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 PIPELINE PROJECT	))))))	**FINAL DECISION AND ORDER; NOTICE OF ENTRY** **HP07-001**

PROCEDURAL HISTORY

On April 27, 2007, TransCanada Keystone Pipeline, LP ("Applicant" or "Keystone") filed an application with the South Dakota Public Utilities Commission ("Commission") for a permit as required by SDCL Chapter 49-41B to construct the South Dakota portion of the Keystone Pipeline Project ("Project"). The Project is proposed to be an approximately 1,800 mile pipeline for transporting crude oil from Alberta to Illinois and Oklahoma, with approximately 1,400 miles located in the United States and 220 miles located in South Dakota.

On May 24, 2007, the Commission issued its Notice of Application; Order for and Notice of Public Input Hearings; and Notice of Opportunity to Apply for Party Status. The notice provided that pursuant to SDCL 49-41 B-17 and ARSD 20:10:22:40, each municipality, county, and governmental agency in the area where the facility is proposed to be sited; any nonprofit organization, formed in whole or in part to promote conservation or natural beauty, to protect the environment, personal health or other biological values, to preserve historical sites, to promote consumer interests, to represent commercial and industrial groups, or to promote the orderly development of the area in which the facility is to be sited; or any interested person, may be granted party status in this proceeding by making written application to the Commission on or before June 26, 2007. On June 4, 2007, Commission Staff requested that the intervention deadline be extended to July 10, 2007, to give interested parties sufficient time to seek intervention, and at its regularly scheduled meeting on June 5, 2007, the Commission unanimously voted to extend the intervention deadline to July 10, 2007.

On June 6, 2007, Staff filed a Motion for Release of Information Filed Confidential. Numerous persons also filed requests for access to confidential information and Applications for Party Status. At its ad hoc meeting held on June 12, 2007, the Commission considered Staff's Motion for Release of Information Filed Confidential, a joint motion by Staff and Applicant to remove from Applicant's filing all documents not pertaining to South Dakota in order to make relevant material easier for parties to locate and access, Applications for Party Status received from numerous parties and the noticed agenda item involving procedures to be followed at the June 25-27, 2007 public input hearings. After hearing from the parties who appeared on these issues, the Commission determined (i) that the motion to remove non-South Dakota documents from the record should be denied, (ii) that documents that Applicant stipulated were appropriate for public release should be released, (iii) that Applicant should make a further review of its filing and authorize the release of additional non-confidential information on or before June 15, 2007, (iv) that Applicant should file a letter with the Commission on or before June 15, 2007, advising the Commission if Applicant is unable to re-file redacted versions of the documents originally filed as confidential by 5:00 p.m. on June 15, 2007, (v) that good cause exists pursuant to ARSD 20:10:01:15.02 to grant party status to those persons who had filed Applications for Party Status prior to the commencement

of the meeting and (vi) that certain guidelines should be followed in the taking of public comments at the public input hearings on June 25-27, 2007.

Pursuant to SDCL 49-41B-15 and 49-41B-16 and the Commission's May 24, 2007 Order for and Notice of Public Input Hearings, the Commission held public input hearings on the application as follows: June 25, 2007, at 11:00 a.m. CDT at the Yankton City Commission Chambers, 416 Walnut, Yankton, South Dakota, at which eighteen persons presented comments; Monday, June 25, 2007, at 7:00 p.m. CDT at Hanson High School , Alexandria, South Dakota, at which twenty-six persons presented comments; Tuesday, June 26, 2007, at 7:00 p.m. CDT at Clark Community Center, 120 North Commercial Street, Clark, South Dakota, at which twenty-one persons presented comments; and Wednesday, June 27, 2007, at noon CDT at the Britton-Hecla Arena, North Main Street, Britton, South Dakota, at which thirty-one persons presented comments. The Alexandria hearing had been noticed to be held at Joe's Restaurant in Alexandria but was moved due to the large number of people who attended. The Commission posted a notice of the location change at the original location, and Staff were present to direct people to the new location. The Britton hearing had been noticed to be held at the Marshall County Community Building in Britton but was moved due to the large number of people who attended. The Commission posted a notice of the location change at the original location, and Community Building personnel were present to direct people to the new location. The purpose of the public input hearings was to hear public comment regarding Keystone's application. At the public input hearings, Keystone presented a brief description of the project, following which interested persons appeared and presented their views, comments and questions regarding the application.

On July 11, 2007, at its regular scheduled meeting, the Commission considered the Applications for Party Status received from numerous parties after the commencement of the meeting of June 12, 2007, through the intervention deadline of July 10, 2007. The Commission found, pursuant to ARSD 20:10:22:40 that good cause existed to allow intervention for all Applications for Party Status received through the intervention deadline of July 10, 2007 and granted party status to the 177 persons who had filed Applications for Party Status.

At its regularly scheduled meeting of August 7, 2007, the Commission considered whether to require parties who intend to present evidence in the case to file pre-filed testimony and whether to issue a scheduling order. The Commission heard comments and argument from Applicant, certain intervenors who appeared and Staff. The Commission decided to require parties who intend to present evidence in the case to file pre-filed testimony and to issue a scheduling order based upon hearing dates of December 3-14, 2007, with Commission Counsel to hold a scheduling conference among those parties who had appeared and commented on the schedule in an effort to reach agreement on the schedule for pre-filed testimony. On August 8, 2007, the North Dakota Public Service Commission issued a Notice of Hearing Continuation on Keystone for additional hearings to be held on September 5-6, 2007, and on August 10, 2007, the United States Department of State issued the Draft Environmental Impact Statement and Keystone Pipeline Public Comment Meeting Schedule, scheduling public comment meetings throughout the Project area from September 4-20, 2007. On September 4, 2007, Commission Counsel filed a draft Scheduling and Procedural Order. Following e-mail notice to the parties who had participated in scheduling discussions at the August 7, 2007 Commission meeting, on September 10, 2007, a scheduling conference was held telephonically among the participating parties. The participating parties agreed to a schedule for filing of pre-filed testimony. At its regularly scheduled meeting on September 11, 2007, the Commission considered the matter of how to proceed regarding a scheduling and procedural order. The Commission voted unanimously to approve the schedule agreed to by the participating parties and to provide for electronic service by and upon persons having the capability to send and receive

electronic service, with parties having the right to request paper service of specific documents having particular characteristics or for other good cause.

At its regular meeting on June 26, 2007, the Commission again considered the issue of confidential treatment of documents that were either wholly or partially filed as confidential by Applicant or by the Commission's administrative staff. After hearing from Staff and other parties who appeared, the Commission deferred action to take the matter under advisement and enable further legal research into the various categories of information that had not been fully disclosed. On August 6, 2007, Curt Hohn filed a supplemental request for access to information still filed as confidential, specifically the half-mile corridor landowner service list compiled by the Commission's administrative staff pursuant to SDCL 49-41B-15(3) and the list filed by Applicant in connection with its application entitled "Tract Line List, Pump Station #15 Revision," commonly referred to as the "Pump Station Line List" ("Line List"). On August 15, 2007, the Commission's administrative staff made an administrative decision to release the half-mile corridor landowner service list to Mr. Hohn and make it available for release to others upon request.

At its regularly scheduled meeting of August 28, 2007, the Commission considered the justification for confidential treatment of the Line List. The Commission found that the landowner names, addresses and property descriptions related to South Dakota properties contained on the Line List were not entitled to confidential treatment pursuant to ARSD 20:10:01:39 and 20:10:01:42 but that it was not appropriate to post this information on the Commission's public web site, that telephone numbers, including cell phone numbers contained on the Line List were entitled to confidential treatment and that decisions regarding access to information concerning landowners of non-South Dakota lands should be made by the states having jurisdiction over such lands. The Commission unanimously voted to release the Line List upon request but not to publish it on the Commission's public web site, with telephone numbers redacted and all information concerning owners of non-South Dakota properties redacted.

On September 6, 2007, Applicant filed a motion for entry of protective order. At its regular meeting on October 9, 2007, the Commission considered the motion. Finding that the parties had been unable to reach agreement on a confidentiality agreement or protective order and that good cause was shown pursuant to SDCL 15-6-26(c) that a general protective order would facilitate discovery while protecting information produced and filed by the parties entitled to confidential treatment, the Commission voted unanimously to approve Applicant's motion for entry of protective order and to direct its legal counsel to prepare a protective order for issuance by the Commission containing provisions substantially in the form of those in either or a combination of the protective orders issued in dockets EL05-016 and TC06-176. The Commission also directed that the order contain a clear directive that the parties exercise good faith in marking documents as confidential and only seek confidential treatment for information having a bona fide basis for confidential treatment. The Commission further directed that the order contain a provision advising parties to comply with SDCL 15-6-5(g) regarding filing of discovery materials and special provisions regarding the treatment of maps obtained by Applicant from the United States Department of Transportation ("USDOT") depicting the areas within the general project area designated by USDOT as "High Consequence Areas" ("HCA maps").

Following the Commission's scheduling and procedural order issued on September 14, 2007, on November 2, 2007, WEB Water Development Assn. ("WEB") filed a Motion for Extension of Time to File Direct Testimony. On November 5, 2007, Applicant filed a Resistance to Intervenor WEB Water Development Association's Motion for Extension of Time to File Direct Testimony and to Request to Move the Hearing Location and Staff filed a Motion in Opposition of WEB Water Association's Motion for Extension of Time to File Direct Testimony. On October 31, November 1,

November 2 and November 5, 2007, respectively, Requests to Change Hearing Location were filed by intervenors Michael and Susan Sibson, Jerauld Glanzer, Delwin and Pam Hofer and Lillian Anderson. On November 6, 2007, at its regular meeting, the Commission considered WEB's motion and voted by majority vote, with Commissioner Hanson dissenting, to grant an extension to WEB to November 13, 2007, to file its additional direct testimony, to be limited to the direct testimony of Dr. Perry Rahn, Dr. Arden Davis, Dr. Robert Coppock, Joe Nease and Kevin Meader, and with accompanying extensions granted to Applicant to file its rebuttal to WEB's late-filed direct testimony on or before November 26, 2007, and to Staff and to Intervenors who filed direct testimony to file any surrebuttal testimony responsive to WEB's direct testimony or Applicant's testimony responsive thereto on or before November 30, 2007 at 12:00 p.m. All other provisions of the original scheduling and procedural order were to remain in effect. The Commission further voted unanimously to deny Intervenors' requests to change the hearing location.

In accordance with the scheduling and procedural orders in this case, Applicant, Staff and certain Intervenors filed pre-filed testimony. The formal evidentiary hearing was held as scheduled on December 3-7 and December 10 and 11, 2007, in Room 412, State Capitol, Pierre, South Dakota; and an additional Public Input Hearing was held on December 6, 2007, in Room 412, State Capitol, Pierre, South Dakota, at 7:00 p.m. At the conclusion of the hearing after hearing from the parties, the Commission established the following briefing schedule: (i) initial briefs and proposed findings of fact and conclusions of law from all parties wishing to submit them due by January 11, 2008; and (ii) reply briefs and objections and revisions to proposed findings of fact and conclusions of law due from all parties wishing to submit them on or before January 31, 2008. TR 1722, et seq. The Commission initially determined not to schedule oral argument, but stated that any party wishing to present oral argument could file a motion requesting oral argument. TR 1729.

On January 11, 2008, initial briefs were filed by the Applicant, WEB and Staff. Proposed findings of fact and conclusions of law were filed and served by WEB on January 11, 2008, served by Applicant after business hours on January 11, 2008 and filed on January 14, 2008, due to their having been filed after hours on January 11, 2008. On January 31, 2008, reply briefs were filed and served by Applicant, WEB and Staff and Objections to Keystone's Proposed Findings of Fact and Conclusions of Law were filed and served by WEB.

On March 11, 2008, at its regular meeting, the Commission voted unanimously to approve conditions to which a permit to construct the Project would be subject, if granted, and to grant a permit to Keystone to construct the Project, subject to the approved conditions.

Having considered the evidence of record, applicable law and the arguments of the parties, the Commission makes the following Findings of Fact, Conclusions of Law and Decision:

FINDINGS OF FACT

Parties

1. The Applicant is TransCanada Keystone Pipeline, LP, a Delaware Limited Partnership registered to do business in South Dakota. TR 81; Ex TC 1. As of the hearing dates, Keystone was an indirect, wholly-owned subsidiary of TransCanada Corporation ("TransCanada"). TR 82.

2. On June 12, 2007, the Commission unanimously voted to grant party status to all persons that had requested party status prior to the commencement of the meeting. On July 11, 2008, the Commission unanimously voted to grant party status to all persons that had requested

party status after the commencement of the meeting on June 12, 2007, through the intervention deadline of July 10, 2007.[1] 177 persons intervened, including: Bernard V. Kayser; Thomas and Maxine Johnston; Ronald Jenkins; Thomas Riddle; Earl Keller; Daryl Heckenlaible; South Dakota Department of Game, Fish & Parks; Gladys Stromberg; Curt Hohn; WEB Water Development Association, Inc.; Alan Aughenbaugh; Robert Papendick; Robert Hofer; Alvin Hofer; Donald Jarrett; Margaret Heard; David Mensch; Lillian Anderson; Dakotans Concerned with the TransCanada Pipeline; Duane Hacecky; Norman Papendick; MMP, Inc., Merl Moeckly Co., and Kent Moeckly; Gene Cassels; Alice Slate; Sam Stahl; Phyllis and Bill Tisher; Lloyd Huber; Ronald Opsahl; Mary Opsahl; Lorene Pokorny; Karen Edzards; Arlo Koerner; LaVia Merrick; South Dakota Resources Coalition; Marie Connell; Dean Farley on behalf of Dakota DeCaza; Jerry Burger; Robert F. Stieha as trustee for the Gladys I. Stieha Trust; Robert F. Stieha as trustee for the Joyce M. Stieha Trust; Timothy Hofer; Sharon List; David Ewald on behalf of Gehl Company; Jim Means Guardian on behalf of John Adolph Rahn, Jr.; Dennis and Thelma Mentel; Ardella Gross; Maureen Friesen; Kelly Yankton Ventures Limited Partnership; Lawrence Novotny on behalf of South Dakota Resources Coalition; Susie Haas; Richard Schmit; Pamela Hofer; Delwin Hofer; Ramon Feller; Genevieve Liberty; Michael Burger; Max Burger; Merrill Walters; William Klimish; Ruby McAllister; Kim Alberty; Robert Farrar; Kenneth Tuschen; Adeline Creviston; Raymond Anderson; Kaley Madsen; Valerie Madsen; Kim Madsen; Kirk Madsen; Josh Kraft; Margaret Rahn; Carol Fischer; Bethlehem Norsk Evangelical Lutheran Church; Lawrence Roster; De Ette Goss; Edward Goss; Clark Moeckly; Viola Olson; Elmer Erickson; James Feller; LuAnn Dather; Bernie Hunhoff; Deborah Hausman; Phyllis Peterson; Raymond Wormke Trust; Oris and Susan Hove; City of Yankton; Larry French; Gary Cwach; Norman Hofer; Ron Schaeffer; Marlis Dodds; John Sieh on behalf of Granary Rural Cultural Center; Leo Sibson; Betty Jean Fisher; Michael Nelson; New Port Hutterian Brethren; Scott Weber and Pamela Vinz Weber; Jean Burger; Wallace and Myrtis Hanson; Eileen Schmidt; Ryan Hastings; Mary Hastings; Richard Hastings; Teresa Hastings; Darlene Hastings; Chris Hastings; Donnell Hanson; City of Freeman; Lois Albin; Yankton Ag Service, Inc.; Michael Sibson; Susan Sibson; Scott Anderson; BDM Rural Water System, Inc.; Jerauld and Elaine Glanzer; Delores and Raymond Love; Harlan Latimer; Angela Wermers; Richard Burghardt; Donald Fisher; Francis Heer; Judy Kaufman; Jonathan and Linda Dietrich; Sarah Stahl; Paul Decker; J. James New Trust; Theodore Sattler; Frank Kloucek; Oren Stahl; Bernard Wagner, Sr.; Karen Hansen; Vicki Larsen; Grace Plath, Trustee; Sharon Frank; Rhonda Hardina; Fredinand Barrie; Ila French; Jeanette Schramm; Clara Friesen; Floyd Carson; Julie Ann Lenius; Yankton County; Marlin Herrboldt; Hastings Land & Cattle Inc., Robert Hastings, a/k/a Robert C. Hastings; Edward Novak; Melca DeJean; Dixie Conner; Arlene Marie Harper; Edward Munkrold; Janice Hofer; Carl Moschell; Munkvold Land & Cattle Company, Inc.; Richard and Earla Strid; Darrell Nelson; South Dakota Association of Towns and Townships; Cimpl's LLC; Anne Reisch; Gary L. Roby; Andrea Kilker; Elta Zens; Terrence Schramm; Joanne Schramm; Edward Schmit; East River Electric Power Co-op, Inc.; Edward Miller; and LaVia Merrick. Minutes of June, 12, 2008 and July 11, 2008 Commission Meetings; Applications for Party Status.

3. Intervenor WEB Water Development Association ("WEB") is a regional water system serving 17 counties in north central South Dakota and North Dakota. TR 1274. WEB is a community water system pursuant to 49 CFR 195.6(c).

4. Intervenor Brown Day Marshall Rural Water System, based in Britton, South Dakota ("BDM") is a member-owned rural water system that serves around 2,000 members, 15 bulk users, and several large animal units in northeast South Dakota. BDM covers about 4,500 square miles

[1]The Commission's Orders in the case and all other filings and documents in the record are available on the Commission's web page for Docket HP07-001 at: http://puc.sd.gov/dockets/hydrocarbonpipeline/2007/hp07-001.aspx

and serves a population of about 7,000 people on a daily basis. TR 692-693. BDM is a community water system pursuant to 49 CFR 195.6(c).

5. The Commission's staff ("Staff") also participated in the case as a full party.

Procedural Findings

6. The application was signed on behalf of the Applicant on April 26, 2007, in Calgary, Alberta, Canada, and was filed with the Commission on April 27, 2007. Ex TC-1, 8.0, p. 71.

7. The Commission issued the following notices and orders in the case as described in greater detail in the Procedural History above, which is hereby incorporated by reference in these Findings of Fact and Conclusions of Law:

- Notice of Application; Order for and Notice of Public Hearings; and Notice of Opportunity to Apply for Party Status
- Order of Assessment of Filing Fee, Order Approving Notification of Landowners; and Order Approving Locations and Times of Public Hearings
- Scheduling Order for Determining [sic] Confidentiality of Documents Filed Confidential
- Order Extending Intervention Deadline
- Order Denying Motion to Withdraw Filings, Releasing Documents, Requesting Notice, Granting Party Status and Establishing Public Comment Guidelines
- Order Granting Party Status
- Scheduling and Procedural Order
- Order Releasing Information Filed Confidential
- Protective Order
- Order For and Notice Of Public Hearing
- Second Scheduling and Procedural Order
- Notice of and Order for Taking Judicial Notice

8. Pursuant to SDCL 49-41B-15 and 49-41B-16 and its Notice of Application; Order for and Notice of Public Hearings; and Notice of Opportunity to Apply for Party Status, the Commission held public hearings on Keystone's application at the following times and places (see Public Hearing Transcripts):

- Monday, June 25, 2007, at 11:00 a.m. CDT at the Yankton City Commission Chambers, 416 Walnut, Yankton, SD; at which eighteen members of the public presented comments;
- Monday, June 25, 2007, at 7:00 p.m. CDT at Hanson High School, Alexandria, SD; at which twenty-six members of the public presented comments;
- Tuesday, June 26, 2007, at 7:00 p.m. CDT at Clark Community Center, 120 North Commercial Street, Clark, SD; at which twenty-one members of the public presented comments; and
- Wednesday, June 27, 2007, at noon CDT at the Britton-Hecla Arena, Britton, SD; at which thirty-one members of the public presented comments.

9. The purpose of the public hearings was to afford an opportunity for interested persons to present their views and comments to the Commission concerning the Application. At the hearings, Keystone presented a brief description of the project after which interested persons presented their views, comments and questions regarding the application. Public Hearing Transcripts.

10. The following testimony was prefiled in advance of the formal evidentiary hearing held December 3-7 and December 10 and 11, 2007, in Room 412, State Capitol, Pierre, South Dakota:

A. Applicant's September 24, 2007 Direct Testimony
- Robert Jones
- Scott Ellis
- Brian Thomas
- Michael Koski
- Meera Kothari
- L. A. Gray
- Heidi Tillquist

B. Intervenors' Direct Testimony
- Ed and DeEtte Goss (10/26/07)
- John M. Sieh (10/29/07)
- Richard Hastings (10/30/07)
- Delwin Hofer (10/30/07)
- Pam Hofer (10/30/07)
- James O. Edwards, Jr., East River Electric Power Cooperative, Inc. (10/31/07)
- Michael Sibson (10/31/07)
- Tim Hofer (10/31/07)
- Scott Anderson (10/31/07)
- George Piper for the Board of Directors South Dakota Resources Coalition (10/31/07)
- Edward D. Miller (10/31/07)
- David Wade of BDM Rural Water System, Inc. (10/31/07)
- Curt Hohn, WEB Water Development Association, Inc. (10/31/07)
  - Attachment 1 (Draft Programmatic Agreement Comments)
  - Attachment 2 (DEIS Comments)
  - Exhibits 1 - 41
- Kent Moeckley, Merl Moeckley Co. and MMP Inc. (11/01/07)
- Gene Cassels (11/01/07)
- Raymond and Lillian Anderson (11/01/07)
- Raymond and Lillian Anderson (11/01/07)
- Kim Madsen (11/01/07)
- Valerie Madsen (11/01/07)
- Kaley Madsen (11/01/07)
- Jerry Burger (11/01/07)
- Chris Hastings (11/01/07)
- Kirk Madsen (11/01/07)
- Jerauld Glanzer (11/01/07)
- Ben Grote (11/01/07)
- South Dakota Association of Towns and Townships (11/02/07)
- Ron Schaeffer (11/02/07)
- Leo Sibson (11/07/07)
- Arden D. Davis, Ph.D., P.E. (11/13/07)

- Perry H. Rahn, Ph.D., P.E. (11/13/07)

C. Staff's October 31, 2007 Direct Testimony
- William Walsh
- Jenny Hudson
- David Schramm
- John Muehlhausen
- Bryan Murdock
- Dan Hannan
- Tom Janssen
- Brenda Winkler

D. Applicant's Rebuttal Testimony
- L.A. Gray (11/14/07)
- Michael Koski (11/14/07)
- Scott Ellis (11/14/07)
- Heidi Tillquist (11/14/07)
- Meera Kothari (11/15/07)
- Meera Kothari (11/23/07)
- Brian Thomas (11/26/07)
- Heidi Tillquist (11/27/07)

E. Staff's Surrebuttal Testimony of November 28, 2007
- Jenny Hudson
- John Muehlhausen (Part 1 and Part 2)
- Dan Hannan
- Tom Janssen
- Brenda Winkler
- William Walsh
- David Schramm

F. Intervenors' Rebuttal/Surrebuttal Testimony of November 30, 2007
- Lillian Anderson
- Edward D. Miller

11. As provided for in the Commission's September 14, 2007 Scheduling and Procedural Order, the Commission held a public input hearing in Room 412 of the State Capitol beginning at 7:00 p.m. on December 6, 2007, at which eleven members of the public presented comments. Transcript of December 6, 2007 Public Input Hearing.

Applicable Statutes and Regulations

12. The following South Dakota statutes are applicable: SDCL 49-41B-1 through 49-41B-2.1, 49-41B-4, 49-41B-11 through 49-41B-19, 49-41B-21, 49-41B-22, 49-41B-24, 49-41B-26 through 49-41B-38 and applicable provisions of SDCL Chs. 1-26 and 15-6.

13. The following South Dakota administrative rules are applicable: ARSD Chapter 20:10:01 and ARSD 20:10:22:01 through ARSD 20:10:22:25, ARSD 20:10:22:36 through ARSD 20:10:22:40.

14. Pursuant to SDCL 49-41B-22, the Applicant for a facility construction permit 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.

The Project

15. The Project will be owned, managed and operated by the Applicant, TransCanada Keystone Pipeline, LP. Ex TC 1, 1.5 and 1.7, p. 4. TransCanada does not currently operate any crude oil pipelines but has, however, owned and operated crude oil pipelines in the past. TransCanada has more than 36,000 miles of pipeline in North America and relationships with over 40,000 landowners across North America. TR 48, 344.

16. The purpose of the Project is to transport incremental crude oil production from the Western Canadian Sedimentary Basin ("WCSB") to meet growing demand by refineries and markets in the United States (U.S.). This supply will serve to replace U.S. reliance on less stable and less reliable sources of offshore crude oil. Ex TC 1, 1.1, p. 1; Ex TC-1D, p. 2.

17. The Project would commence at the crude oil supply hub near Hardisty, Alberta, Canada, and extend to existing terminals in Wood River and Patoka, Illinois. Initially, the pipeline would have a nominal capacity to transport 435,000 barrels per day ("bpd"). TC 1, 1.2, p. 1. A barrel of oil is equal to 42 gallons. Ex TC 1C, "Pipeline Risk Assessment and Environmental Consequence Analysis," p. 7-1. As a result of a successful open season, Keystone has received sufficient shipper commitments to support a subsequent extension of the project to Cushing, Oklahoma, which will include additional pumping capacity to expand the nominal capacity to 591,000 bpd. Ex TC 1D, p. 2.

18. The Project is an approximately 1,800 mile pipeline with about 1,400 miles in the United States. Ex TC 15, p. ES-2; Ex TC 1, 1.2, p. 1.The South Dakota portion of the pipeline will be approximately 220 miles in length and will extend from the North Dakota border in Marshall County to the Nebraska border in Yankton County. The Project is proposed to cross the South Dakota counties of Marshall, Day, Clark, Beadle, Kingsbury, Miner, Hanson, McCook, Hutchinson, and Yankton. Ex TC 1, 1.2 and 2.1.1, pp. 1 and 7. Detailed route maps are presented in Ex TC 1A, Ex TC 9 and Ex TC 10.

19. Construction of the Project is proposed to commence at the end of May or the first part of June 2008 and be completed in November 2009. Construction in South Dakota will be conducted in three spreads, proceeding in a north to south direction. The first spread is planned for completion in 2008 and the remaining two spreads in 2009. The Applicant expects to place the Project in service in November 2009. TR 187, 583.This in-service date is consistent with the requirements of the Applicant's shippers who have made the contractual commitments that underpin the viability and need for the project. Ex TC 1, 1.4, p. 1; Ex TC 2D, pp. 2-3.

20. The pipeline in South Dakota will extend from milepost 217.7 to milepost 437.4, approximately 220 miles. The pipeline will have a 30-inch nominal diameter and be constructed

using API 5L X70 high-strength steel. An external fusion bonded epoxy ("FBE") coating will be applied to the pipeline and all buried facilities to protect against corrosion. Cathodic protection will be provided by impressed current. The pipeline will have batching capabilities and will be able to transport products ranging from light crude oil to heavy crude oil. TC 1, 2.2-2.2.1, p. 7; Ex TC 6D, pp. 2, 9; Ex TC 6R1, p. 2.

21. The pipeline will operate at a maximum operating pressure of 1,440 psi. TR 44, 315; TC 1, 2.2.1, p. 7. Pursuant to 49 CFR 195.402, the Project may operate at up to 1584 psi in an abnormal operating condition. Such abnormal operating conditions are transient and short term. Ex TC 6R2, p. 8.

22. The Project will have four pump stations in South Dakota, located in Day, Beadle, Miner and Hutchinson Counties. The pump stations will be electrically driven and will be required to pump the crude oil through the pipeline. Pump units will be installed to meet the nominal design flow rate of 591,000 bpd. Fourteen mainline valves will be located in South Dakota. Seven of these valves will be remotely controlled, in order to have the capability to isolate sections of line rapidly in the event of an emergency to minimize impacts or for operational or maintenance reasons. Four of the valves are check sets comprised of one manual valve and one check valve. The purpose of a check valve is to eliminate any spill volume backflow into the river crossing in the event of leak or any other potential requirement for isolation. The valves will be capable of being locked open for passage of in line inspection tools, and the pipeline will be 100 percent pigable. TR 299-300, 497; Ex TC 1, 2.2.2-2.2.3, p. 9; Ex TC 6D, pp. 2-3.

23. The pipeline will be constructed within a 110-foot wide corridor, consisting of a temporary 60-foot wide construction right-of-way and a 50-foot permanent right-of-way. Additional workspace will be required for stream, road, and railroad crossings, as well as hilly terrain and other features. The Applicant has committed to reducing the construction right-of-way to 85 feet in certain wetlands to minimize impacts. Ex TC 1, 2.2.4, p. 9; Ex TC 5D, pp. 2, 11.

24. The Project will be designed, constructed, tested, and operated in accordance with all applicable requirements, including the U.S. Department of Transportation, Pipeline Hazardous Materials and Safety Administration (PHMSA) regulations set forth at 49 CFR Part 195, as modified by the Special Permit issued for the Project by PHMSA (see Finding 71). These federal regulations are intended to ensure adequate protection for the public and the environment and to prevent crude oil pipeline accidents and failures. Ex TC 1, 2.2, p. 7; Ex TC 11; Ex TC 6D, pp. 2, 12-14.

25. The current estimated cost of the Keystone Project in South Dakota is $500 million. TR p. 42.

Demand for the Facility

26. The transport of additional crude oil production from the WCSB is necessary to meet growing demand by refineries and markets in the U.S. The need for the project is dictated by a number of factors, including increasing WCSB crude oil supply combined with insufficient export pipeline capacity; increasing crude oil demand in the U.S. and decreasing domestic crude supply; the opportunity to reduce U.S. dependence on foreign off-shore oil through increased access to stable, secure Canadian crude oil supplies; and binding shipper commitments to utilize the Keystone Pipeline Project. Ex TC 1, 3.0, pp. 18-19; Ex TC 2D, pp. 4-5.

27. According to the U.S. Energy Information Administration ("EIA"), U.S. demand for petroleum products has increased by over 17 percent or 3,000,000 bpd over the past 10 years and

is expected to increase further. The EIA estimates that total U.S. petroleum consumption will increase by approximately 5.3 million bpd over the next 20 years, representing average demand growth of about 265,000 bpd per year (EIA Annual Energy Outlook 2006). Ex TC 1, 3.0, pp. 18-19; Ex TC 2D, pp. 4-5.

28. At the same time, domestic U.S. crude oil supplies continue to decline. For example, domestic crude production in the Petroleum Administration for Defense District II ("PADDII"), Keystone's initial target delivery area, continues to decline at an average rate of three percent per year. Over the past 20 years, PADDII crude oil production has decreased by over 600,000 bpd or 60 percent (Canadian Association of Petroleum Producers ("CAPP") April 2005). Ex TC 1, 3.0, pp. 18-19; Ex TC 2D, pp. 4-5.

29. Keystone will provide a number of opportunities for refiners in the U.S. to utilize Canadian crude oil. Keystone's incremental pipeline capacity will provide the U.S. access to secure and growing Canadian crude oil supplies. Access to incremental Canadian crude supply also will provide an opportunity for the U.S. to offset declines in domestic crude oil production and decrease its dependence on off-shore foreign crude supplies. Ex TC 1, 3.0, pp. 18-19; Ex TC 2D, pp. 4-5.

30. Reliable and safe transportation of crude oil will help ensure that U.S. energy needs are not subject to unstable political events. Established crude oil reserves in the WCSB are estimated at 179 billion barrels (CAPP 2005). Over 97 percent of WCSB crude oil supply is sourced from Canada's vast oil sands reserves located in northern Alberta. The Alberta Energy and Utilities Board estimates there are 175 billion barrels of established reserves recoverable from Canada's oil sands. Alberta has the second largest crude oil reserves in the world, second only to Saudi Arabia. Ex TC 1, 3.0, pp. 18-19; Ex TC 2D, pp. 4-5.

31. Keystone has received sufficient shipper commitments to support a subsequent extension of the project to Cushing, Oklahoma, which will require additional pumping capacity to expand the nominal capacity to 591,000 bpd. Ex TC 1D, p. 2.

Environmental

32. In order to construct the Project, Keystone was required to obtain a Presidential Permit from the U.S. Department of State ("Department of State") authorizing the construction of facilities across the international border. Ex TC-1, 1.8, pp. 4-5.

33. Because Keystone was required to obtain a Presidential Permit from the Department of State, the National Environmental Policy Act ("NEPA") required the Department of State to prepare an Environmental Impact Statement ("EIS") for the entirety of the proposed pipeline route. Ex TC-15. The extensive environmental studies that Keystone provided to the Department of State and attached as Exhibit C to the Application are summarized in the Application. These studies included surveys for threatened and endangered species and associated habitat, as well as extensive surveys for cultural resources. Ex TC-1 and TC-1C. On August 10, 2007, the Department of State issued a Draft EIS ("DEIS"), which tentatively concluded that the Project would result in limited adverse environmental impacts both during construction and operation, and would be an environmentally acceptable action. Ex TC-15. The comment period on the DEIS ended on September 24, 2007; however, additional comments were accepted by the Department of State into November, 2007, and the Final EIS ("EIS"), dated January 11, 2008, was released in January, 2008. EIS cover letter and Title Page; EIS, pp. I-14. On January 15, 2008, the Commission issued a Notice of and Order for Taking Judicial Notice of the EIS pursuant to SDCL 1-26-19(3).[2] The EIS reiterated

[2] The EIS is available via the link to the Department of State's Keystone Project web page on the

that the Keystone project would result in limited adverse environmental impacts, if constructed and operated consistent with Keystone's plans and applicable permit conditions. EIS, p. ES-35.

34. Extensive consultations were conducted by the Applicant with federal and state environmental agencies in developing its application. Numerous federal and state agencies have either regulatory jurisdiction over aspects of construction of the Project or input into the NEPA process. Specific examples include the U.S. Army Corps of Engineers, which exercises permitting authority under Section 404 of the Clean Water Act; the USFWS, which is responsible for compliance with Section 7 of the Endangered Species Act; and the State Historical Preservation Office ("SHPO"), which works with the Department of State and the federal Advisory Council on Historic Preservation to ensure compliance with Section 106 of the National Historic Preservation Act. Ex TC 4D, pp. 3, 8-10, 12; Ex TC 4R, pp. 1-2.

35. In Table 3 to the Application, the Applicant summarizes the environmental impacts that its analysis indicates could be expected to remain after its Construction Mitigation and Reclamation Plan is implemented. Ex TC 1, pp. 26-29.

36. The proposed route is in the James River Valley, a broad valley of low relief that trends north to south across the eastern portion of the state. The James River Valley is situated between areas of higher elevation, the Coteau du Missouri to the west and the Coteau du Prairies to the east. These land forms consist almost entirely of geologically recent glacial deposits and lake beds. The James River and the Missouri River constitute the only major river valleys to be crossed, with approximately 140 feet of relief where the route crosses the James River and 100 feet of relief where the route drops into the Missouri River Valley. Exhibit A to the Application includes soil type maps and aerial photograph maps of the Keystone pipeline route in South Dakota that indicate topography, land uses, project mileposts and Section, Township, Range location descriptors. Ex TC 1, pp. 29-30; Ex TC 1A; Ex TC 4D, p. 4.

37. The surficial geologic deposits along the proposed route are composed of glacial drift consisting primarily of glacial till deposits. The glacial till deposits can be hundreds of feet thick especially in the eastern part of the state. The surficial deposits also may include loess (fine grained glacial material re-deposited by wind) and alluvium. Ex TC 1, 5.3.2, p. 30.

38. Sand, gravel and crushed stone are the only major mineral resources existing along the proposed route. No oil, natural gas, coal or metallic ore resources are located in the vicinity of the route, and it does not cross any active quarries or mines. Ex TC 1. 5.3.3, p. 31.

39. Soil maps for the route are provided in Exhibit TC-1A. In northern portions of the state, most of the soils have thick, dark top soil layers and mixed mineralogy. Houdek, Prosper and Clarno Soils series occur on nearly level to rolling glacial till plains. From central Miner County to the Nebraska state line, uplands are formed from both loess and medium textured glacial till. Additional details on general soil characteristics are contained in Keystone's November 2006 Environmental Report, Exhibit TC-1C.

40. Grading and excavating for the proposed pipeline and ancillary facilities will disturb a variety of agricultural, rangeland, wetland and forestland soils. Prime farmland soils may be altered temporarily following construction due to short-term impact such as soil compaction from equipment traffic, excavation and handling. However, potential impacts to soils will be minimized or mitigated by the soil protection measures identified in the Construction Mitigation and Reclamation Plan (CMR

Commission's web page for Docket HP07-001 at:
http://puc.sd.gov/dockets/hydrocarbonpipeline/2007/hp07-001.aspx

Plan) to the extent such measures are fully implemented. The measures include procedures for segregating and replacing top soil, trench backfilling, relieving areas compacted by heavy equipment, removing surface rock fragments and implementing water and wind erosion control practices. Ex TC 1, 5.3.4, p.32; Ex TC 1B.

41. To accommodate potential discoveries of contaminated soils, Keystone made a commitment in the Application to develop, in consultation with relevant agencies, procedures for the handling and disposal of unanticipated contaminated soil discovered during construction. These procedures will be added to the CMR Plan. Ex TC 1, 5.3.4, p.32.

42. Primary surface drainages include Foster Creek and associated tributaries in southwestern Clark County; Pearl Creek and its tributaries in northeastern Beadle County; the Wolf Creek drainage in Hanson and Hutchinson Counties; and the James River, Beaver Creek and the Missouri River in Yankton County. The Missouri River at the proposed crossing is approximately 2,000 feet wide and the crossing will be located at the head of a braided reach downstream of the Highway 81 Bridge. Marne Creek and a riverside channel border the proposed approach to the river. Gavins Point Dam, a major control structure on the Missouri River, is located about three miles upstream of the proposed crossing. A large number of prairie potholes, ponds and small lakes are located along the proposed route in southern Day County and Clark County. Ex TC 1, 5.4.1, pp. 33-34.

43. For approximately 15 miles in the northern portion of Marshall County, the Project crosses or is in proximity to the Dayton-Crow Creek Ditch and Crow Creek drainage system that drains into Renzienhausen and Putney Sloughs and ultimately the James River. TR 643; TR 739-742; Ex L. Anderson 11; Ex TC 1A, SD GSM Soils and Route Maps, Map 1; Ex Sieh 1; Ex WEB 15, pp. 23, 25, 30.

44. Five perennial streams and rivers, including the Missouri River, and approximately 112 intermittent water bodies will be crossed during construction of the Project in South Dakota. Keystone will directionally drill the Missouri River crossing. Keystone intends to use open-cut trenching at the other perennial streams and intermittent water bodies. The open cut wet method can cause the following impacts: loss of in-stream habitat through direct disturbance, loss of bank cover, disruption of fish movement, direct disturbance to spawning, water quality effects and sedimentation effects. Alternative techniques include open cut dry flume, open cut dam-and-pump and horizontal directional drilling. Permitting of water body crossings, which is currently underway, will ultimately determine the construction method to be utilized. Keystone committed to mitigate water crossing impacts through implementation of procedures outlined in the CMR Plan. Ex TC 4D, p. 11; Ex TC 1, 2.2.6.2, pp.13-14 and 5.4.1, pp. 36.

45. The pipeline will be buried at an adequate depth under channels, adjacent flood plains and flood protection levees to avoid pipe exposure caused by channel degradation and lateral scour. Determination of the pipeline burial depth will be based on site-specific channel and hydrologic investigations where deemed necessary. Ex TC 1, 5.4.1, p. 35.

46. Although improvements in pipeline safety have been made, the risk of a leak cannot be eliminated. While rare, spills consisting of up to tens of thousands of barrels of oil do happen. TR 387, 1534. Keystone commissioned DNV, an independent firm recognized as an industry expert on spill frequency and volume analysis, to conduct a preliminary spill frequency and spill volume risk assessment for the Project. DNV used information from a number of sources, including the national database that is controlled by PHMSA. Based on the results of this assessment, Keystone's environmental consulting firm for the Project, ENSR, used the spill frequency and volumes to

estimate the environmental consequences of a leak or spill through a risk assessment. Ex TC 7D, p. 4-5.

47. DNV estimated the chance of a leak from the Project to be not more than once every seven to 11 years over the entire length of the pipeline in the United States, depending on product and throughput. Using the most frequent seven year interval, this equates to a spill no more than once every 41 years at any location along the 220 miles of pipeline in South Dakota. Ex TC 7D, p. 5.

48. DNV's spill frequency and volume estimates are conservative by design, overestimating the risk since the intent is to use the assessment for planning purposes. The risk assessment overestimates the probable size of a spill to ensure conservatism in emergency response and other planning objectives. The spill data used by DNV was based on reporting criteria of 50 barrels or more. Since the PHMSA reporting criteria changed in 2002 to require reporting of spills of five barrels or more, the median size of a crude oil spill has been three barrels. If a spill were to occur on the Keystone pipeline, these data indicate that the spill is likely to be small. Ex TC 7D, p. 5.

49. Risk assessment is an iterative process. Keystone committed to update and refine such information on an on-going basis in an effort to continually improve the accuracy of the assessment. This additional information will continually be incorporated into Keystone's contingency planning. Ex TC 7R1, p. 2

50. Except for 18.3 miles of sandy soils, 16.2 miles of which occur over shallow aquifers, the Project route in South Dakota is underlain predominantly by glacial till. This constitutes approximately 92-93 percent of the Project length in South Dakota. TR 364, 818, 1109. Till is a type of soil material that is virtually impermeable to the movement of water or other fluids. TR 1078, 1084; 1108. Till operates to isolate aquifers below from infiltration by contaminants, and in the event of a release of contaminants, contamination of underlying aquifers is unlikely to occur. TR 784-785, 812-817; Ex TC 7D, p. 7; Ex Staff 11, p. 4; Ex Staff 20.

51. Surficial karst areas are not present in South Dakota, and therefore karst deposits are not a hydrogeologic or structural risk along the Project route in South Dakota. TR 802; Ex Staff 11, p. 4. The Niobrara Formation, which can be associated with karst formations, is deep below the land surface and is a marl type formation and not the karst type formation to be of concern. TR 1081; Ex TC. 7R1, pp. 8-9.

52. WEB's expert witness, Dr. Perry Rahn, presented evidence that alluvium outwash finger deposits, as depicted on the statewide "Geologic Map of South Dakota" prepared by the South Dakota Geological Survey, would be crossed by the Project and offered the opinions that such deposits indicate the presence of potentially vulnerable aquifer areas and that a preferable route would therefore be located a few miles to the east to avoid these alluvium outwash deposits. TR 1078-1080; Ex WEB 3; Ex WEB 5. This evidence was contradicted by other evidence. Another WEB witness, Derrick Iles, State Geologist and administrator of the South Dakota Geological Survey, testified that the areal extent of the alluvial outwash fingers was overrepresented on the large scale map and that the indications of alluvium deposits should not be interpreted to indicate the presence of surficial or shallow aquifers. Mr. Iles further testified that such alluvium is predominantly composed of low permeability materials and generally overlays low permeability till materials. TR 1095-97, 1104, 1109. Except for the evidence regarding the presence of shallow groundwater in the five to seven percent of the Project located in the northwestern corner of Marshall County discussed in Findings 55 through 58, no evidence was offered by any party of an

actual shallow well or the confirmed presence of a surficial or shallow aquifer beneath the remaining 92 - 95 percent of the route.[3]

53. Intervenors have argued that borings along the entire Project route should be performed prior to approval of a permit. Based upon Findings 50 - 52, the Commission finds that the evidence does not justify such a requirement. TR 823. The Commission has found that the area in northwestern Marshall County is an area of greater vulnerability and has addressed this appropriately in Condition 43.

54. A surficial aquifer is one that is at or near the surface. A shallow aquifer is 50 feet deep or less. TR 406. The segment of the Project from the North Dakota border to approximately 11-12 miles to the south in northwestern Marshall County is an area where there are shallow and surficial aquifers. TR 406; 597; 636; 782, 785; 790; Ex Staff 19; Ex WEB 17, pp. 33-39. Intervenor Lillian Anderson testified that there are eight wells on her family's farm located in Section 21, T 128 N, R 59 W in northwestern Marshall County that are 20-23 feet deep and are used for household use, livestock watering and farming operations such as spraying. TR 597, 600, 636.

55. Intervenor Lillian Anderson also testified that water saturated sand is encountered at five to ten feet below land surface on her family's farm. This water table level is consistent with the aquifer surface level of the James Aquifer and surface elevations in the vicinity of the Anderson farm. Ex Wade 1; Ex L.Anderson 7; Ex WEB 17, 33. The surficial aquifer area in northwestern Marshall County is in all probability hydraulically connected to the Middle James Aquifer, referred to in Exhibit WEB 7 as the James Aquifer. TR 782, 784-785, 790; Ex Staff 11; Ex Staff 20; Ex WEB 7.

56. Surficial aquifers or shallow aquifers with sandy, highly permeable soils overlying them are considered vulnerable. TR 365. Although the Middle James Aquifer was not identified as an HCA in the DEIS, the James or Middle James Aquifer could be considered a potential hydrogeologically sensitive area because of its hydraulic connection to the surficial sands and aquifer in northwestern Marshall County. TR 785, 1054; Ex Staff 11, p. p.1, 3.

57. The Middle James Aquifer is the only source of drinking water currently used for the BDM rural water system. TR 692.The six wells for the BDM rural water system are located in Section 3 of Township 127 North, Range 57 West in Marshall County, approximately 10 miles east of the Project. TR 692-694; Ex Wade 1. As of 1972, there were 50 wells finished into the James Aquifer. Ex WEB 7, p. 33. WEB stated it is also looking at developing wells in the Middle James Aquifer to serve the Day County area. TR 1317-1319, 1404-1405.

58. Although the elevation of the land surface rises from west to east in northwestern Marshall County, the water in the James Aquifer flows east from below the Project area generally in the direction of BDM's wells. TR 693, 800; Ex Wade 1; Ex WEB 17, p. 41.

59. The rate that groundwater flows, however, is slow. TR 1082-1083. The rate of movement in the James Aquifer is only a few tens of feet per year. Ex WEB 17, p. 42.

60. Because of their high solubility and their very low Maximum Contaminant Levels ("MCLs"), the constituents of primary concern in petroleum, including crude oil, are benzene,

---

[3] In his pre-filed testimony, Kirk Madsen states that there is a very high water table in the vicinity of his farm which he states is located one-half mile from the Project in Clark County where it crosses the county line near Carpenter. Mr. Madsen did not appear at the hearing, his pre-filed testimony was not offered as evidence and no examination could occur concerning the details of this site. Applicant offered evidence in response to Mr. Madsen's pre-filed testimony. Ex TC 5R, p. 3; Kirk Madsen Direct.

toluene, ethyl benzene and xylene. These constituents are commonly referred to as BTEX. TR 374, 382. The crude oil to be shipped through the Project will be similar in composition to other crude oils produced throughout the world and currently shipped in the United States. TR 380-384. The BTEX concentration in the crude oil to be shipped through the Project will be less than one percent. Ex TC 19.

61. Crude oil is lighter than water and accumulates on the groundwater surface. TR 374, 376. With time BTEX compounds can be dissolved into the groundwater. TR 374. When released into a groundwater formation, BTEX compounds move slower than the groundwater itself due to natural attenuation properties and do not migrate significant distances from the point of release. A recent report evaluated more than 500 petroleum release sites and determined that in 75 percent of the cases, the contaminant plume was within 250 feet of the source. TR 375; TC 7D, p. 7. At the Bemidji crude oil release site, it has been determined that the BTEX front moves five times slower than the groundwater and over a twenty year period, had moved a total of 170 yards or approximately 510 feet from the oil source. Ex TC 7D, p. 8.

62. Soils and groundwater contaminated by a petroleum release can be remediated. TR 821-822, 1159. Effective emergency response can reduce the likelihood and severity of contamination. TR 814-815, 821-822, 1152. The experience of DENR is that pipeline facilities react very quickly to releases. TR 1152, 1167.

63. Based upon Findings 59 through 62, the Commission finds the risk that a release in northwestern Marshall County will contaminate the BDM water supply to be very low.

64. The Commission nevertheless finds, consistent with Findings 43 and 54-58 and giving due consideration to the concerns of the Marshall County Commission expressed in its Resolution dated November 27, 2007, Ex G. Cassels, that the shallow groundwater and sand area in northwestern Marshall County is an area of vulnerability that warrants additional vigilance and attention in Keystone's integrity management and emergency response planning and implementation process. The evidence demonstrates that the James or Middle James Aquifer is used by landowners in the Project area, that many wells are developed into the aquifer, including BDM's, that the area is connected through a network of drainage ditches and surface watercourses with slough areas and ultimately the James River and that rapid discovery and response can significantly lessen the impact of a release on vulnerable groundwater, surface water and wildlife resources. The Commission further finds that if additional surficial aquifers are discovered in the course of pipeline construction, such aquifers should have similar treatment. The Commission accordingly finds that Condition 43 shall be adopted.

65. Of the approximately 220-mile route in South Dakota, all but one-half mile is privately owned. The one-half mile non-private segment is state-owned and managed. No tribal or federal lands are crossed by the proposed route. Ex TC 1, 5.7.1, p. 49.

66. Table 7 of the Application identifies the land uses affected by the pipeline corridor. Among other things, it shows that no mineral extraction sites will be crossed by the project based upon photo interpretation of existing aerial photos, the project will not cross or be co-located with any major industrial sites, the pipeline will not cross active farmsteads, but may cross near them and the pipeline will not cross suburban and urban residential areas. Other than the Middle James Aquifer area in northwestern Marshall County and the Missouri River at Yankton, the project will not cross water sources for municipal water supplies or organized rural water districts. Ex TC1, 5.7.1, pp. 49-50.

67. The pipeline will be compatible with the predominant land use, which is rural agriculture, because the pipeline will be buried to a depth of four feet in fields and will interfere only minimally with normal agricultural operations. The pipeline will be placed below agricultural drain tiles, and drain tiles that are damaged will be repaired. The only above-ground facilities will be pump stations and block valves located at intervals along the pipeline. Ex TC 1, 5.7.3, pp.51.

68. Concerns were expressed by Intervenors Scott Anderson, Lillian Anderson and other Intervenors that the heat from the pipeline would cause various negative effects, including reduced crop production and increased disease, noxious weed and rodent problems. TR 595, 684, 893. The pipeline will not be artificially heated. TC 3R, p. 4. Studies done on the relationship of moderate temperature increases to crop production do not indicate that the increase in soil temperature to be expected from the Project will have a material detrimental impact on crops or plants. Ex TC 3R, pp. 1-4. No evidence of rodent problems having actually occurred from pipeline operations was presented. Keystone's CMR Plan is designed to restore agricultural land to pre-construction productivity, and experience with the thousands of miles of pipelines in the United States indicates that agricultural productivity is restored to pre-construction levels. Ex TC 5R, p. 2.

69. Concerns were expressed by Intervenors Chris Hastings, Lillian Anderson and other Intervenors concerning the potential for farm machinery to sink into the soil over the pipeline and strike it, causing a leak, or for machinery such as deep rippers to damage the pipeline. TR 596, 687; Ex L. Anderson 14A, 14B and 14C. Machinery is not more likely to sink after post-construction compaction than before. TR 347-349. With the four feet of cover, Keystone's engineer stated there should be no issues with farm machinery crossing over the line. TR 343; Ex TC 26, pp. 5-6. The Project's high strength X70 steel will have a puncture resistance of 51 tons of digging force. TR 328, 349. Keystone will post signage concerning the location of the pipe in accordance with code at all road crossings and at other locations such as fences where they won't interfere with farming operations to advise people, including landowners, of the presence of the pipeline. TR 254-255. Keystone will have a public awareness program in place and an informational number to call where landowners and others can obtain information concerning activities of concern. TR 343-347. The Commission finds that the risk of damage by ordinary farming operations is very low and that problems can be avoided through exercise of ordinary common sense.

70. In its testimony, Keystone's witness stated that if previously undocumented sites are discovered within the construction corridor during construction activities, all work that might adversely affect the discovery will cease until Keystone, in consultation with the appropriate agencies such as SHPO, can evaluate the site's eligibility and the probable effects. If a previously unidentified site is recommended as eligible to the National Registry of Historic Places, impacts will be mitigated pursuant to the Unanticipated Discovery Plan submitted to the SHPO. Treatment of any discovered human remains, funerary objects, or items of cultural patrimony found on federal land will be handled in accordance with the Native American Grave Protection and Repatriation Act. Construction will not resume in the area of the discovery until the authorized agency has issued a notice to proceed. If human remains and associated funerary objects are discovered on state or private land during construction activities, construction will cease within the vicinity of the discovery and the county coroner or sheriff will be notified of the find. Treatment of any discovered human remains and associated funerary objects found on state or private land will be handled in accordance with the provisions of applicable state laws. Ex TC 4D, p. 15. In accordance with this commitment, the Commission finds that Condition 50 should be adopted.

Design and Construction

71. Keystone has received a special permit ("Special Permit") from PHMSA, providing a waiver of compliance from PHMSA's pipeline safety regulation 49 CFR 195.106. This Special Permit allows Keystone to establish a maximum operating pressure using a 0.80 design factor in lieu of 0.72, subject to fifty-one conditions. Ex TC 6D, p. 12-14; Ex TC 11. In the Special Permit, PHMSA made two specific findings regarding safety: (i) that granting the permit was "not inconsistent with pipeline safety"; and (ii) that granting the permit subject to the 51 conditions "will provide a level of safety equal to, or greater than, that which would be provided if the pipelines were operated under existing regulations." In Condition 2, the Commission requires Keystone to comply with all of the conditions of the Special Permit.

72. TransCanada operates approximately 11,000 miles of pipelines in Canada with a 0.8 design factor and requested the Special Permit to ensure consistency across its system and to reduce costs. PHMSA has previously granted similar waivers adopting this modified design factor for natural gas pipelines. TR 274-278, 288-291; Ex TC 6D, pp. 13-14.

73. Four categories are not covered under the Special Permit: (i) navigable waterways, (ii) population areas, (iii) highway, railroad and road crossings, and (iv) pump station valve assemblies and pigging and measurement facilities. These areas are excluded from the Special Permit's waiver primarily because of stress concerns during installation and particular stress or risk concerns with these areas. TR 276-278; Ex TC 6D, p. 14.

74. Violation of any of the conditions of the Special Permit can result in revocation by PHMSA of the permit accompanied by a de-rating of the pipeline pressure such that the design factor would return to 0.72. TR 351.

75. Application of the 0.8 design factor and API 5L PSL2 X70 high-strength steel pipe results in use of pipe with a 0.386 inch wall thickness, as compared with the 0.429 inch wall thickness under the otherwise applicable 0.72 design factor, a reduction in thickness of .043 inches. Ex TC 6R1, p. 2, 8. PHMSA found that in conjunction with the 51 conditions it imposed, the 0.8 design factor would not reduce the safety of the pipeline. See also testimony of Staff expert Walsh. TR 1413-1420. No evidence was presented in this proceeding upon which the Commission could base the specification of an alternative pipe wall thickness. Under federal law, PHMSA is delegated exclusive authority over the establishment and enforcement of safety-orientated design and operational standards for hazardous materials pipelines (see Conclusion of Law 14).

76. In preparation for the Project, Keystone conducted a pipeline threat analysis, using the pipeline industry published list of threats under ASME B31.8S and PHMSA to determine threats to the pipeline. Identified threats were manufacturing defects, construction damage, corrosion, mechanical damage and hydraulic event. Safeguards were then developed to address these threats. TR 266-360; Ex TC 6D, p. 7 et seq.

77. Steel suppliers, mills and coating plants were pre-qualified using a formal qualification process consistent with ISO standards. The pipe is engineered with stringent chemistry to ensure weldability during construction. Each batch of pipe is mechanically tested to prove strength, fracture control and fracture propagation properties. The pipe is hydrostatically tested. The pipe seams are visually and manually inspected and also inspected using ultrasonic instruments. Each piece of pipe and joint is traceable to the steel supplier and pipe mill shift during production. The coating is inspected at the plant with stringent tolerances on roundness and nominal wall thickness. A formal quality surveillance program is in place at the steel mill and at the coating plant. TR 269-273, 301-305; Ex TC 6D, p. 8-9.

78. All mills supplying pipe for the Keystone project were pre-qualified by TransCanada and were personally visited by TransCanada to perform due diligence with respect to their compliance with these standards. TR 270.

79. All pipe welds will be examined around 100 percent of their circumferences using ultrasonic or radiographic inspection. The coating is inspected and repaired if required prior to lowering into the trench. After construction the pipeline is hydrostatically tested in the field to 125 percent of its maximum operating pressure, followed by caliper tool testing to check for dents and ovality. Ex TC 6D, p. 9.

80. A fusion-bonded epoxy ("FBE") coating will be applied to the external surface of the pipe to prevent corrosion. Liquid epoxy or FBE coating will be applied to buried piping extending to approximately 18 inches above grade at soil to air interfaces. Then, the liquid epoxy or FBE will be painted over extending down to grade level to prevent damage to the corrosion coating from the sun's ultraviolet rays. Keystone will meet the requirement of US DOT 49 CFR Part 195.581. TR 272-273; Ex TC 6D, p. 9; Ex TC 6R2, p. 3.

81. TransCanada has thousands of miles of this particular grade of pipeline steel installed and in operation. TransCanada pioneered the use of FBE, which has been in use on its system for over 28 years. There have been no leaks on this type of pipe installed by TransCanada with the FBE coating and cathodic protection system during that time. When TransCanada has excavated pipe to validate FBE coating performance, there has been no evidence of external corrosion. TR 272; Ex TC 6D, pp. 9-10.

82. A cathodic protection system will be installed comprised of engineered metal anodes, which are connected to the pipeline. A low voltage direct current is applied to the pipeline, resulting in corrosion of the anodes rather than the pipeline. In contrast to code, which allows cathodic protection to be installed up to one year after operation, Keystone will install and energize its cathodic protection system as part of construction. TR 279. FBE coating does not fail in a cathodic protection inhibiting manner. TR 278. The combination of these two corrosion protection measures is expected to significantly mitigate external corrosion. A tariff specification of 0.5 percent solids and water by volume will be utilized to minimize the potential for internal corrosion. This specification is half the industry standard of one percent. In Condition 40, the Commission requires Keystone to implement and enforce its crude oil specifications in order to minimize the potential for internal corrosion. Further, the pipeline is designed to operate in turbulent flow to minimize water drop out, another potential cause of internal corrosion. During operations, the pipeline is cleaned using in-line inspection tools. TR 272, 306; Ex TC 6D, p. 9.

83. Keystone will perform interference surveys and make adjustments to the cathodic protection system to ensure that the Project's cathodic protection system will not interfere with any foreign utility's cathodic protection system or vice versa. This particular process is consistent with condition 36 of the PHMSA Special Permit. The surveys will be performed as the cathodic protection system is energized during construction and prior to commencing operations. The risks of stray current or interference have proven very manageable over thousands of metallic pipe crossings. TR 214, 271; Ex TC 11, p. 12. Staff expert Schramm concluded that the cathodic protection and corrosion control measures that Keystone committed to utilize would meet or exceed applicable federal standards. TR 1451; Ex Staff 16.

84. To minimize the risk of mechanical damage to the pipeline, it will be buried with a minimum of four feet of cover, one foot deeper than the industry standard, reducing the likelihood of mechanical damage. The steel specified for the pipeline is high-strength steel with engineered

puncture resistance of approximately 51 tons of force. Pipeline industry research indicates that 99 percent of excavators in the United States do not have a digging force capable of exceeding 40 tons. TR 327-329, 331, 345, 349; Ex TC 6D, p. 10.

85. Hydraulic damage is caused by over-pressurization of the pipeline. The risk of hydraulic damage will be minimized through the SCADA system's continuous, real-time pressure monitoring systems and through operator training. TR 310, 314-315; Ex TC 6D, p. 10.

86. The Applicant has prepared a detailed CMR Plan that describes procedures for crossing cultivated lands, grasslands, including native grasslands, wetlands, streams and the procedures for restoring or reclaiming and monitoring those features crossed by the Project. The CMR Plan is a summary of the commitments that Keystone has made for environmental mitigation, restoration and post-construction monitoring and compliance related to the construction phase of the Project. Among these, Keystone will utilize construction techniques that will retain the original characteristics of the lands crossed as detailed in the CMR Plan. Keystone's thorough implementation of these procedures will minimize the impacts associated with the Project. A copy of the CMR Plan was filed as Exhibit B to Keystone's permit application and introduced into evidence as Exhibit TC 1B. Ex TC 1, 2.2.5, p. 13; Ex TC 1B.

87. The CMR Plan establishes procedures to address a multitude of construction-related issues, including but not limited to the following:

- Training
- Advance Notice of Access
- Depth of Cover
- Noise Control
- Weed Control
- Dust Control
- Fire Prevention and Control
- Spill Prevention and Containment
- Irrigation Systems
- Clearing
- Grading
- Topsoil Removal and Storage
- Temporary Erosion and Sediment Control
- Clean-Up
- Reclamation and Revegetation
- Compaction Relief
- Rock Removal
- Soil Additives
- Seeding
- Construction in Residential and Commercial/Industrial Areas
- Drain Tile Damage Mitigation and Repair

Ex TC 1B.

88. Keystone's CMR Plan includes many mitigation steps designed to return the farmer's land to its original production. These include topsoil removal and replacement, compaction of the trench line, decompaction of the working area, and tilling the topsoil after replacement. There are hundreds of thousands of miles of existing pipelines in the U.S. with the largest portion of these

miles through rural farm areas in which the pipeline right of way has been restored and agricultural production returned to pre-construction yields. Keystone's witness stated that if Keystone fails to return the farm land to pre-construction agricultural production, Keystone would be liable to work with the landowner to restore the lands further or compensate the landowner for the loss of yield. Ex TC 1B; Ex TC 5R, p 2.

89. In grasslands, Keystone's CMR Plan addresses the use of native seed mixtures where appropriate. Staff witness Janssen originally recommended that grassland crossings be conducted only in the fall to facilitate the regeneration of seeded grasses after construction. Based upon the evidence presented at the hearing, Staff agreed that this recommendation would be impractical to implement and may cause more negative effects than it resolved and that the benefits would not justify the significant increases in cost and logistical complexity, and Staff withdrew the recommendation in its Reply Brief. TR 189-190; Staff's Reply Brief.

90. The Applicant will use special construction methods and measures to minimize and mitigate impacts where warranted by site specific conditions. These special techniques will be used when constructing across paved roads, highways, railroads, water bodies, and wetlands, and in fenced areas. These special techniques are described in the Application. TC-1, 2.2.6, p. 13-14; TC-5D, p. 2.

91. Of the five perennial streams that are crossed by the proposed route, the Missouri River is the largest water body and is classified as a warm water permanent fishery. Of the other streams that have been classified, habitat is considered more limited as indicated by a warm water semi-permanent (James River) or warm water marginal (Wolf and Beaver Creeks) classification. Ex TC 1, 5.6.2, p. 45.

92. Keystone will horizontal directionally drill the Missouri River crossing, which will aid in minimizing impacts to important game and commercial fish species and special status species. Open-cut trenching will be used at other perennial streams which can affect fisheries. Keystone will use best practices to reduce or eliminate the impact of crossings at the perennial streams, other than the Missouri River. Ex TC 1, 5.6.3.1, p. 46.

93. The Pipeline corridor will pass through areas where shallow and surficial aquifers exist. Since the pipeline will be buried at a shallow depth, it is unlikely that the construction or operation of the pipeline will alter the yield from any aquifers that are used for drinking water purposes. Keystone will investigate shallow groundwater when it is encountered during construction to determine if there are any nearby livestock or domestic wells that might be affected by construction activities. Appropriate measures will be implemented to prevent groundwater contamination and steps will be taken to manage the flow of any ground water encountered. Ex TC 1, 5.4.2, p. 36.

94. Water used for hydrostatic testing during construction and subsequently released would not result in contamination of aquatic ecosystems since the pipe is cleaned prior to testing and the discharge water is monitored and tested. TR 218, 1189-1196; Ex TC 5D, p. 3. In Conditions 1 and 2, the Commission has required that Keystone comply with the DENR's regulations governing temporary use and discharge of water and obtain and comply with the DENR General Permits for these activities.

95. Keystone stated that during construction, it will have numerous inspectors on a construction spread, including two to three environmental inspectors, whose sole responsibility will

be monitoring compliance with the environmental permit requirements. TR 223-224. In Condition 14, the Commission requires that Keystone incorporate such inspectors into the CMR Plan.

96. In addition to those recommendations of Staff and its expert witnesses referenced specifically in these Findings, Staff expert witnesses made a number of recommendations which the Commission has determined will provide additional protections for affected landowners, the environment and the public, and has included conditions in this decision requiring these measures. Staff's final recommendations are set forth in its Brief at pages 9-24 and its Reply Brief at pages 6 and 7. See also Staff Exhibits and testimony in Transcript Vols. VI and VII. These final recommendations were not opposed by Keystone and are approved by the Commission as conditions to the permit.

97. Conditions 15, 19, 21 and 30 relate to construction and its effects upon affected landowners and their property. The Applicant may encounter physical conditions along the route during construction which make compliance with certain of these Conditions infeasible. If, after providing a copy of this order, including the Conditions, to the landowner and advising Commission staff, the Applicant and landowner agree in writing to modifications of one or more requirements specified in these conditions, such as maximum clearances or right-of-way widths, the Applicant may follow the alternative procedures and specifications agreed to between it and the landowner.

98. Keystone will be required to acquire permits authorizing the crossing of county roads and township roads. These permits will typically require Keystone to restore roads to their pre-construction condition. If its construction equipment causes damage to county or township roads, Keystone will be responsible for the repair of those roads to pre-construction condition. Pursuant to SDCL 49-41B-38, Keystone will be required to post a bond to ensure that any damage beyond normal wear to public roads, highways, bridges or other related facilities will be adequately compensated. Staff witness Muehlhausen recommended that the bond amount under SDCL 49-41B-38 for damage to highways, roads, bridges and other related facilities be set at $3,000,000 for 2008 and $12,000,000 for 2009. Keystone did not object to this requirement. The Commission finds that Condition 31 should be adopted and complied with.

99. The Commission finds that the procedures in the CMR Plan and the other construction plans and procedures that Keystone has committed to implement, together with the conditions regarding construction practices adopted by the Commission herein, will minimize impacts from construction of the Project to the environment and social and economic condition of inhabitants and expected inhabitants in the Project area.

Operation and Maintenance

100. The Keystone pipeline will be designed constructed, tested and operated in accordance with all applicable requirements, including the U.S. Department of Transportation, Pipeline Hazardous Materials and Safety Administration ("PHMSA") regulations set forth at 49 CFR Parts 194 and 195, as modified by the Special Permit. These federal regulations are intended to ensure adequate protection for the public and the environment and to prevent crude oil pipeline accidents and failures. Ex TC 6D, p. 2.

101. The safety features of Keystone's operations are governed by 49 CFR Part 195 and include aerial inspection 26 times per year, with any interval not to exceed three weeks, right-of-way maintenance for accessibility, and continual monitoring of the pipeline to identify potential integrity concerns. The surveillance activities will provide information on possible encroachments and nearby construction activities, erosion, exposed pipe and other concerns that may affect the safety and

operation of the pipeline. Evidence of population changes will be monitored and high consequence areas will be identified as required by federal regulations. TR 282; Ex TC 1, 2.3.1, pp. 14-15; Ex TC 6D, p. 3. The Project will be 100 percent pigable and in line inspection and cleaning will be performed no less often than required by federal regulations and the Special Permit. Ex TC 6D, pp. 9, 14; Ex TC 6R2, pp. 2-3; Ex TC 11.

102. The Project will have a Supervisory Control and Data Acquisition (SCADA) system to remotely monitor and control the pipeline. The SCADA system will include: (i) a redundant, fully functional back-up system available for service at all times; (ii) automatic features within the system to ensure operation within prescribed limits; and (iii) additional automatic features at the local pump station level to provide pipeline pressure protection in the event that communications with the SCADA host are interrupted. The SCADA system will be designed independent of other corporate and business-related systems and will use industrial protocols such as encryption to minimize the potential for hacking. TR 495, 502 et seq; Ex TC 1, 2.3.2, p. 16; Ex TC 8D, p. 7.

103. The SCADA system is capable of a number of functions, including mainline valve position remote indication, mainline valve remote closing and opening control from a control center, remote indication of line pressure and temperature and remote indication of delivery flow and total flow. The pipeline will have a control center manned 24 hours per day 365 days per year with a highly-trained crew. A backup control center will also be constructed and maintained. Communications systems will provide up-to-date information from pump stations and other locations to the control center plus the capability to contact field personnel. A backup communications system is included within the system design and installation. Ex TC 1, 2.3.1, p. 15; Ex TC 8D, p. 7.

104. Keystone will use a series of complimentary and overlapping SCADA-based leak detection systems and methods at the Operational Control Center, including: (i) remote monitoring; (ii) software-based volume balance systems that monitor injection and delivery volumes; (iii) Computational Pipeline Monitoring or model-based leak detection systems that break the pipeline into smaller segments and monitor each segment on a mass balance basis; and (iv) computer-based, non-real-time, accumulated gain/(loss) volume trending to assist in identifying low rate or seepage releases below the 1.5 percent by volume detection threshold. The SCADA and other monitoring and control systems to be implemented by Keystone for the Project are state of the art and consistent with the best commercially available technology. TR 579; Ex TC 8D, p. 7-8; Ex TC 8R, pp. 1-2.

105. Additionally, Keystone will implement and utilize direct observation methodologies, which include aerial patrols, ground patrols and public and landowner awareness programs designed to encourage and facilitate the reporting of suspected leaks and events that may suggest a threat to the integrity of the pipeline. TR 282-283, 351, 536; Ex TC 8D, pp. 8, 10. Aerial inspections can not directly detect slow, pin hole type leaks but can detect secondary effects of such leaks. TR 282-283, 351. Remote sensing technologies that could be employed in pipeline surveillance such as aerial surveillance are in their infancy and practical systems are not currently available. Keystone would consider using such technology if it becomes commercially available. TR 497-498. The Commission finds that such technologies, when available, could provide a valuable enhancement to the Project's inspection and surveillance program and accordingly finds that Condition 47 should be adopted to encourage Keystone's active monitoring of developments in such systems.

106. Keystone will implement abnormal operating procedures when necessary and as required by 49 CFR 195.402(d). If necessary, emergency response procedures will be implemented.

If a leak is suspected and the pipeline is shut down, the operation of the segment will not be resumed until the cause of the alarm or the leak is identified and repaired. Ex TC 1, 2.3.2, p. 16.

107. As required by US DOT regulations, Keystone will prepare an emergency response plan ("ERP") for the system. Ex TC 1, 2.3.2.1, pp. 16-17. The ERP will be submitted to the US DOT for review prior to commencement of pipeline operations. Ex TC 8D, p. 8. Keystone submitted a draft ERP as Exhibit C to the Application. Ex TC 1C. The Commission finds that the ERP and manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies as required under 49 CFR195.402 should also be submitted to the Commission at the time it is submitted to PHMSA to apprise the Commission of its details. The Commission has so specified in Condition 44.

108. Hazardous materials pipeline segments through High Consequence Areas ("HCAs") are subject to the Integrity Management Rule. 49 CFR 195.452. To assure the integrity of pipeline segments that could affect high consequence areas, 49 CFR Section 195.452 requires an operator to conduct a variety of assessments. The assessments include baseline and continual integrity assessments of the line pipe and periodic evaluations of entire pipeline systems to assure the integrity of the pipeline segments that could affect high consequence areas. This is accomplished through the continual identification and addressing of potential problems. Keystone will comply with these requirements. Keystone will perform a fate and transport analysis as a part of its integrity management plan. TR 365 et seq, 508, 547; Ex TC1, Ex TC 1, 2.3.1, pp. 14-15 and 6.4.2, pp. 64-65; Ex TC 6D, p. 3; Ex TC 7R1, pp. 1-6; Ex TC 17; Ex TC 18.

109. HCAs were developed by PHMSA in cooperation with federal, state and non-governmental organizations. PHMSA uses recognized organizations and data sources for mapping HCA information. If previously unidentified HCAs are identified by Keystone through the consultation process with SD DENR, it will incorporate them within one year of identification, as required by 49 CFR 195.452(d)(3). Ex TC 7R1, p 4.

110. Staff witness Jenny Hudson recommended in her testimony that Keystone review the proposed pipeline route and unusually sensitive areas ("USAs") as defined by 49 CFR 195.6 to ensure that all USAs having the ability to be affected in the event of a pipeline release have been identified. Ms. Hudson further recommended that Keystone incorporate local knowledge in its HCA assessment process and determine whether there are additional USAs along the proposed Project route that are not indicated by the National Pipeline Mapping System and incorporate these USAs into Keystone's integrity management and emergency response planning process prior to the pipeline commencing operation. TR 1476; Ex Staff 17, p. 4. The Commission has incorporated this recommendation as appropriate into Conditions 42 and 44. Staff witness Hudson testified that as of this point in the process, Keystone was in compliance with all PHMSA integrity management planning regulations. TR 1474; Ex Staff 17.

111. Keystone has prepared a preliminary ERP as prescribed by 49 CFR Part 194 and contained in Exhibit C of the Application. Ex TC 1C. Keystone will prepare and submit a completed ERP to PHMSA in the first quarter of 2009, prior to the commencement of operations. TR 508-509, 583. Emergency response planning takes into account project-specific sensitive areas, identified through the risk and consequence assessment, based on a worst-case scenario. TR 494; Ex TC 8D, pp. 10-11. In Condition 44, the Commission requires Keystone to complete the ERP and file it with the Commission prior to commencement of pipeline operation.

112. Under the ERP and as required by 49 CFR Section 194.115, Keystone will have first responders (Keystone employees or contract personnel), on call 24 hours a day 365 days per year,

located at various points along the Keystone pipeline, generally located in closer proximity to commercially navigable waterways and other crossings, populated and urbanized areas, unusually sensitive areas, including drinking water locations and ecological, historical, and archaeological resources. Under the ERP, Keystone will deploy site specific emergency response equipment at various points along the pipeline. The location of emergency response personnel and resources will be determined as Keystone completes its ERP. Due to its proximity to the Missouri River, Keystone has identified Yankton as a location for a pipeline maintenance facility and will have emergency responders and other resources based accordingly. Ex TC 8D, pp. 11-23; Ex Staff 22, 2-7, 2-8.

113. If the Keystone pipeline should experience a release, Keystone and TransCanada would be responsible for responding to and cleaning up the release and repairing the pipeline. TR 85, 100, 113-115, 1115-1117, 1127-1130, 1135, 1138, 1142, 1155. The South Dakota Department of Environment and Natural Resources ("DENR") would be involved in the assessment and abatement of the release, and require the leak to be cleaned up and remediated. The DENR has been successful in enforcing remediation laws to ensure the effects of any pipeline releases are mitigated. TR 1109-1170, 1154, 1159.

114. Local emergency responders may be required to initially secure the scene and ensure the safety of the public, and Keystone will provide training in that regard. Ex TC 8D, p. 23. All police and fire departments along the route will be met with and given the appropriate information. Contact with local responders will be made annually. TR 569-570. In Condition 10, the Commission requires the Applicant to commence a program of contacts with state, county and municipal emergency response, law enforcement and highway, road and other infrastructure management agencies serving the Project area in order to educate such agencies concerning the planned construction schedule and the measures that such agencies should begin taking to prepare for construction impacts and the commencement of Project operations.

115. The Commission finds that the threat of serious injury to the environment or inhabitants of the State of South Dakota from a crude oil release is substantially mitigated by the integrity management, leak detection and emergency response processes and procedures that Keystone is continuing to plan and will implement.

Rural Water Crossings

116. A total of eight rural water systems will be crossed by the proposed pipeline. TR 713. The Project may cross as many as 200 rural water pipelines. TR 1391. The Project will cross WEB water lines at 8 to 10 locations, including a 12-inch line in Day County, and will run parallel to a WEB line for approximately 3,000 feet near Amsden Lake. TR 1389-1390.

117. In preparation for construction activities, Keystone will locate rural water lines and other utilities to be crossed by contacting and working with local rural water and irrigation districts and private owners. Whenever possible, the pipeline will be routed under the existing water pipeline and any associated structures. Ex TC 1, 5.4.2, p. 37. Keystone expects to contact and discuss with rural water systems, and other linear facilities such as utilities, highways and railroads, the specifics of crossings to determine any special issues relative to the facilities and will enter into voluntary agreements with other utilities as long as the requirements put forth by those utilities are reasonable. TR 209-211. One of the options available to Keystone is to request a relocation of the existing utility, which Keystone stated would come at its expense if it makes such request. Keystone will seek the most cost-efficient way to meet its objectives while honoring the existence of the existing utility. TR 264.

118. Intervenors WEB and BDM rural water systems expressed concerns about the potential impacts of a release from the Project on the PVC water pipelines, polyethylene (PE) lines and pipe gaskets of rural water systems and requested that the Commission require Keystone to take several actions where the Project crosses rural water lines. These include replacing rural water lines to a depth several feet below the Project (20 feet in the case of WEB), installing a steel casing for 50-250 feet on each side of the Keystone line and replacing the existing PVC gasketed pipe with yellowmine pipe inside the casing and installing the thicker pipe used for road crossings beyond the water line easement, generally 30 to 60 feet. TR 694-697, 1294-1296; Ex WEB 15, p. 5; Ex Wade Pre-Filed Direct, pp. 1-2.

119. The Commission has carefully considered and given due weight to the concerns expressed by WEB and BDM concerning the potential for rural water systems crossed by the Project to suffer damage from a release; however, the Commission finds that requiring Keystone to incur the significant additional expense and construction complexity that these measures would entail for the 200 or so rural water crossings in this state is not supported by the evidence in the record for the reasons set forth in Findings 120 through 124 below.

120. The likelihood that a release will impact a particular rural water crossing is quite remote. As stated in Finding 47, the estimate of DNV consultants is that a release could be expected to occur on the 220 mile portion of the Project in South Dakota once every 41 years. The likelihood that such a release would occur at a location where it would impact a rural water pipeline is significantly less than that, and the likelihood that more than one release would occur that would impact more than one rural water pipeline is even more remote. Additionally, Keystone will employ special precautionary procedures relative to other utilities' and other persons' excavation activities in the vicinity of the Project. TR 259-265.

121. Although contaminated soils can and have posed serious threats to the longevity and structural integrity of pipes and elastomeric gaskets in public water supply systems, TR 418, the evidence in this record demonstrates that even were a spill to occur in the vicinity of a water line and contaminate the surrounding soil, the risk to PVC public water supply pipes that will be crossed by the Project is not high. The constituents of petroleum that are of greatest concern are the BTEX constituents. According to a 2006 American Water Works Association ("AWWA") paper introduced as an attachment to Exhibit TC 7R1, permeation incidents on PVC pipes are rare and no permeation incidents were reported with ductile iron, regardless of the type of gasket used. PVC pipe is highly resistant to gasoline, benzene, and toluene and their water solutions. The study states: "Laboratory results indicate that PVC and ductile iron pipes can be safely used in areas of soil contamination regardless of the level of contamination." PVC is highly resistant to permeation by benzene, toluene, and other compounds in all but the most extreme conditions of contamination. The American Water Works Association Research Foundation has recently completed a report prepared by Iowa State University on the impacts of hydrocarbons on PVC pipes and pipe gaskets which found that "PVC itself is impervious to gasoline, BTEX, and trichloroethylene in groundwater at commonly encountered levels of contamination." Since the concentration of BTEX constituents in the crude oils to be carried by the Project is only one-fifteenth that of gasoline, the risk of impacts is much lower. TR 313; 382, 4518-421, 454-455; Ex TC 7R1, pp. 7-8; Ex TC 6D, pp. 11-12; Ex TC 19.

122. According to AWWA studies, it takes months for even a saturated solution of BTEX to permeate PVC pipe. Ex TC 6D, p. 12. Since the concentrations of BTEX constituents in the crude oils to be carried by the Project is only one-fifteenth that of gasoline, the likelihood of BTEX saturation is lower and the length of time before permeation or destruction of PVC pipe should be expected to be even longer. TR 313, 382. If the Project were to experience a release of product around a rural water PVC pipe, the spill would therefore have to go undetected for a significant

period of time for the oil to permeate or degrade the PVC pipe. The probability of a release happening right at a rural water line that would remain undetected for the many months or even years required to destroy PVC pipe is therefore very low.

123. The Administrator of the DENR's drinking water program is not aware of an exceedance of the MCL for BTEX constituents in this state despite the large number of filling station petroleum releases that have occurred in populated areas. TR 1148, 1203, 1209.

124. Lastly, if such an unlikely confluence of events were to occur (i.e. a spill in the immediate vicinity of a rural water line that remained undetected for a long enough period of time to result in pipe degradation), once discovered, the contaminated soil can be remediated and the impacted water pipe replaced. TR 1159. Keystone would be responsible for such remedial actions. TR 1138. The Commission accordingly finds that to require Keystone to preemptively take the requested protective measures is not justified by the record evidence.

125. There have been cases of water lines in South Dakota being penetrated by petroleum substances. TR 1169-1170; 1356-57. These cases, however, have involved PE pipe, which is highly vulnerable to damage and penetration by BTEX. PE pipe is rarely used for distribution lines but rather primarily for service lines to the home. TR 419, 421, 702, 718, 1169-1170; Ex TC 7R1, Attachment AWWA Study, pp. 14, 17.The Commission finds that because of PE pipe's vulnerability, Keystone should be responsible for replacement of PE pipe within 500 feet of the Project and that Condition 49 should be approved so requiring.

Alternative Routes

126. The proposed Project route was developed through an extensive, iterative process, involving the participation of multiple disciplines, and including the solicitation and incorporation of input from the public, as well as relevant state agencies. In addition, subsequent to the identification of an initial proposed route, agency discussions resulted in a number of further refinements to the route. These refinements include the 55-mile Hecla Sandhills reroute to avoid environmentally sensitive areas and reduce wetland crossings, a reroute in Day county to avoid impacts to native prairie easements, a reroute to minimize impacts to the habitat of the Raymond Prairie Chicken Leks and a reroute in the vicinity of the City of Yankton to accommodate future growth in the area. Ex TC 1, 4.0, pp. 20-24; Ex TC 3D, pp. 2-5. Linear facilities were also assessed that could serve as possible collocation opportunities, and the pipeline was collocated at a number of locations in the state where feasible. Ex TC 3D, pp. 5-6.

127. Keystone considered the use of the I-29 corridor at one point in the project development, but later rejected it on the basis that it was not the best route for the Keystone pipeline. Keystone did not consider locating the project within the I-29 corridor due to safety, highway maintenance and expansion impediment issues. Keystone also rejected the option of locating the pipeline adjacent to the I-29 right-of-way for a number of reasons. TR 133-139; Ex TC 5D, pp. 8-9.

128. SDCL 49-41B-36 explicitly states that Chapter 49-41B "shall not be construed as a delegation to the Public Utilities Commission of the authority to route a facility." The Commission accordingly finds and concludes that it lacks authority to compel the Applicant to select an alternative route or to base its decision on whether to grant or deny a permit for a proposed facility on whether the selected route is the route the Commission itself might select.

129. Intervenor WEB argued in its pre-filed testimony that a route along Interstate 29 in eastern South Dakota would be preferable to the route selected by Applicant. Ex WEB 7, pp. 23-24. The Commission finds that even if it had the authority to route the pipeline, the evidence in this record does not demonstrate that the I-29 route would be a preferable route to the Applicant's proposed route and would in fact be a significantly inferior route for a number of reasons, including the reasons stated by Keystone's witness Koski, the observations in the testimony of Derrick Iles and Kim McIntosh from DENR and WEB's own experts' concerning vulnerable groundwater in the Big Sioux Basin and remediation in populated versus unpopulated areas and the evidence concerning the enhanced risk of third party damage in connection with highway co-location.

130. WEB's witnesses Drs. Perry Rahn and Arden Davis suggested that the threat to the Middle James Aquifer could be alleviated by moving the pipeline route east to an area of clay soil which would act as a barrier between the pipeline and aquifers. TR 1058, 1079; Ex WEB 2, p. 3; Ex WEB 3; Ex WEB 5, p. 4. This alternate route is laid out on Exhibit WEB 3. Drs. Davis and Rahn admitted at the hearing that they had not conducted any analysis of any factors other than groundwater. The Commission finds that even if it had the authority to route the pipeline, the evidence in this record does not demonstrate that the Rahn alternative route would necessarily be a preferable route to the Applicant's proposed route. The multitude of factors that must be evaluated in making a routing decision have simply not been studied, and from even the very high level view available from Exhibits WEB 3, WEB 17, Intro. pp. 7-8, L. Anderson 10 and Sieh 1, certain factors such as relief off the Coteau, wetlands and lakes would appear to present issues requiring further study.

Socio-Economic Factors

131. Socio-economic evidence offered by both Keystone and Commission Staff demonstrates that the welfare of the citizens of South Dakota will not be impaired by the Project. The Project, subject to compliance with the Special Permit and the Conditions herein, would not, from a socioeconomic standpoint: (i) pose a threat of serious injury to the socioeconomic conditions in the project area; (ii) substantially impair the health, safety, or welfare of the inhabitants in the project area; or (iii) unduly interfere with the orderly development of the region. TR 1601; Ex Staff 5, 6, 13 and 14.

132. The Project will pay property taxes to local governments on an annual basis estimated to be in the millions of dollars. TR 41-42; Ex TC 14.

133. The Project will bring jobs, both temporary and permanent, to the state of South Dakota and specifically to the areas of construction and operation. TR 1601; Ex Staff 6.

134. The Project will have minimal effect in the areas of agriculture, commercial and industrial sectors, land values, housing, sewer and water, solid waste management, transportation, cultural and historical resources, health services, schools, recreation, public safety, noise, and visual impacts. TR 1601. It follows that the project will not substantially impair the health, safety, or welfare of the inhabitants.

General

135. Applicant has provided all information required by ARSD Chapter 20:10:22 and SDCL Chapter 49-41B.

136. The Commission finds that the Conditions attached hereto as Exhibit A and incorporated herein by reference are supported by the record, are reasonable and will help ensure that the Project will meet the standards established for approval of a construction permit for the Project set forth in SDCL 49-41B-22 and should be adopted.

137. The Commission finds that subject to the conditions of the Special Permit and the Conditions set forth as Exhibit A hereto, the Project will (i) comply with all applicable laws and rules; (ii) 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; (iii) not substantially impair the health, safety or welfare of the inhabitants; and (iv) 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.

138. The Commission finds that a permit to construct the Project should be granted subject to the Conditions set forth in Exhibit A.

139. To the extent that any Conclusion of Law set forth below is more appropriately a finding of fact, that Conclusion of Law is incorporated by reference as a Finding of Fact.

Based on the foregoing Findings of Fact, the Commission hereby makes the following:

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the subject matter and parties to this proceeding pursuant to SDCL Chapter 49-41B and ARSD Chapter 20:10:22. Subject to the findings made on the four elements of proof under SDCL 49-41B-22, the Commission has authority to grant, deny or grant upon reasonable terms, conditions or modifications, a permit for the construction, operation and maintenance of the TransCanada Keystone Pipeline.

2. The TransCanada Keystone Pipeline Project is a transmission facility as defined in SDCL 49-41B-2.1(3).

3. Applicant's permit application, as amended and supplemented through the proceedings in this matter, complies with the applicable requirements of SDCL Chapter 49-41B and ARSD Chapter 20:10:22.

4. The Project, if constructed in accordance with the terms and conditions of this decision, will comply with all applicable laws and rules, including all requirements of SDCL Chapter 49-41B and ARSD 20:10:22.

5. The Project, if constructed in accordance with the terms and conditions of this decision, will not pose an unacceptable threat of serious injury to the environment nor to the social and economic conditions of inhabitants or expected inhabitants in the siting area.

6. The Project, if constructed in accordance with the terms and conditions of this decision, will not substantially impair the health, safety or welfare of the inhabitants in the siting area.

7. The Project, if constructed in accordance with the terms and conditions of this decision, 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.

8. The standard of proof is by the preponderance of evidence. The Applicant has met its burden of proof pursuant to SDCL 49-41B-22 and is entitled to a permit as provided in SDCL 49-41B-25.

9. The Commission has authority to revoke or suspend any permit granted under the South Dakota Energy Facility Permit Act for failure to comply with the terms and conditions of the permit pursuant to SDCL 49-41B-33 and must approve any transfer of the permit granted by this Order pursuant to SDCL 49-41B-29.

10. To the extent that any of the Findings of Fact in this decision are determined to be conclusions of law or mixed findings of fact and conclusions of law, the same are incorporated herein by this reference as a Conclusion of Law as if set forth in full herein.

11. Because a federal EIS was required and has been completed for the Project and because the federal EIS complies with the requirements of SDCL Chapter 34A-9, the Commission appropriately exercised its discretion under SDCL 49-41B-21 in determining not to prepare or require the preparation of a second EIS.

12. PHMSA is delegated exclusive authority over the establishment and enforcement of safety-orientated design and operational standards for hazardous materials pipelines. 49 U.S.C. 60101, et seq.

13. The Commission concludes that distribution lines of public water supply systems do not fall within the definition of unusually sensitive or high consequence areas under 49 CFR 195.450 and 195.6 since water lines are not aquifers or surface water sources.

14. SDCL 49-41B-36 explicitly states that SDCL Chapter 49-41B "shall not be construed as a delegation to the Public Utilities Commission of the authority to route a facility." The Commission accordingly concludes that it lacks authority (i) to compel the Applicant to select an alternative route or (ii) to base its decision on whether to grant or deny a permit for a proposed facility on whether the selected route is the route the Commission might itself select.

15. The Commission concludes that it needs no other information to assess the impact of the proposed facility or to determine if Applicant or any Intervenor has met its burden of proof.

16. The Commission concludes that the Application and all required filings have been filed with the Commission in conformity with South Dakota law and that all procedural requirements under South Dakota law, including public hearing requirements, have been met or exceeded.

17. The Commission concludes that it possesses the authority under SDCL 49-41B-25 to impose conditions on the construction, operation and maintenance of the Project, that the Conditions set forth in Exhibit A are supported by the record, are reasonable and will help ensure that the Project will meet the standards established for approval of a construction permit for the Project set forth in SDCL 49-41B-22 and that the Conditions are hereby adopted.

It is therefore

ORDERED, that a permit to construct the Keystone Pipeline Project is granted to TransCanada Keystone Pipeline, LP, subject to the Conditions set forth in Exhibit A.

NOTICE OF ENTRY AND OF RIGHT TO APPEAL

PLEASE TAKE NOTICE that this Final Decision and Order was duly issued and entered on the 25th day of April, 2008. Pursuant to SDCL 1-26-32, this Final Decision and Order will take effect 10 days after the date of receipt or failure to accept delivery of the decision by the parties. Pursuant to ARSD 20:10:01:30.01, an application for a rehearing or reconsideration may be made by filing a written petition with the Commission within 30 days from the date of issuance of this Final Decision and Order; Notice of Entry. Pursuant to SDCL 1-26-31, the parties have the right to appeal this Final Decision and Order to the appropriate Circuit Court by serving notice of appeal of this decision to the circuit court within thirty (30) days after the date of service of this Notice of Decision.

Dated at Pierre, South Dakota, this 25th of April, 2008.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.

By: Delaine Kolbo

Date: 4/25/08

(OFFICIAL SEAL)

BY ORDER OF THE COMMISSION:

Gary Hanson

GARY HANSON, Chairman

Steve Kolbeck

STEVE KOLBECK, Commissioner

Dustin M. Johnson

DUSTIN M. JOHNSON, Commissioner

Exhibit A

PERMIT CONDITIONS

Compliance with Laws, Regulations, Permits, Standards and Commitments

1. Keystone shall comply with all applicable laws and regulations in its construction and operation of the Project. These laws and regulations include, but are not necessarily limited to: the federal Hazardous Liquid Pipeline Safety Act of 1979 and Pipeline Safety Improvement Act of 2002, as amended by the Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006, and the various other pipeline safety statutes currently codified at 49 U.S.C. § 60101 et seq. (collectively, the "PSA"); the regulations of the United States Department of Transportation implementing the PSA, particularly 49 C.F.R Parts 194 and 195; temporary permits for use of public water for construction, testing or drilling purposes, SDCL 46-5-40.1 and ARSD 74:02:01:32 through 74:02:01:34.02 and temporary discharges to waters of the state, SDCL 34A-2-36 and ARSD Chapters 74:52:01 through 74:52:11, specifically, ARSD § 74:52:02:46 and the General Permit issued thereunder covering temporary discharges of water from construction dewatering and hydrostatic testing.

2. Keystone shall obtain and shall thereafter comply with all applicable federal, state and local permits, including but not limited to: Presidential Permit from the United States Department of State, Executive Order 11423 of August 16, 1968 (33 Fed. Reg. 11741) and Executive Order 13337 of April 30, 2004 (69 Fed. Reg. 25229), for the construction, connection, operation, or maintenance, at the border of the United States, of facilities for the exportation or importation of petroleum, petroleum products, coal, or other fuels to or from a foreign country; Clean Water Act § 404 and Rivers and Harbors Act Section 10 Permits; Special Permit issued by the Pipeline and Hazardous Materials Safety Administration; Temporary Water Use Permit, General Permit for Temporary Discharges and federal, state and local highway and road encroachment permits. Any of such permits not previously filed with the Commission shall be filed with the Commission upon their issuance.

3. Keystone shall comply with and implement the Recommendations set forth in the Final Environmental Impact Statement issued by the United States Department of State on January 11, 2008.

4. The permit granted by this Order shall not be transferable without the approval of the Commission pursuant to SDCL 49-41B-29.

5. Keystone shall undertake and complete all of the actions that it and its affiliated entities committed to undertake and complete in its Application and in its testimony before the Commission at the hearing.

Reporting and Relationships

6. The most recent and accurate depiction of the Project route and facility locations is found in hearing Exhibits A and C, 2 Sept 06, to the Application, Ex TC 1A and 1C, as modified by the valve and pump station relocations described in Ex TC 1C, 5 March 07, Risk Assessment, "6 Overview Valve and Pump Station Relocation (Overview of the Valve and Pump Station Relocation Rationale March 2007)" and "7 Facility Relocation 070328 (Valve and Pump Station Relocation Rationale Keystone Pipeline Project March 22, 2007)" and the route variation maps introduced into evidence at the hearing. Ex TC 9 and TC 10. The testimony of Keystone's witness, Buster Gray, indicated that the land acquisition and precise route finalization process was on-going at the time of the hearing. Keystone shall notify the Commission and all affected landowners, utilities and local governmental units as soon as practicable if material deviations are proposed to the route. At such time as Keystone has finalized the pre-construction route, Keystone shall file maps with the Commission depicting the final pre-construction route. If material deviations from this route must be made during construction, Keystone shall advise the Commission and all affected landowners, utilities and local governmental units prior to making such changes and afford the Commission the opportunity to review and approve such modifications. At the conclusion of construction, Keystone shall file detail maps with the Commission depicting the final as-built location of the Project facilities.

7. Keystone shall provide a public liaison officer, approved by the Commission, to facilitate the exchange of information between Keystone, including its contractors, and landowners, local communities and residents and to promptly resolve complaints and problems that may develop for landowners, local communities and residents as a result of the Project. Keystone shall file with the Commission its proposed public liaison officer's credentials for approval by the Commission prior to the commencement of construction. The public liaison officer shall be afforded immediate access to Keystone's on-site project manager, its executive project manager and to contractors' on-site managers and shall be available at all times to the Commission's Staff via mobile phone to respond to complaints and concerns communicated to the Staff by concerned landowners and others. Keystone shall also implement and keep an up-dated web site covering the planning and implementation of construction and commencement of operations in this state as an informational medium for the public. As soon as the Keystone's public liaison officer has been appointed and approved, Keystone shall provide contact information for him/her to all landowners crossed by the Project and to law enforcement agencies and local governments in the vicinity of the Project. The public liaison officer's contact information shall be provided to landowners in each subsequent written communication with them.

8. Until construction of the Project is completed, Keystone shall submit quarterly progress reports to the Commission that summarize the status of land acquisition and route finalization, the status of construction, the status of environmental control activities, including permitting status and Emergency Response Plan and Integrity Management Plan development, the implementation of the other measures required by these conditions, and the overall percent of physical completion of the project and design changes of a substantive nature. Each report shall

include a summary of consultations with the South Dakota Department of Environment and Natural Resources and other agencies concerning the issuance of permits. The reports shall list dates, names, and the results of each contact and the company's progress implementing prescribed construction, land restoration, environmental protection, emergency response and integrity management regulations, plans and standards. The first report shall be due for the period ending June 30, 2008. The reports shall be filed within 31 days after the end of each quarterly period and shall continue until the project is fully operational.

9. Until construction of the Project is completed, Keystone's public liaison officer shall report quarterly to the Commission on the status of the Project from his/her independent vantage point. The report shall detail problems encountered and complaints received. For the period of three years following completion of construction, Keystone's public liaison officer shall report to the Commission annually regarding post-construction landowner and other complaints, the status of road repair and reconstruction and land and crop restoration and any problems or issues occurring during the course of the year.

10. As soon as practicable following the issuance of the permit, Keystone shall commence a program of contacts with state, county and municipal emergency response, law enforcement and highway, road and other infrastructure management agencies serving the Project area in order to educate such agencies concerning the planned construction schedule and the measures that such agencies should begin taking to prepare for construction impacts and the commencement of project operations.

11. Keystone shall conduct a preconstruction conference prior to the commencement of construction to ensure that Keystone fully understands the conditions set forth in this order. At a minimum, the conference shall include a Keystone representative, Keystone's construction supervisor and Commission staff.

12. Once known, Keystone shall inform the Commission of the date construction will commence, report to the Commission on the date construction is started and keep the Commission updated on construction activities as provided in Condition 7.

Construction

13. Except as otherwise provided in the conditions of this Order and Permit, Keystone shall comply with all mitigation measures set forth in the Construction Mitigation and Reclamation Plan (CMR) as set forth in Ex TC 1A as modified in the Final EIS Record of Decision.

14. Keystone shall incorporate environmental inspectors into its Construction Mitigation and Reclamation Plan and obtain follow-up information reports from such inspections upon the completion of each construction spread to help ensure compliance with this Order and Permit and all other applicable laws and rules.

15. During the course of the hearing, Keystone submitted TC 28, a Construction Agreement it executes with all affected landowners. The Construction Agreement includes a

landowner option regarding trenching and topsoil removal methods. Keystone shall provide landowners with an explanation regarding these options and shall follow the landowner's selected preference as documented on the Construction Agreement. At a minimum, however, Keystone shall separate topsoil from subsoil in agricultural areas, including shelter belts in agricultural areas and grasslands, as provided in Keystone's Construction Mitigation and Reclamation Plan. Keystone shall utilize slope breakers to prevent erosion at a 2 to 4 percent gradient rather than Keystone's proposed 2 to 8 percent gradient. Keystone's cleanup and reclamation efforts shall commence immediately following backfill operations. Except where practicably infeasible, final grading and topsoil replacement and installation of permanent erosion control structures shall be completed in non-residential areas within 20 days after backfilling the trench and within 10 days in residential areas. In the event seasonal or other weather conditions prevent compliance with the time frames, temporary erosion controls shall be maintained until conditions allow completion of cleanup and reclamation.

16. Keystone shall cover open-bodied dump trucks carrying sand or soil while on paved roads and cover open-bodied dump trucks carrying gravel or other materials having the potential to be expelled onto other vehicles or persons while on all public roads.

17. Herbicides or pesticides shall not be used in or within 100 feet of a water body except as allowed by the landowner and appropriate land management or state agency.

18. Rock excavation from the trench may be used to backfill the trench only to the top of the existing bedrock profile. All other rock shall be considered construction debris.

19. Mulch shall be applied on all slopes concurrent with or immediately after seeding where necessary to stabilize the soil surface and to reduce wind and water erosion. Keystone shall implement Staff's recommendations regarding liquid mulch binders and specifications for mulch use set forth in Staff Exhibit 7.

20. Erosion control matting fabric shall be installed on water body banks at the time of final bank re-contouring, unless riprap or other bank stabilization methods are employed in accordance with federal, state and local permits and approvals.

21. If trees are to be removed that have commercial or other value to affected landowners, Keystone shall compensate the landowner for the fair market value of the trees to be cleared and/or allow the landowner the right to retain ownership of the felled trees. The environmental inspection in Condition 14 shall include forested lands.

22. Unless a wetland is actively cultivated or rotated cropland or unless non-cohesive soil conditions require utilization of greater width, the width of the construction right-of-way shall be limited to 75 feet or less in standard wetlands.

23. Unless a wetland is actively cultivated or rotated cropland, extra work areas shall be located at least 50 feet away from wetland boundaries except where site-specific conditions render a 50-foot setback infeasible.

24. Vegetation clearing shall be limited between extra work areas and the edge of the wetland to the construction right-of way.

25. Wetland boundaries and buffers shall be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

26. Extra work areas near water bodies shall be located at least 50 feet from the water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land or where site-specific conditions render a 50-foot setback infeasible. Clearing of vegetation between extra work space areas and the water's edge shall be limited to the construction right-of-way.

27. In water body areas, work area boundaries and buffers shall be clearly marked in the field with signs and or highly visible flagging until construction-related ground disturbing activities are complete.

28. Spoil from minor and intermediate water body crossings and upland spoil from major waterway crossings shall be placed in the construction right of way at least 10 feet from the water's edge or in additional extra work areas, except that in-stream spoil from streams greater than 30 feet in width may be temporarily stored in-stream when stream flow conditions warrant such treatment.

29. Vegetation maintenance adjacent to water bodies shall be conducted in such manner to allow a riparian strip at least 25 feet wide as measured from the water body's mean high water mark to permanently re-vegetate with native plant species across the entire construction right-of way.

30. The width of the clear cuts through any windbreaks and shelterbelts shall be limited to 50 feet or less. The width of clear cuts through extended lengths of wooded areas shall be limited to 85 feet or less.

31. Keystone shall follow all of Staff's recommendations regarding road protection and bonding. Such recommendations include:

a) Keystone shall coordinate road closures with state and local governments and emergency responders.

b) Keystone shall implement a regular program of road maintenance and repair through the active construction period to keep paved and gravel roads in an acceptable condition for residents and the general public.

c) After construction, Keystone shall repair and restore any deterioration caused by construction traffic such that the roads are returned to at least their preconstruction condition.

d) Keystone shall use appropriate preventative measures as needed to prevent damage to paved roads and to remove excess soil or mud from such roadways.

e) Pursuant to SDCL 49-41B-38, Keystone shall obtain and file with the Commission a bond in the amount of $3 million in 2008 and $12 million in 2009 to ensure that any damage beyond normal wear to public roads, highways, bridges or other related facilities will be adequately compensated. Such bonds shall name the Commission as obligee in favor of, and for the benefit of, such townships, counties, or other governmental entities whose property is crossed by the Project. Each bond shall remain in effect until released by the Commission, which release shall not be unreasonably denied following completion of the construction and repair period. Either at the contact meetings required by Condition 10 or by mail, Keystone shall give notice of the existence and amount of these bonds to all counties, townships and other governmental entities whose property is crossed by the Project.

32. Due to the nature of residential property, Keystone shall implement the following protections in addition to those set forth in its Construction Mitigation and Reclamation Plan in areas where the Project passes within 500 feet of a residence:

a) To the extent feasible, Keystone shall coordinate construction work schedules with affected residential landowners prior to the start of construction in the area of the residences.

b) Keystone shall maintain access to all residences at all times, except for periods when it is infeasible to do so or except as otherwise agreed between Keystone and the occupant. Such periods shall be restricted to the minimum duration possible and shall be coordinated with affected residential landowners and occupants, to the extent possible.

c) Keystone shall install temporary safety fencing, when reasonably requested by the landowner or occupant, to control access and minimize hazards associated with an open trench and heavy equipment in a residential area.

d) Keystone shall notify affected residents in advance of any scheduled disruption of utilities and limit the duration of such disruption.

e) Keystone shall repair any damage to property that results from construction activities.

f) Keystone shall restore all areas disturbed by construction to at least their preconstruction condition.

33. Keystone shall coordinate project activities with the South Dakota State Fair Administration to make best use of fair resources for traditional users as well as construction workers.

34. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.

35. Reclamation and clean-up along the right-of-way must be continuous and coordinated with ongoing construction.

36. All pre-existing roads and lanes used during construction must be restored to a condition that will accommodate their previous use, and areas used as temporary roads during construction must be restored to their original condition, except as otherwise requested or agreed to by the landowner or any governmental authority having jurisdiction over such roadway.

37. Keystone shall, prior to any construction, file with the Commission a list identifying private and new access roads that will be used or required during construction and file a description of methods used by Keystone to reclaim those access roads.

38. In the event the winter season delays successful completion of de-compaction, topsoil replacement or seeding until the following spring, Keystone shall prepare and obtain a winterization plan. The Commission and affected landowners and/or governmental units shall be notified.

39. Keystone shall construct and operate the pipeline in the manner described in the application and at the hearing, including in Keystone's exhibits, and in accordance with the conditions of this permit, the PHMSA Special Permit and the conditions of this Order and the construction permit granted herein.

40. Keystone shall require compliance by its shippers with its crude oil specifications in order to minimize the potential for internal corrosion.

41. Keystone's obligation for reclamation and maintenance of the right-of-way shall continue throughout the life of the pipeline.

Pipeline Operations, Detection and Emergency Response

42. In accordance with 49 C.F.R. 195, Keystone shall continue to evaluate and perform assessment activities regarding high consequence areas. Prior to Keystone commencing operation, all unusually sensitive areas as defined by 49 CFR 195.6 that may exist, whether currently marked on DOT's HCA maps or not, should be identified and added to the Emergency Response Plan and Integrity Management Plan. In its continuing assessment and evaluation of environmentally sensitive and high consequence areas, Keystone shall seek out and consider local knowledge, including the knowledge of the South Dakota Geological Survey, the Department of Game Fish and Parks and local landowners and governmental officials.

43. The evidence in the record demonstrates that in some reaches of the Project in northern Marshall County, the Middle James Aquifer is present at or very near ground surface and is not overlain by sufficient impermeable material to isolate it from surficial infiltration of contaminants. The evidence also demonstrates that this aquifer serves as the water source for at least one significant public water supply system and several domestic farm wells. Keystone shall identify the Middle James Aquifer area in Marshall County as a hydrologically sensitive area in its Integrity Management and Emergency Response Plans, except in areas where Keystone can demonstrate that

the aquifer is overlain by sufficient unoxidized glacial till or other impermeable material to isolate it from infiltration of contaminants in the event of a release from the Project. Keystone shall similarly treat any other surficial aquifers of which it becomes aware during construction and continuing route evaluation.

44. Prior to putting the Keystone Pipeline into operation, Keystone shall prepare, file with PHMSA and implement an emergency response plan as required under 49 CFR 194 and a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies as required under 49 CFR 195.402. Keystone shall also prepare and implement a written integrity management program in the manner and at such time as required under 49 CFR 195.452. At such time as Keystone files its Emergency Response Plan and Integrity Management Plan with PHMSA or any other state or federal agency, it shall also file such documents with the Commission. The Commission's confidential filing rules found at ARSD 20:10:01:41 may be invoked by Keystone with respect to such filings to the same extent as with all other filings at the Commission. If information is filed as "confidential," any person desiring access to such materials or the Commission Staff or the Commission may invoke the procedures of ARSD 20:10:01:41 through 20:10:01:43 to determine whether such information is entitled to confidential treatment and what protective provisions are appropriate for limited release of information found to be entitled to confidential treatment.

45. To facilitate periodic pipeline leak surveys during operation of the facilities in wetland areas, a corridor centered on the pipeline and up to 15 feet wide shall be maintained in an herbaceous state. Trees within 15 feet of the pipeline greater than 15 feet in height may be selectively cut and removed from the permanent right-of-way.

46. To facilitate periodic pipeline leak surveys in riparian areas, a corridor centered on the pipeline and up to 10 feet wide shall be maintained in an herbaceous state.

47. At the hearing, Keystone's expert witness, Brian Thomas, testified that there do not currently exist any viable and cost effective remote sensing or monitoring systems that could either be installed along the pipeline, particularly at sensitive locations, or employed in aerial and/or ground surveillance activities to detect volatile organic compounds or other indicators of potential leaks. The Commission believes that such technologies, when available, could increase the effectiveness of visual surveillance and augment the SCADA system and mass balance and other leak detection methods that Keystone will employ. The Commission accordingly directs Keystone to keep abreast of the latest developments in such technologies and report to the Commission on the status of innovation in such pipeline leak detection equipment and methods on or before April 1, 2010, and at such additional times thereafter until 2019 as the Commission shall specifically request, but in no case more frequently than once every three years.

Environmental

48. Except to the extent waived by the owner or lessee in writing or to the extent the noise levels already exceed such standard, the noise levels associated with Keystone's pump station and other noise-producing facilities will not exceed the L10=55dbA standard at the nearest occupied,

existing residence, office, hotel/motel or non-industrial business not owned by Keystone. The point of measurement will be within 100 feet of the residence or business in the direction of the pump station facility. Post-construction operational noise assessments will be completed by an independent third-party noise consultant, approved by the Commission, to show compliance with the noise level at each pump station or other noise-producing facility. The noise assessments will be performed in accordance with applicable American National Standards Institute standards. The results of the assessments will be filed with the Commission. In the event the noise level exceeds the limits set forth in this condition at any pump station or other noise producing facility, Keystone shall promptly implement noise mitigation measures to bring the facility into compliance with the limits set forth in this condition and shall report to the Commission concerning the measures taken and the results of post-mitigation assessments demonstrating that the noise limits have been met.

49. At the request of any landowner or public water supply system that offers to provide the necessary access to Keystone over his/her property or easement(s) to perform the necessary work, Keystone shall replace at no cost to such landowner or public water supply system, any polyethylene water piping located within 500 feet of the Project. Keystone shall not be required to replace that portion of any piping that passes through or under a basement wall or other wall of a home or other structure. At least forty-five (45) days prior to commencing construction, Keystone shall publish a notice in at least one newspaper of general circulation in each county through which the Project will be constructed advising landowners and public water supply systems of this condition.

50. If during construction, Keystone or its agents discover what may be an archaeological resource, cultural resource, paleontological resource, historical resource or gravesite, Keystone or its agents shall immediately cease work at that portion of the site and notify the Commission and the State Historical Preservation Office. If the SHPO determines a protectable resource is present, Keystone shall develop a plan that is acceptable to the SHPO to salvage, avoid or protect the archaeological resource. If such a plan will require a different route than that approved by the Commission, Keystone shall obtain Commission approval for the new route before proceeding with any further construction.

51. Keystone shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species that Keystone becomes aware of and that were not previously reported to the Commission.

52. Keystone shall keep a record of drain tile system information throughout construction. Location information shall be collected using a sub-meter accuracy global positioning system where available or, where not available by accurately documenting the pipeline station numbers of each exposed drain tile. Keystone shall maintain the drain tile location information and tile specifications and incorporate it into its Emergency Response and Integrity Management Plans where drains might be expected to serve as contaminant conduits in the event of a release.

Liability for Damage

53. Keystone shall repair or replace all property removed or damaged during all phases of construction and operation of the proposed transmission facility, including but not limited to, all

fences, gates and irrigation or drainage systems. Keystone shall compensate the owners for damages or losses that cannot be fully remedied by repair or replacement, such as lost productivity and crop and livestock losses.

54. In the event that a person's well is contaminated as a result of the pipeline operation, Keystone shall pay all costs associated with finding and providing a permanent water supply that is at least of similar quality and quantity; and any other related damages including but not limited to any consequences, medical or otherwise, related to water contamination.

55. Any damage that occurs as a result of soil disturbance on a persons' property shall be paid for by Keystone.

56. No person will be held responsible for a pipeline leak that occurs as a result of his/her normal farming practices over the top of or near the pipeline.

57. Keystone shall pay commercially reasonable costs and indemnify and hold the landowner harmless for any loss, damage, claim or action resulting from Keystone's use of the easement, except to the extent such loss, damage claim or action results from the gross negligence or willful misconduct of the landowner or its agents.

Exhibit B

RULINGS ON PROPOSED FINDINGS OF FACT

Rulings on Applicants' Proposed Findings of Fact

As Applicant is the prevailing party, many of Applicant's Proposed Findings of Fact have been accepted in their general substance and incorporated in the Findings of Fact, with additions and modifications to reflect the Commission's understanding of the record and to add citations to the record.

Rulings on Intervenor WEB's Proposed Findings of Fact

Proposed Findings 1-11 - Accepted.

Proposed Finding 12 - Accepted in substance. See Findings 54-64 and 116-125 and Condition 43.

Proposed Findings 13-15 - Not accepted.

Proposed Findings 16-20 - Accepted.

Proposed Finding 21 - Generally accepted. See Finding 57.

Proposed Finding 22 - Accepted.

Proposed Finding 23 - Not accepted. See Findings 54-64.

Proposed Findings 24-25 - Accepted.

Proposed Finding 26 - Not accepted.

Proposed Findings 27-34 – Not accepted. The Commission's findings concerning shallow groundwater in Marshall County and the potential for shallow groundwater in other locations are set forth in Findings 50-64. See also Condition 43.

Proposed Findings 35-36 – Not accepted. See Findings 51 and 53 and Condition 43.

Proposed Findings 37-38 – Not accepted.

Proposed Findings 39-40 – Accepted.

Proposed Finding 41 – Not accepted.

Proposed Finding 42 – Accepted.

Proposed Finding 43 – Generally accepted. Except for Findings 36 and 45 dealing with relief and depth in channel areas, no specific findings were included on seismic or washout events, which were not shown by the evidence to be of material concern. See Ex TC 4D, p. 6.

Proposed Finding 44 – Accepted.

Proposed Finding 45 – Not accepted. No specific finding on causes of abnormal conditions was included. Keystone's procedures for dealing with abnormal conditions are addressed in Findings 106-115 and Condition 44.

Proposed Finding 46 – Accepted.

Proposed Findings 47-48 – Not accepted. Findings 101-105 address leak detection measures.

Proposed Finding 49 – Not accepted. Finding 105 addresses aerial surveillance including detection of slow leaks. See also Condition 47.

Proposed Findings 50-55 – Not accepted. Findings 101-105 address leak detection and response measures. In Finding 46, the Commission finds that large releases are possible. In Finding 104, the Commission acknowledges Mr. Thomas's testimony concerning methods for detecting leaks of less than 1.5 percent of flow rate.

Proposed Finding 56 – Accepted.

Proposed Finding 57 – Not accepted.

Proposed Finding 58 – Not accepted. The Commission believes this Proposed Finding mischaracterizes Ms. Kothari's testimony.

Proposed Findings 59-60 – Accepted.

Proposed Findings 61-70 – Not accepted.

Proposed Findings 71-81 – Not accepted specifically. Emergency response and the emergency response plan are addressed in Findings 106-114 and Conditions 44 and 10.

Proposed Findings 82-83 – Not accepted. Keystone's SCADA system is addressed in Findings 102-104.

Proposed Finding 84 – Not accepted.

Proposed Findings 85-90 – Not specifically accepted. Findings 71-81 address the Special Permit and pipe design and quality control and generally include the substance of these Proposed Findings.

Proposed Finding 91 – Accepted.

Proposed Finding 92 – Not accepted. The risk to gaskets and PVC and PE pipe is addressed in Findings 118-125 and Condition 49.

Proposed Finding 93 – Accepted.

Proposed Finding 94 – Not accepted. The Commission does not believe this Proposed Finding is supported by the preponderance of evidence. Also See Exhibit TC 19.

Proposed Finding 95 – Not accepted. See Exhibit TC19.

Proposed Finding 96 – Accepted with respect to WEB and BDM.

Proposed Finding 97 – Not accepted.

Proposed Findings 98-100 – Accepted.

Proposed Finding101-103 – Not accepted.

Proposed Finding 104 – Not accepted. See Finding 117. The Commission did not use the phrase "senior right" in its finding because the witness disclaimed any legal basis or intent for his statement.

Proposed Findings 105-106 – Accepted.

Proposed Findings 107-109 – Not accepted. Rural water crossings are addressed in Findings 116-125.

Proposed Findings 110-112 – Not accepted.

Proposed Finding 113 – Accepted.

Proposed Findings 114-115 – Not accepted.

Proposed Findings 116-136 – Not specifically accepted. The substance of these Proposed Findings which deal with Staff's experts' recommendations is addressed in several Findings, e.g. 96-98 and 110, and most of these recommendations were included in the Conditions.

Proposed Findings 137-140 – Not accepted. The Commission's general finding on taxes is found in Finding 132.

Proposed Finding 141 – Not accepted. The Commission addresses Keystone's responsibility and liability in several Findings including 88 and 114 and in Conditions 53-57.