides.

Draft Environmental Impact Statement May 2006 at 3-1, 3-2. The statement also recognized applicable regulations from Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), Best Available Control Technology (BACT), and the Clean Air Mercury Rule (CAMR). *Id.* at 4-2.

[¶ 9.] Although CO_2 is not regulated, the statement recognized that **Big Stone II** was estimated to emit approximately 4.7 million tons of CO_2 per year. It remarked, however, that "[p]rojected emissions of all hazardous air pollutants from the existing and proposed plants would be reduced by approximately 41 [million] tons/year (from approximately 63 [million] tons/year by the existing plant to approximately 22 [million] tons/year by the combined existing and proposed plant operations)." *Id.* at ES-18. Moreover, the statement noted that "[t]he proposed super-critical combustion technology for the proposed Project is three-to-four percent more efficient, and would result in lower CO_2 emissions per MWh [megawatt hours] of electrical energy output as compared to the sub-critical boiler technology." *Id.* at 4-11.

[¶ 10.] The statement summarized the air quality effects of **Big Stone II**:

> Overall, no air quality impacts exceed significance criteria for air resources. The long-term impacts from the proposed Project for NAAQS and PSD increment would be less than significant. The Grant County, South Dakota area is in attainment or is unclassifiable for all criteria pollutants. Emissions from the proposed project would not conflict with or obstruct implementation of any applicable air quality plan. Since the increase in criteria pollutant emissions would either be less than the PSD significance levels or well within the NAAQS and PSD increments, the proposed Project long-term and short-term emissions impacts on distant air quality areas that are not in compliance with NAAQS is unlikely. In addition, visibility impacts to Class I and Class II areas would be less than significant....

***599** *Id.* at 4-13. Nevertheless, according to the statement, "[t]he proposed **Big Stone II** plant would generate unavoidable emissions of air pollutants that would be an adverse impact." *Id.* at 5-1. This was determined notwithstanding that **Big Stone II** "would operate under [an] appropriate air emission permit from the state of South Dakota that requires operation of the plant under regulatory limits.... Even with the permit requirements and air emission control equipment, these impacts would be adverse and unavoidable." *Id.*

[¶ 11.] In accord with SDCL 49-41B-16, the PUC is required to hold a public hearing near the proposed facility's location. Two public hearings were held. At

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the first hearing, fifteen people provided testimony. At the second hearing, twenty people attended, with twelve giving testimony. In addition to the public hearings, the Applicants, Intervenors, and the PUC exchanged substantial written discovery, with the Applicants answering more than 500 discovery requests and making available more than 47,000 pages of documents. All parties submitted pre-filed testimony and a formal evidentiary hearing was held on June 26-29, 2006. Oral argument was heard by the PUC on July 11, 2006.

[¶ 12.] Through their testimony, the Applicants asserted that **Big Stone II** would provide the energy necessary to serve consumers in South Dakota, North Dakota, Minnesota, Iowa, Montana, and Wisconsin. **Big Stone II** is projected to produce 4.6 million MW hours of electricity per year. The estimated cost to construct **Big Stone II** is $1 billion in 2011 dollars. The Applicants claimed that if construction of **Big Stone II** was delayed or prohibited, the member companies would not be able to generate sufficient energy, which would affect the reliability of their systems and harm consumers.

[¶ 13.] The Intervenors opposed construction of **Big Stone II**. They asserted that **Big Stone II** would pose a threat of serious injury to the environment under SDCL 49-41B-22 and should not be constructed. The threat of serious injury, the Intervenors alleged, would be caused by the amount of CO_2 **Big Stone II** would emit. These emissions, according to the Intervenors, would contribute to global warming, which they contend seriously harms the environment.

[¶ 14.] To support their contention that global warming harms the environment and CO_2 emissions contribute to global warming, the Intervenors submitted expert testimony from Dr. Ezra Hausman. Dr. Hausman is employed with Synapse Energy Economic, Inc., a company specializing in energy and environmental concerns. Dr. Hausman holds a Ph.D. in Atmospheric Science from Harvard University, a master's degree in Applied Physics from Harvard, and a master's degree in Water Resource Engineering from Tufts University.

[¶ 15.] Dr. Hausman testified that "[h]uman induced climate change is a grave and increasing threat to the environment and to human societies around the globe." According to Dr. Hausman, an increase in many greenhouse gases has caused a 0.6° C increase in global temperature in the twentieth century. More notably, he opined, "This means that the planet as a whole does not lose heat to space as efficiently as it otherwise would, so the system as a whole is warming up. This is the phenomenon commonly referred to as 'global warming.' "

[¶ 16.] According to Dr. Hausman, the increase in global temperature "has come primarily from the burning of fossil fuels (coal, oil, and natural gas), and also from changes in land use such as deforestation." Of the fossil fuels, he stated that "coal ***600** emits the most CO_2 per unit of energy obtained." Dr. Hausman said that "[t]here is an unequivocal scientific consensus on many aspects of the issue of global climate change." Specifically, according to Dr. Hausman, there is a consensus that:

(1) "the CO_2 content of the atmosphere is increasing rapidly;"

(2) "this rate of increase, and resulting abundance of CO_2 in the atmosphere, is unprecedented in at least the past 200,000 years and probably much longer;"

(3) "the primary source of the increase is the combustion of fossil fuels by human industrialized societies, i.e., that is the anthropogenic CO_2;" FN5

> FN5. According to Dr. Hausman, the term "anthropogenic" refers to human caused emissions of CO_2.

(4) "the increased abundance of CO_2 has a direct radiative forcing effect on climate by altering the heat transfer characteristics of the atmosphere;"

(5) "this change in the heat transfer properties of the atmosphere will have an impact on the climate of the planet;"

(6) "the climate of the earth is currently changing in ways that are consistent with model predictions based on the increased radiative forcing due to the anthropogenic increase in the atmospheric CO_2[;]"

(7) "the magnitude of climate impacts will increase with increasing atmospheric CO_2 content;" and

(8) "once the atmospheric abundance of CO_2 has been increased, it will only return to equilibrium levels through natural processes on a timescale of several centuries."

[¶ 17.] In regard to coal-fired power plants in general, Dr. Hausman testified that the ones "in the United States already emit almost one-third of the U.S. emissions, or 8% of all the world's anthropogenic CO_2 into the atmosphere, a staggering contribution to the global buildup of greenhouse gases." Moreover, he testified that because "base load coal plants in the United States are built to produce electricity for decades, as long as 70 years in the case of some of the older plants still operating today", the threat to the environment "is becoming increasingly obvious and severe."

[¶ 18.] With respect to **Big Stone II**, Dr. Hausman testified that it would "add over 4.5 million tons of CO_2 to the atmosphere every year of its operational life, inexorably and significantly contributing to the buildup of greenhouse gases in the atmosphere." This amount represents a 34% increase in South Dakota's emission record from the EPA in 2001. Further, he said that "[a]t 4.5 million tons per year, emissions from **Big Stone II** would be equivalent to emissions from almost 670,000 cars." The emissions from **Big Stone II**, Dr. Hausman explained, "would cause irreversible damage to the environment, especially considering its expected lifetime of 50 years or more and the slow recovery time for atmospheric CO_2." He stated, "Human societies and ecosystems will find themselves poorly adapted to their local climate and this will result in disruption of ecosystems[.]" He also predicted that the warming in a region like South Dakota will cause increased temperatures in the summer, resulting in more droughts and reduced crop yields.

[¶ 19.] He concluded that the emissions from **Big Stone II** will cause "a significant and irreversible impact on the environment, both globally and in South Dakota.... My opinion is that this facility will have a cumulative effect, in combination ***601** with other operating energy conversion facilities, both existing and under construction, of causing the level of atmospheric carbon dioxide to be significantly elevated relative to what it would be without this plant.... In my opinion, the environmental effects of this facility will pose a threat of serious injury to the environment in South Dakota and in the broader region."

[¶ 20.] In response to Dr. Hausman's testimony, the Applicants presented the rebuttal testimony of Ward Uggerud, Otter Tail's senior vice-president. Uggerud testified that Dr. Hausman's opinion that **Big Stone II** will have a significant adverse impact on South Dakota "lacks perspective, to say the least." Although he conceded that " **Big Stone II** will emit approximately 4.7 million short tons of carbon dioxide per year," Uggerud explained:

> The Energy Information Administration (EIA) reports that U.S. anthropogenic carbon dioxide emissions for 2010 are projected to be 6,365 million metric tons.... This means that **Big Stone II's** share of total U.S. anthropogenic carbon dioxide emissions in 2010 (assuming the plant came on line then) would be 0.0007 (0.07%, or seven hundredths of one percent). According to EIA, global anthropogenic CO_2 emissions in 2010 will be 30,005 million metric tons. **Big Stone II's** share of this amount will be 0.00014 (0.014% or less than two one-hundredths of one percent).

Moreover, Uggerud asserted that "[c]arbon dioxide is not the only greenhouse gas. Other gasses, such as methane and water vapor, also trap heat in the atmosphere. Water vapor is by far the most dominant greenhouse gas." He thought, therefore, that "the evidence is simply insufficient to conclude that CO_2 emissions associated with the proposed **Big Stone II** will cause [a] 'costly adverse impact on the environment both in South Dakota and throughout the region, the continent and the planet.' "

[¶ 21.] After considering Dr. Hausman's and Uggerud's testimony and the voluminous record, the PUC issued a thirty-four page letter decision, which, among other things, identified the applicable rules and regulations, the site description, alternative locations, and the impact of the plant on the environment. It also evaluated the regulatory and environmental costs associated with construction of **Big Stone II**. The PUC found that **Big Stone II** complied with all rules and regulations under SDCL Chapter 49-41B and ARSD Chapter 20:10:22. As for alternative energy sources, the PUC considered a study submitted by the Applicants from Burns & McDonnell Engineering Co. It examined alternative baseload genera-

tion technologies, such as wind, biomass, hydropower, solar, landfill gas, geothermal energy, distributed generation, atmospheric circulating fluidized bed, combined cycle natural gas turbine, and integrated coal gasification combined cycle. The PUC concluded that "there were no renewable generation options available to address the need for 600 MW of baseload power within the timeframe required, and that other fossil fuel sources were more expensive and less desirable." Further, according to the PUC, there was no single next best alternative source where the Applicants could obtain the needed energy and the "Intervenors have not proposed an alternative to provide base load capacity through natural gas or oil instead of coal" and "have not suggested any specific alternative to **Big Stone II**...."

[¶ 22.] The PUC also addressed an issue that arose at the hearing where the Intervenors argued that the Applicants should pay the costs associated with possible future regulation of CO_2 emissions. Because neither Congress nor South Dakota***602** has regulated CO_2 emissions, and the PUC found it speculative whether such regulations would be established, it concluded that imposing costs would be unwarranted.

[¶ 23.] The PUC considered the environmental impact statement filed by the Applicants. The statement indicated that **Big Stone II** would emit approximately 4.7 million tons of CO_2 each year and over 225 million tons of CO_2 over the expected life of the plant. But the plant would "produce about 18% less CO_2 than other existing coal-fired plants because the super-critical boiler proposed here is more efficient than other forms of coal-fired technologies." Thus, the PUC found that **Big Stone II** "will not contribute materially to the increase in the production of anthropogenic carbon dioxide[.]" The PUC also found that **Big Stone II** "would increase U.S. emissions of carbon dioxide by approximately .0007, or seven-hundredths of one percent[.]"

[¶ 24.] In sum, considering the voluminous record, including the pre-filed testimony, the committee report, the environmental impact statement, and the applicable rules and regulations, the PUC concluded that "if constructed in accordance with the terms and conditions" set forth in its decision, **Big Stone II** "will not pose a threat of serious injury to the environment or to the social and economic conditions of the inhabitants or expected inhabitants in the siting area."

[¶ 25.] Accordingly, the PUC granted the Applicants a permit to construct **Big Stone II** in compliance with the terms and conditions of the PUC's decision. In circuit court, the Intervenors' appeal was affirmed. They now appeal to this Court asserting that the PUC's decision (1) violated the plain language of SDCL 49-41B-22; and (2) was clearly erroneous in light of the evidence as a whole.

Standard of Review

[1][2] [¶ 26.] Our review of the PUC's decision granting the Applicant's request for a permit to construct **Big Stone II** is controlled by SDCL 1-26-36. *See Tebben v. Gil Haugen Const., Inc.*, 2007 SD 18, ¶ 15, 729 N.W.2d 166, 171 (quoting *Wells v. Howe Heating & Plumbing, Inc.*, 2004 SD 37, ¶ 9, 677 N.W.2d 586, 590 (quoting SDCL 1-26-36)). The PUC's findings of fact are reviewed under the clearly erroneous standard, while its conclusions of law are reviewed de novo. *See id.* "A reviewing court must consider the evidence in its totality and set the [PUC's] findings aside if the court is definitely and firmly convinced a mistake has been made." *Id.* (citing *Sopko v. C & R Transfer Co., Inc.*, 1998 SD 8, ¶ 7, 575 N.W.2d 225, 228-29).

Analysis and Decision

[3] [¶ 27.] According to the Intervenors, the PUC erroneously applied SDCL 49-41B-22, and therefore, our review must be de novo, and we should accord no deference to the PUC's decision that **Big Stone II** will not pose a threat of serious injury to the environment. They argue that the PUC "was duty-bound to recognize" the findings by the scientific community concerning the impact of CO_2 emissions on global warming. Moreover, they argue that the PUC's finding that **Big Stone II** will emit 4.7 million tons of CO_2 each year clearly demonstrates that the plant will pose a threat of serious harm to the environment.

[¶ 28.] The Applicants respond that there are no regulations governing the emission of CO_2, and thus there are no standards by which to conclusively establish what amount of emission constitutes a threat of serious injury to the environment. According to the Applicants, the PUC was required to determine if **Big Stone II**, not all coal-fired facilities, will ***603** pose a

threat of serious injury to the environment. Because **Big Stone II** is calculated to increase U.S. emissions by 0.0007, or seven hundredths of one percent, the Applicants contend that the PUC's conclusion is not clearly erroneous in light of all the evidence. Moreover, the PUC required that the Applicants report annually on any CO_2 regulations and their efforts to bring **Big Stone II** into compliance.

[4][5] [¶ 29.] We review the PUC's decision and decide whether, based on the evidence as a whole, we are left with a definite and firm conviction that a mistake has been made. *See* Sopko, 1998 SD 8, ¶ 6, 575 N.W.2d at 228. While we give due regard to an agency's well-reasoned and fully informed decision, we will not uphold clear errors of judgment or conclusions unsupported in fact. Our task in this appeal is to decide the narrow question of whether the PUC's conclusion that **Big Stone II** will not pose a threat of serious injury to the environment was clearly erroneous in light of all the evidence. *See id.*

[¶ 30.] There were over 1,400 pages of documentary evidence submitted in this case. The Applicants offered evidence of studies conducted concerning the effect **Big Stone II** might have on the environment and the community. They also submitted evidence regarding the alternative sources of energy they considered, but ruled out. The Intervenors do not dispute the Applicants' need for the additional wattage. Nor do they present an argument that there exists a viable alternative to **Big Stone II's** coal-fired facility. More significantly, the Intervenors suggest no standards by which the PUC may assess what amount of CO_2 emissions are tolerable. Rather, they maintain that CO_2 emissions, at any measurable level, seriously harm the environment.

[¶ 31.] Global warming presents a momentous and complex threat to our planet. A resolution for this problem, critical though it is, cannot be made in the isolation of judicial proceedings. The social, economic, and environmental consequences of global warming implicate policy decisions constitutionally reserved for the executive and legislative branches. To date, no CO_2 emission standards have been enacted by our political leaders. "Congress has recognized that carbon dioxide emissions cause global warming and that global warming will have severe adverse impacts in the United States, but it has declined to impose any formal limits on such emissions." *Connecticut v. American Elec. Power Co., Inc.*, 406 F.Supp.2d 265, 268-69 (S.D.N.Y.2005) (citing The Global Climate Protection Act of 1987, PL 100-204, Title XI, §§ 1102-03, reprinted at 15 U.S.C § 2901 note).[FN6]

> FN6. Recently, the United States Supreme Court ruled that the EPA was authorized to regulate CO_2 when the Court interpreted the phrase "any air pollutant" in the Clean Air Act to include automobile carbon dioxide emissions. *See Massachusetts v. E.P.A.*, 549 U.S. 497, 127 S.Ct. 1438, 1460-61, 167 L.Ed.2d 248 (2007). The Court reasoned that the use of the word "any" indicated that the statute was intended to require regulation of all air pollutants. *Id.*

[¶ 32.] As members of the judiciary, we refrain from settling policy questions more properly left for the Governor, the Legislature, and Congress. No matter how grave our concerns on global warming, we cannot allow personal views to impair our role under the Constitution. In South Dakota, the Legislature designated the PUC as the responsible agency for this question of granting a permit. We must uphold the PUC's decision unless we conclude that the ruling was "clearly erroneous in light of the entire evidence in the record or arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion." *See* ***604***Korzan v. City of Mitchell, 2006 SD 4, ¶ 12, 708 N.W.2d 683, 686 (citing SDCL 1-26-36).

[¶ 33.] The PUC, in its thirty-four page decision, entered several findings of fact concerning the issue of global warming and CO_2 emissions. It recognized that despite the asserted scientific consensus on the harm caused from global warming, neither Congress nor the South Dakota Legislature has chosen to regulate CO_2 emissions. Therefore, the PUC addressed the potential harm from **Big Stone II** by comparing the projected level of CO_2 emissions from **Big Stone II** to the level of emissions nationally. Because **Big Stone II** would increase CO_2 emissions by 0.0007, or seven hundredths of one percent, the PUC concluded the threat of harm would not result in serious injury. Nonetheless, as a condition on the permit, the PUC required that the Applicants submit annual reviews of any regulations on CO_2 emissions and their efforts to comply with those regulations.[FN7]

FN7. The Applicants must "submit an annual report to the [PUC] on CO_2" which "shall review any federal or state action taken to regulate carbon dioxide, how the operator plans to act to come into compliance with those regulations, the expected costs of those compliance efforts and the estimated effect of such compliance on ratepayers. The report should also evaluate operational techniques and commercially-available equipment being used to control CO_2 emissions at pulverized coal plants, the cost of those techniques or equipment, and whether or not the operator has evaluated the prudence of implementing those techniques or equipment."

[¶ 34.] Our review of the record shows the PUC entered a well-reasoned and informed decision when it concluded that **Big Stone II** would not pose a threat of serious injury to the environment. It addressed the parties' contentions regarding global warming and CO_2 emissions and also provided a detailed explanation of why it rejected the findings proposed by the Intervenors.

[¶ 35.] While global warming and CO_2 emissions are considered harmful by the scientific community, what will pose a threat of *serious* injury to the environment under SDCL 49-41B-22 is a judgment call initially vested with the PUC by the Legislature. Nothing in SDCL Chapter 49-41B so restricts the PUC as to require it to prohibit facilities posing any threat of injury to the environment. Rather, it is a question of the acceptability of a possible threat. Resolving what is acceptable for the people of South Dakota is not for this Court. The Legislature and Congress must balance the competing interests of economic development and protection of our environment. Based on all the evidence and our limited scope of review, the PUC's decision was not clearly erroneous.

[¶ 36.] Affirmed.

[¶ 37.] GILBERTSON, Chief Justice, and SABERS, ZINTER, and MEIERHENRY, Justices, concur.
S.D.,2008.
In re Otter Tail Power Co. ex rel. Big Stone II
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TO: HP09-001 Interveners
FROM: Public Utilities Commission Staff

DATE: June 12, 2009

Thank you for intervening in the TransCanada Keystone XL pipeline siting docket. At its June 9th meeting, the Commission approved the following schedule:

- Final discovery requests served by July 31, 2009, with replies due by August 24, 2009
- Additional Applicant (TransCanada) prefiled testimony due September 1, 2009
- Intervener prefiled testimony due September 8, 2009
- Staff prefiled testimony due September 25, 2009
- Applicant (TransCanada) rebuttal testimony due October 19, 2009
- Hearing in the Capitol Building, Pierre, South Dakota November 2 through 6, 2009

You are considered an "Intervener" and may provide testimony and participate in discovery if you wish. You must, however, submit your testimony in writing by September 8, 2009, if you intend to testify in the November live hearing. "Prefiled" testimony is a mechanism whereby all parties are put on notice, through written submissions, regarding his or her position in the case. You then must appear at the November hearing for your testimony to be placed into the formal record.

The Commission also approved consultant contracts at its June 9th meeting. PUC Staff will with work with environmental, engineering and socio-economic experts. To properly complete our research, we now ask for your input. Please answer the questions on the attached page. We ask that you submit your answers by July 13, 2009. You may submit answers electronically to Kara Semmler at: kara.semmler@state.sd.us or send them to the PUC offices at 500 E. Capitol, Pierre, SD 57501. Thank you for your research assistance. Please contact Kara Semmler at 605-773-3201 with any questions.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY TRANSCANADA KEYSTONE PIPELINE, LP FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY CONVERSION AND TRANSMISSION FACILITIES ACT TO CONSTRUCT THE KEYSTONE XL PROJECT	)	INTERROGATORIES AND REQUEST FOR PRODUCTION OF DOCUMENTS HP09-001

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION STAFF'S FIRST SET OF INTERROGATORIES AND REQUEST FOR DOCUMENTS TO ALL INTERVENERS EXCEPT DAKOTA RURAL ACTION

The Staff of the Public Utilities Commission ("Staff"), by and through its Staff Attorney, hereby submits the following Interrogatories and Requests for Production of Documents to you. Responses should be received on or before July 13, 2009.

INSTRUCTIONS

1. You are required to stipulate in writing that your responses may be treated exactly as if they were filed under oath.

2. A verification or signature of the answering individual or counsel is requested with the answers for these requests as an indication of the genuineness and completeness of the responses and documents provided.

DEFINITIONS

1. "Commission" refers to the South Dakota Public Utilities Commission.

2. "Request" includes any and all interrogatories, requests for production of documents, information requests or other document request.

3. "Person" or "Persons" shall mean any individual, association, partnership, corporation, firm, organization, or entity.

4. "Refer," "referring to," "relate" and "relating to" shall mean having a legal, factual or logical connection, relationship, correlation, or association with the subject matter of the request.

5. Words of gender shall be construed as including all genders, without limitation.

6. Words in the singular shall be construed to mean the plural or vice versa as appropriate.

REQUEST 1: State your name, address and telephone number.

REQUEST 2: State whether you own land crossed by the pipeline, own land on which a pumping station is planned or believe your property is otherwise affected by the pipeline. Provide detail regarding the pipeline and associated facilities location relative your property.

REQUEST 3: If you do not own land or have an interest in land crossed or affected by the Pipeline, please state any perceived impacts the pipeline will have upon yourself, your property, or your interests.

REQUEST 4: The applicable applicant burden of proof reads as follows:

> *49-41B-22. Applicant's burden of proof. The applicant has the burden of proof to establish that:*
>
> *(1) The proposed facility will comply with all applicable laws and rules;*
>
> *(2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;*
>
> *(3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and*
>
> *(4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.*

Specify particular aspect(s) of the applicant's burden of proof for which you have specific concerns.

REQUEST 5: If your property is crossed by the pipeline, specify and explain any unique characteristics or conditions on your property that could affect the analysis of the pipeline siting.

REQUEST 6: Generally what issues do you have with the pipeline relative to PUC jurisdiction?" Examples would be sensitive wildlife, reclamation, roads, emergency services, etc. Please do not include non-jurisdictional issues such as easements, pipe wall thickness and the 80 % waiver. (If you have questions about what is jurisdictional, please contact Kara Semmler.)

REQUEST 7: Do you intend to submit prefiled testimony? If so, of whom?

REQUEST 8: As an ongoing request, provide Commission Staff with a copy of all data, documentary or interrogatory requests you send any party to this docket along with its complete answer to such request.

REQUEST 9: Please specify any other information that may be useful as we begin our research and analysis of this pipeline siting application.

Dated at Pierre, South Dakota, this 12th day of June, 2009.

Kara Semmler
Staff Attorney
South Dakota Public Utilities Commission
500 East Capitol
Pierre, SD 57501
(605) 773-3201

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY TRANSCANADA KEYSTONE PIPELINE, LP FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY CONVERSION AND TRANSMISSION FACILITIES ACT TO CONSTRUCT THE KEYSTONE XL PROJECT	)	HP 09-001
	)	**CERTIFICATE OF SERVICE**

I hereby certify Interrogatories and Requests for Production of Documents were served upon all of the parties listed below on the 12th day of June, 2009, either electronically or by mailing a true and correct copy thereof to them by first class mail, postage prepaid, at their last known addresses, to-wit:

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