Appendix A

Scoping Summary Report and Response to Draft EIS Comments Report

U.S. Department of State
Scoping Summary
for the
Keystone Pipeline Project
Environmental Impact Statement

December 2006

1.0 INTRODUCTION

TransCanada Keystone Pipeline, L.P. has applied to the United States Department of State (DOS) for a Presidential Permit at the border of the United States for the proposed construction, connection, operation, and maintenance, of facilities for the importation of crude oil from Canada. DOS determined that the issuance of the Presidential Permit would constitute a major federal action that may have a significant impact upon the environment within the context of the National Environmental Policy Act of 1969 (NEPA), and on October 4, 2006 issued a Notice of Intent (NOI) to prepare an environmental impact statement (EIS) to address reasonably foreseeable impacts from the proposed action and alternatives.

The NOI informed the public about the proposed action, announced plans for scoping meetings, invited public participation in the scoping process, and solicited public comments for consideration in establishing the scope and content of the EIS. The NOI was published in the Federal Register and distributed to:

- Landowners along the proposed route,
- Federal, state, and local agencies,
- Municipalities and counties,
- Native American Tribes,
- Elected officials,
- Non-governmental organizations;
- Media, and
- Interested individuals.

The scoping period extended from the date of publication of the NOI in the Federal Register through November 30, 2006.

2.0 SCOPING MEETINGS

DOS held 13 separate scoping meetings in the vicinity of the proposed route to give the public the opportunity to provide comments regarding the scope of the EIS. The dates and locations of the meetings are listed below, along with the attendance at each meeting (in parentheses).

October 24 – Michigan, North Dakota (55)
October 25 – Lisbon, North Dakota (34)
October 26 – Clark, South Dakota (18)
October 24 – Yankton, South Dakota (36)
October 25 – Stanton, Nebraska (36)
October 26 – Seward, Nebraska (35)
November 1 – St. Charles, Missouri (32)
November 2 – Collinsville, Illinois (24)
November 8 – Carrolton Missouri (23)
November 9 – Seneca, Kansas (20)

November 14 – Abilene, Kansas (38)
November 15 – El Dorado, Kansas (34)
November 16 – Morrison, Oklahoma (31)

3.0 SCOPING COMMENTS

The verbal scoping comments and comment forms received during, or shortly after, the scoping meetings are summarized below. Other public and agency comment letters received by DOS are described in Section 3.2 of this report.

3.1 Comments Received at Scoping Meetings

DOS received a wide variety of comments at the scoping meetings, including concerns that were not related to environmental issues. All verbal comments formally presented at the meetings were recorded and transcribed. Additional written comments were received on comment forms provided to the public at the meetings. Comments that addressed environmental concerns are listed below under the major headings for the EIS. Comments have been summarized as appropriate, particularly for concerns that were raised by several commentors.

Purpose and Need

1. Provide information on the distances between the proposed pipeline alignment and pipelines that will be paralleled by the proposed route.
2. Provide information on the need for the pipeline, and address whether or not the planned Kinder Morgan expansion and the Enbridge pipeline would meet the needs that Keystone plans to meet with this project.
3. Discuss why it is important to bring a crude oil pipeline extension to Cushing, Oklahoma instead of building a refinery further north for oil to be shipped to the east coast.
4. Describe how the project could affect efforts to expand the use of renewable energy resources (such as ethanol and biodiesel).
5. Indicate what other agencies, municipalities, and counties would be involved in reviewing and approving the project, including specific permits, reviews, approvals, and variances required.
6. Indicate how long the oil supply for the pipeline is projected to last at the throughput volumes planned for the project.

Project Description

1. Describe the anticipated method – or optional methods – that would be used to abandon and remove the pipeline.
2. Describe the methods that would be used to cross under or over other pipelines and other utility lines.
3. Indicate whether or not pipe to be used for the project would be purchased from U.S. firms.
4. Provide a schedule for construction, including the estimated duration per pipeline mile, the duration of construction per pipeline spread, and duration of construction per day.
5. Describe horizontal direction drilling techniques and state the depth beneath the river bed that would be drilled.
6. Describe the maintenance procedures that would be used to ensure pipeline reliability during operation.
7. How long will the pipeline be in use and maintained?
8. Indicate whether or not heating units would be installed along the system.

9. Describe the regulatory restrictions regarding proximity to residences and other buildings, including historical buildings and sites.
10. Indicate what will be done with trees that are removed from the right-of-way.
11. Indicate what the temperature of the oil will be in the pipeline.
12. Describe any special protection measures that may be used in high-risk areas.
13. Provide information on the burial depth of the pipeline along all portions of the alignment.
14. If the pipeline is shut down for a period of time with crude oil in the line, describe the procedures that would be implemented to return the line to service.
15. Discuss construction techniques and depth of burial of pipeline in solid rock areas. Include potential to move the pipeline out of these areas.
16. Describe what would happen to farm fences during construction.
17. Discuss the potential to change the product shipped through the pipeline at a later date.
18. How will electricity be supplied to the pump stations?
19. Describe what maintenance and inspection activities are required by regulations and what specific activities Keystone will conduct as a part of maintenance and inspection; including the schedule for those activities.
20. Describe how maintenance activities would continue should the pipeline be sold.
21. Describe how the ROW will be protected from trespassers, off-road vehicles, vandals, and potshotters.
22. Use "cascading" water for hydrotesting. Address potential cross-watershed ecotoxicology concerns for testwater disposal. Consider using two inflatable pigs and test in between.
23. Describe locations of pump stations and pig removal point.

Environmental Consequences

Soils & Geology

1. Address the potential for soils settling in the permanent right-of-way during the life of the project.
2. Address the potential for soils settling along the route after abandonment of the project based on the anticipated abandonment procedures that would be used.
3. Evaluate the impact of soil compaction due to the use of heavy construction equipment and how the soils could be returned to their original structure.
4. Describe the methods to be used to separate topsoil from subsoil during excavation of the trench and the sequence of events to be followed during burial of the installed pipeline.
5. Demonstrate how the identity of the topsoil will be preserved and how it will be returned to the correct place.
6. Address the issue of restoring the right-of-way land to its previous state. Address the removal of boulders and other debris and proper disposal of the debris. Describe the size of stones that would be left behind.
7. Address the potential for erosion along the route, particularly in hilly areas.
8. Describe the methods to be used to stabilize stream banks and address the associated potential for erosion.
9. Address impacts and mitigation for wind erosion, especially if wind and shelter breaks are removed or disturbed.
10. Address the potential effects of the temperature of the pipeline on the surrounding soils, including effects on soil freezing and drying.
11. Address the potential for rock slope instability at or near crossing of Whitewater River in Kansas.

12. Address fault lines in Kansas and construction methods in areas subject to earthquake.

Groundwater

1. Evaluate the impacts of construction, normal operation, and upset conditions on springs and on groundwater wells used for drinking water.
2. Describe what procedures would be put in place to provide drinking water if groundwater is polluted due to a spill, including long-term procedures in the event that cleanup after a spill does not return groundwater to drinking water quality.
3. Address the potential for impacts to the West Oaks aquifer in North Dakota.
4. Address the potential for impacts to the aquifer in the vicinity of Carpenter, South Dakota.
5. Address the potential for impacts to the Oglala aquifer (near Seward County, Nebraska).
6. Evaluate the potential for impacts to the Fordville aquifer (in the vicinity of the Michigan, North Dakota).
7. Consider impacts to the Sand Lake aquifer in Dickie County, North Dakota. Consider a reroute further to the east of the current proposal.
8. Address impacts to septic systems.

Surface Water

1. Address the potential for erosion in creek beds during and after pipeline construction.
2. Consider whether or not there would be an effect on the dike near Seward, Nebraska as a result of installation of the pipeline. Floods are common in the area and altering the ground near the dike could impact its integrity. Consult with the Corps of Engineers on the issue.
3. Evaluate the potential impact of the project on reservoirs and in particular on the Matajeck Dam (in the vicinity of Lankin, North Dakota) and the Milford Reservoir in Kansas.
4. Evaluate the effects of leaks and construction on Sooner Lake Reservoir in Oklahoma.
5. Evaluate the impacts of construction, normal operation, and upset conditions on farm ponds.
6. Evaluate the effects of spills on surface impoundments used for domestic water, and also the effects of runoff during construction.
7. Address impacts in sewage treatment plants (in particular the Towanda Treatment Facility in Kansas) and individual septic systems.
8. Evaluate the effects on drain tiles and the potential for drained farmland to become inundated. Describe how drainage systems will be reconstructed.

Wetlands and Vegetation

1. Evaluate the impact on native prairie and other areas of native vegetation that the route might cross. Assess impacts on areas that are burned each year to ensure proper growth.
2. Evaluate the impacts of the project on wetlands and describe the mitigation procedures that would be implemented to offset impacts.
3. Evaluate the impacts of the project on woodland areas.
4. Indicate what regulations would require stream bank stabilization during and immediately after construction, as well as what regulations would require that Keystone repair stream bank stabilization structures that become damaged.
5. How will the temperature of the pipeline impact vegetation and crops in the right-of-way?

6. Evaluate whether or not the burial depth of the pipeline is sufficient to avoid problems with the roots of crops such as alfalfa and corn.
7. Discuss revegetation of the pastures and farm grounds. Include discussion of how the revegetated areas would be monitored to ensure that the vegetation becomes properly established.
8. Discuss potential for invasive and noxious weeds infestations and potential for outbreaks in future years.
9. Discuss the impacts of trenching on regrowth, particularly during drought periods.

Fish and Wildlife

1. Describe the impact of the project on game animals, such as deer and turkey, and on their woodland habitats.
2. Address impacts on bull frogs and toads.
3. Address disturbance impacts on bald eagles in Oklahoma.

Land Use, Recreation, and Visual Resources

1. Address the issue of eminent domain and how it may or may not apply to this project.
2. Evaluate the impact of restrictions on land-use over and near the pipeline, such as restrictions on constructing new buildings.
3. Address the potential impacts to bicycle trails in Madison County (South Dakota).
4. Evaluate the impacts of the project on daycare centers along the route in Missouri.
5. Evaluate the impact on special use areas (such as walnut tree groves in the Seward Nebraska area and a nursery in Sargeant County, North Dakota).
6. Evaluate the impact of soil compaction on farmland due to the use of heavy construction equipment.
7. Evaluate the impact of the proposed construction methods and schedule on agricultural activities, particularly in areas where center pivot irrigation is used, and the duration of time that it would not be possible to conduct agricultural activities during construction.
8. Evaluate the impacts of construction on agricultural uses, including impacts on surface and subsurface drainage, ponds, waterlines, and drainage ditches.
9. Evaluate the impact of the project on CRP program lands.
10. Address the potential for farmers to have difficult access to farmland during construction, particularly in areas with extensive amounts of wetlands surrounding the farmland.
11. Evaluate whether or not wetland impacts that occur during project construction would have an effect on farmers who are currently eligible for federal payments associated with protection of wetlands on farmland (USDA Farm Service Agency).
12. Evaluate the impact of the project on landowners with CRP lands.
13. What compensation would Keystone provide for impacts to crop production along the construction right-of-way?
14. How will cattle be protected during construction?

Cultural Resources

1. Address impacts on cemeteries (Native and non-Native) and historic burial grounds.

2. Address the impact of the project on archaeological sites (including ancient Indian campgrounds in the Cahokia Creek area, and artifacts and possible burial grounds in the Michigan, North Dakota area).
3. Address the potential impacts of the project related to cultural sites in northeast North Dakota, including those relevant to the Turtle Mountain band of Chippewa Indians.
4. Address the impacts on Native American graves in Oklahoma, and in particular on a cemetery for the Ponca Indians.
5. Ensure that grave site locations are not published in the EIS because to do so will invite grave robbers.
6. Address impacts of blasting and pipeline vibration on historic structures, particularly those constructed of limestone blocks.

Socioeconomics

1. Address the issue of perpetual easements versus annual rental fees.
2. Address the issue of the potential decrease in property value and impacts on planned development.
3. Describe the influence of the project on the U.S. trade deficit.
4. Evaluate the economic impact on special use areas (such as walnut tree groves in the Seward, Nebraska area, and a nursery in Sargeant County, North Dakota).
5. Indicate what the project-related tax revenues would be to the municipalities and counties along the pipeline route associated with construction and during operation for the life of the project.
6. Indicate whether or not the project-related tax revenues would offset costs to the principalities and counties along the route (such as the cost of road repairs due to damage caused by construction traffic).
7. Will electricity costs rise due to the need for additional power at the pump stations?
8. Discuss potential financial losses associated with destruction of grasslands.

Transportation and Traffic

1. Address the impacts associated with use of county and private roadways during construction, including how Keystone would restore or provide compensation for, or repair of the roadways.
2. Describe the methods that would be used to cross roadways, including the extent and duration of road closures associated with construction across roadways, and the impacts associated with each construction method.
3. Describe how access to ROW will happen.

Air Quality, Noise and Vibration

1. Address potential impacts of noise from pump stations to both human receptors and cattle.
2. Address air pollution abatement for pump stations.
3. Address potential for oil moving through the pipeline to cause vibration that would then impact nearby houses.
4. Address impacts of rock blasting and dynamiting during construction in rocky areas.

Reliability and Safety

1. Describe what procedures would be put in place to protect the pipeline from terrorist activities or vandalism. Delineate the parties responsible for pipeline safety.
2. Address the issue of unauthorized access to or use of the pipeline right-of-way.
3. Address the potential safety issues associated with crossing under or over other pipelines.
4. Describe how spills that reach rivers will be contained or cleaned up (such as the Red, Grand Forks, and Fargo Rivers), and indicate the anticipated likely extent of contamination (in terms of miles downstream of the spill site).
5. Provide information on cleanup methods that would be used in sub-zero temperatures.
6. Indicate what entity would be responsible for cleanup after a spill.
7. Describe how a release from the pipeline would be detected when there is snow cover throughout the area of the release.
8. Address the potential for deep frost to affect pipeline integrity.
9. Indicate whether or not Keystone would provide landowners with a written commitment to compensate them for releases that would affect the value of the land.
10. Provide information on the anticipated number of leaks per year.
11. Describe all pipeline safety requirements that Keystone would be required to comply with and any additional safety features that would be included in the project.
12. Provide information on environmental problems that have been documented for other pipelines in the area.
13. Describe TransCanada's safety record.

Alternatives

1. Describe how the alternatives were determined and screened.
2. Consider crossing property along routes such as quarterlines that would avoid cutting the land up so much that it would be difficult to work on.
3. In the Clark, South Dakota area, address the possibility of using the abandoned railway line as an alternative route.
4. Describe why an earlier route in Marshall County (North Dakota) was revised to move the pipeline closer to or over the West Oaks aquifer.
5. Describe why an earlier version of the pipeline route was moved in response to concerns raised by the U.S. Fish and Wildlife Service (in North or South Dakota).
6. Evaluate route alternatives or variations that would avoid crossing bicycle trails, particularly in Madison County (South Dakota).
7. Evaluate route alternatives or variations that would minimize the loss of trees and woodland areas.
8. Evaluate route alternatives that would avoid crossing over the Oglala aquifer (near Seward County, Nebraska).
9. Evaluate route alternatives that would avoid the flood plain west of Seward, Nebraska.
10. Include the planned Kinder Morgan pipeline expansion and the Enbridge pipeline in the consideration of systems alternatives.
11. Evaluate the alternative of expanding refining capacity in Canada, refining the oil from the source planned for shipment in the Keystone pipeline, and shipping petroleum products to the US instead of crude oil.
12. Evaluate the use of renewable energy sources to meet the market demands that the energy derived from the Keystone project would meet.
13. Evaluate the alternative of avoiding construction through agricultural areas in the spring and summer.

14. Consider alternative routes that are adjacent to or within existing interstate highway rights of way.
15. Consider alternative routes or route variations that would avoid sensitive areas such as cemeteries (for example, the Schickle Cemetery in the vicinity of Lisbon in North Dakota).
16. Consider alternative routes that would avoid potential impacts to the Sand Lake aquifer in Dickie County, North Dakota.
17. Discuss the feasibility of using existing rights-of-way, especially for the Cushing Extension.

Cumulative Impacts

1. Address impacts when combined with the Rockies Express pipeline.
2. Address past and present effects of the Platt Pipeline in conjunction with the proposed Keystone and other pipelines.
3. Consider the cumulative effects of the Stillwater pipeline in Oklahoma (domestic water) in conjunction with the proposed project.
4. Consider impacts in conjunction with other linear projects such as railroads and interstate highways.
5. Discuss the potential for developing another pipeline within the right-of-way for Keystone.

3.2 Comment Letters Received by DOS

DOS received additional written scoping comments from several agencies, individuals and organizations and are summarized below.

3.2.1 Agency Comment Letters

The DOS has received the following letters from state and/or federal agencies:

- State Historical Society of North Dakota, August 23, 2006 – "…we concur with the level and scope of identification efforts proposed for cultural resources in the TransCanada Keystone project area."

- United Keetoowah Band of Cherokee Indians in Oklahoma, August 21, 2006 – "We accept your invitation to become a consulting party in the matter with a government-to-government relationship."

- Sac and Fox Nation of Missouri in Kansas and Nebraska, September 28, 2006 – "No objections. However, if human skeletal remains and/or any objects falling under NAGPRA are uncovered during construction, please stop immediately and notify the NAGPRA representative….."

- Advisory Council on Historic Preservation (ACHP), Oct. 5, 2006 - "…the ACHP will enter consultation at this time to ensure that the purposes of Section 106 are met."

- Department of the Army, Corps of Engineers, Omaha District, October 26, 2006 – *Flood plains* – construction should not be located in the 100-yr flood plain. If this is not practicable, construction must be flood proofed. All construction should be designed to

minimize potential harm to or within the flood plain. "The goal of any construction in the flood plain is to achieve the highest level of flood protection with zero impact to adjacent property." Construction must follow Executive Order (EO) 11988. The project will encounter numerous counties/communities which participate in the National Flood Insurance Program. Construction in these areas must be compliant with state, county and/or local flood plain ordinances.
Groundwater – Your plans should be coordinated with the U.S. Environmental Protection agency, which is currently involved in a program to protect ground water resources.
Fish and Wildlife – If not already done, it is recommended you consult with the U.S. Fish and Wildlife Service, the South Dakota Game, Fish, and Parks Department, and the Nebraska Game and Parks Commission.
Cultural Resources – The South Dakota and Nebraska State Historic Preservation Offices should be contacted for information and recommendations.
Section 404 – If any construction activities involve any work in water of the United States, a Section 404 permit may be required. Preliminary and final project plans should be sent to both the Pierre Regulatory Office and the Wehrspann Regulatory Office.

- U.S. Environmental Protection Agency, Region 8, November 30, 2006 – "Region 8 is the lead region for the EPA on this project." "Our primary concerns are with any potential wetlands and water quality impacts, the control of noxious weeds and invasive plants, and impacts relation to Environmental Justice concerns." We offer specific mitigation recommendations (attached) for the following ten areas: 1)Protecting wetlands and riparian areas and associated ecosystems, 2) Mitigation of wetlands, river, stream, lake and riparian impact areas, 3) Protecting ground and surface water quality, 4) Protection of air quality, 5) Road and construction issues, 6) Environmental Analysis findings from Canada, 7) Noxious weeds and invasive plants, 8) Effects on vegetation, wildlife habitats, and area hunting /fishing, 9) Cumulative Impacts, and 10) Potential project effects on local communities, and reasonably foreseeable development considerations.

3.2.2 Public Comment Letters

In addition to verbal comments and comment forms (summarized in Section 3.1), public comment letters have been received from individual landowners and other concerned parties. The letters incorporate many of the comments and questions outlined above in Section 3.1. Additional topics not covered are summarized below:

Environmental Consequences

Soils

1. Discuss impacts on land within St. Charles County; soil instabilities created by the pipeline would have economic effects on farming in the county for 3-5 years.

Fish and Wildlife

1. Discuss impacts on pheasants and beaver in addition to quail and turkey.

Vegetation

1. Discuss the protection of old growth native timber especially in the vicinity of Lincoln Creek in Nebraska.

2. Address concerns related to maintain "chemically free" status as an organic farm.

Surface Waters and Flooding

1. Discuss impacts on flood protection such as dikes and the use of terracing especially in the area of Seward Nebraska. Farmland in the impacted areas would be more prone to aggressive flooding and erosion.

Groundwater

1. Address impacts to the Lone Bear Aquifer in North Dakota.

Other Issues

1. Address issues related to emotional stress of landowners in the right-of-way.

2. Senator John O. Jones 54th Legislative District, Illinois, wrote in support of the Keystone pipeline project on October 25, 2006.

3. On November 28, 2006, Curt Holm, WEB Water Development Association General Manager in North Dakota, wrote with several concerns regarding the impacts of the Keystone Pipeline on the rural water system and the rural community served by WEB. The concerns include that in the event of a spill or leak, the PVC waterlines could be breached and the water supply contaminated. The letter suggests that the oil pipeline be encased in a second steel pipe for 300 ft on either side of the water line were crossed. The letter also states that the EIS should address the emergency response measures in the event of a leak or spill. WEB recommends that emergency response personnel be stationed at intervals of not less than 70 to 90 miles. The EIS should also address the effects of a spill or leak on the James River basin. Before a permit is issued a sample of the crude oils should be taken and analyzed to determine potential impacts on PVC pipe, soils, water, air quality and the environment. Other issues discussed in the letter include giving sufficient prior notice for construction commencement (2-3 weeks), creating a dispute resolution process, requiring that all road crossings be bored rather than open cut, and providing a toll-free hot line for project concerns and complaints.

FINAL COMMENT RESPONSE REPORT

December 27, 2007

Introduction

The Role of Public Comment

The National Environmental Policy Act (NEPA) is intended to facilitate improved government decisions relative to the environmental effects of proposed developments. NEPA does not dictate protection of the environment, but instead assumes that common sense and good judgment will result in the development of the nation's resources in a way that minimizes adverse impacts to our environment. This is achieved by requiring an open, public process whereby the responsible government agency, combined with the stakeholders associated with a proposed development project, all pull together relevant information for use in making decisions.

Solicitation of public and agency comments on the Keystone Pipeline Project EIS is required under NEPA. The DOS as the lead agency must assess and consider the resulting public comments both individually and collectively. During the formal comment period, agencies and the public reviewed and commented on the draft Environmental Impact Statement.

The Public and Agency Comment Period and Receipt of Comments

The 2007 Keystone Oil Pipeline Project Draft Environmental Impact Statement (DEIS) was released for public review on August 10, 2007. The DEIS considered the potential impacts associated with construction and operation of a crude oil pipeline and related facilities to transport Western Canadian Sedimentary Basin (WCSB) crude oil from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwest United States. TransCanada Keystone Pipeline, L.P. (Keystone) has applied to the U.S. Department of State (DOS) for a Presidential Permit that would allow the proposed pipeline to cross the international border between Canada and the United States. Permission to allow the pipeline to cross the international border would facilitate the construction and operation of the proposed pipeline in seven states. For that reason, under NEPA, the DOS must assess the environmental impacts of the connected actions that would occur as a result of the permit issuance, and the Application and nine subsequent additional filings provide information on the proposed action, the environmental setting, and potential environmental effects for the entire proposed pipeline and associated facilities in the United States. In total, the Keystone Project would consist of the Mainline Project (approximately 1,849 miles of pipeline, including about 767 miles in Canada and 1,082 miles in the United States) and the Cushing Extension (296 miles of pipeline in the United States). Including the Cushing Extension, the total length of pipeline in the United States would be about 1,378 miles.

The public comment period ended on September 24, 2007. However, additional comments were accepted into November 2007. Comments were sent to DOS by email, website link (e-comments), phone, and US Mail. From September 4 through September 20, 2007, thirteen public meetings were held to solicit oral testimony on the DEIS. Written comments were also accepted. These meetings were held at the following locations along the pipeline corridor and corresponded with the locations of the scoping meetings held in October 2006:

- September 4 - Carrolton Missouri
- September 5 - St. Charles, Missouri
- September 6 - Collinsville, Illinois
- September 11 - Michigan, North Dakota and Yankton, South Dakota
- September 12 - Lisbon, North Dakota and Stanton, Nebraska
- September 13 - Clark, South Dakota and Seward, Nebraska
- September 17 - Seneca, Kansas
- September 18 - Abilene, Kansas
- September 19 - El Dorado, Kansas
- September 20 – Ponca City, Oklahoma.

In total, 67 people provided oral testimony at these meetings, incorporating 230 individual comments on the 2007 DEIS. These comments were recorded and transcribed, and are summarized in Table 1 of this report. In addition to the oral testimony, 110 letters, cards, emails, e-comments, or telephone conversation records incorporating 1009 comments (henceforth referred to as "letters") were received from the public, agencies, the Applicant (Keystone), and other interested groups and stakeholders. All written comments are summarized on Table 2.

What is the "Response to Comments"?

NEPA requires that all substantive comments received on the DEIS be reported and responded to in the Final EIS (FEIS). The law does allow for summary tables and a summary report of the comments to be provided in lieu of reproducing each individual letter or transcript with each copy of the FEIS. However, the FEIS must incorporate all changes to the DEIS that are made as a result of the comments, and the summary should provide an indication of where the specific changes were made in the document. The official public meeting transcripts and all written comment letters, emails, e-comments etc., are also available in their entirety as part of the Administrative Record.

Analysis of and Response to Comments on the DEIS

All letters, emails, comment forms, transcripts of public hearings and electronically received submissions on the 2007 DEIS were read and given unique identifications referred to as "Letter Number or Transcript Number" (ranging from 1 to 110 for letters and 1 to 13 from transcripts). Written and oral public and agency comment letters and

transcripts were reviewed and entered into a spreadsheet developed for this project and used to create Tables 1 and 2. The letters and transcripts were reviewed by DOS and each individual comment within each submission or testimony was identified and given a unique Comment Number as shown on the tables.

From the 110 letters and 13 transcripts, these unique comments were entered into the spreadsheet for tracking and response. Each comment was assigned an issue code that captured the essence of the comment and allowed for ease of sorting and responding. A total of 74 separate issue codes were created and are defined on Table 3; these codes correspond to the three letter issue codes shown on Tables 1 and 2. During coding, analyzing and responding, all comments were treated equally. They were not weighted by agency, organizational affiliation, or number of similar comments received. The emphasis is on the content of the comments. No effort has been made to tabulate the number of people for or against a specific aspect of the project.

Tables 1 and 2 also provide a response for each individual comment. The responses reflect whether the DEIS text has been changed, and if so, indicate the appropriate section of the document that is changed in the FEIS based on the comment. In some cases, the comment is acknowledged but the text is not changed. This category of comments includes subject matter determined not to be substantive. For example, some commenters expressed their wish that the pipeline not be routed through their property, or provided an overall opinion on the pipeline, but not a specific comment on the impacts presented in the DEIS. In other cases, a substantive comment is recorded, but the text is not changed for a specific reason. This reason is presented in the table. In many cases the text in the DEIS is explained in light of the comment. By consulting Tables 1 and 2, an individual commenter can find his or her comments taken from a given letter or testimony, and track the disposition of the comment through the FEIS publication.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
1	Jim Schultz Missouri	1	9/5/2007	oral testimony St. Charles, MO	FLD	I'm real concerned with the river it goes through, the river there, with the flooding and the sediment would get through when they go across it -- the erosion, compaction.	Comment acknowledged. Keystone has agreed to have "all water body crossings ... assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration ... design of the crossings will also include the specification of appropriate stabilization and restoration measures." Provided that Keystone's definition of "qualified personnel" requires that they have studied natural river processes, they can be expected to specify crossing depths, channel and bank stabilization and riparian restoration measures that will minimize flooding and erosion hazards.
2	Jim Schultz Missouri	1	9/5/2007	oral testimony St. Charles, MO	LND	There wasn't any consideration to the drainage and what it would do to the long-term effect to the soil and to the production.	Keystone's construction mitigation and reclamation plan states that "[surface drainage shall be restored and re-contoured to conform to the adjacent land drainage system."
3	Gary Weil 111 Marine Lane, St. Louis, MO 63146	1	9/5/2007	oral testimony St. Charles, MO	REG	Is there something in this environmental protection study that designates who has the responsibility for doing regular leak detection inspections of this pipeline? And what are the penalties if the inspection rules are not performed by their due dates?	Keystone is required to provide regular leak detection consistent with DOT regulations. Penalties for non compliance are the responsibility of DOT.
4	John Andrzejewski Lincoln County	1	9/5/2007	oral testimony St. Charles, MO	LND	I have a residence out there that's fairly close to the current plant pipeline and the Keystone Pipeline, I'm not sure how far south they're going to want to clear land. They're telling me it's 75 feet from the centerline of where they plan to put their pipe. That will involve a half a mile of timber about 70 to 75 feet destruction and I'm very concerned about that. I don't want to lose the trees.	Trees would be felled within both the construction and permanent ROWs. Keystone describes mitigation procedures for this process in its Mitigation Plan (Appendix B to the EIS). Construction would result in permanent removal of trees in the permanent ROW, and long-term removal in the construction ROW. Revegetation of trees in the construction ROW would occur over several decades, while the permanent ROW would be maintained in an open condition. Keystone would compensate landowners on a case-by-case basis for any damages to land or lost productivity.
5	John Andrzejewski Lincoln County	1	9/5/2007	oral testimony St. Charles, MO	VAL	I'm not sure I'll be fairly compensated for the value of that timber.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
6	Thabit Hamoud Missouri Dept. of Natural Resources-Water Pollution Div.	1	9/5/2007	oral testimony St. Charles, MO	PER	I just want to say that there are two permits the State of Missouri would require this company to obtain. One of them is the land disturbance permit. We just want to make sure once they disturb the land that it will be vegetated back again and the other permit would be the hydrostatic testing. And then, once we approve there is no leakage, then we terminate the permit.	Comment acknowledged. The cited permits are included in Table 1.6-1.
7	Kristine Burkemper Old Monroe, MO (southern Lincoln County)	1	9/5/2007	oral testimony St. Charles, MO	VAL	We're also in a location that has tremendous development potential, current development potential. This will impact the value of this property immensely. If it's 100-foot easement, 50-foot easement, it makes difference. You can't build anything on it. The impact on the property value is absolutely immense.	Studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
8	Kristine Burkemper Old Monroe, MO (southern Lincoln County)	1	9/5/2007	oral testimony St. Charles, MO	OIL	Well, maybe it's not leaking in the beginning, but what about if it leaks later on. If there is a leak later down the road, will all my property be condemned as far as being a huge environmental hazard?	If a leak occurs from the Keystone pipeline onto a private property and is not due to the negligence of the property owner, Keystone will clean up the property and restore it to the same condition as the similar but unaffected property nearby (i.e., to baseline conditions). The property will not be a "huge environmental hazard" on the basis of the spilled oil.
9	Kristine Burkemper Old Monroe, MO (southern Lincoln County)	1	9/5/2007	oral testimony St. Charles, MO	WAT	we've got a lot of ground-source water concerns, whether it be streams or wells	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
10	Douglas Owsley 748 Highway D, Hawk Point, MO	1	9/5/2007	oral testimony St. Charles, MO	CME01	I already have the Platt line across my property and now I'm going to have to have two lines parallel to one another that's going to take I don't know how many feet of property, trees and everything that's in the way.	The cumulative impacts analysis has considered the cumulative land disturbance effecs wher the propsoed piepline is collocated with other pipeline projects.
11	Douglas Owsley 748 Highway D, Hawk Point, MO	1	9/5/2007	oral testimony St. Charles, MO	WAT	my home is supplied with water from an artesian well and the other line didn't hit it, but I have no idea what this one is going -- what's going to happen with this one.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.

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12	Douglas Owsley 748 Highway D, Hawk Point, MO	1	9/5/2007	oral testimony St. Charles, MO	VAL	property values are just going to go through the basement.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
13	Louis Kluesner St. Louis County, MO	1	9/5/2007	oral testimony St. Charles, MO	REG	I don't have a clear understanding of who has the accountability and the responsibility to prevent these things from happening responsibility of preventing the issues that are defined from happening.	Individual jurisdictions along the pipeline corridor would be responsible for monitoring compliance with local noise ordinances. Some potential mitigation measures discussed in the DEIS have been accepted by the Applicant and will be included in a revised CMR prior to issuance of the Presidential Permit. These mitigation measures would be applied on all construction spreads along the pipeline corridor. Other potential mitigation measures discussed in the EIS may be included as conditions to individual permits issued by regulatory authorities with jurisdiction at various locales along the proposed corridor. The Applicant has committed to an Environmental Inspector to ensure compliance with the CMR during construction. Permitting agencies would also provide monitoring during construction and operation in their specific jurisdictions.
14	Jaoh Capp 1246 60th St., Lincoln, ND	2	9/11/2007	oral testimony Michigan, ND	ENR	we believe that Keystone Pipeline crude oil and the tar sands are no solution to our energy situation.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
15	Jaoh Capp 1246 60th St., Lincoln, ND	2	9/11/2007	oral testimony Michigan, ND	GBW	With all the chemicals and toxins in it and the global warming, it pollutes to refine it.	Comment acknowledged. Refineries that receive the tar sands from the Keystone pipeline would be held to air emissions requirements and existing or new air and water discharge permits. No change to DEIS.
16	Jaoh Capp 1246 60th St., Lincoln, ND	2	9/11/2007	oral testimony Michigan, ND	RTE07	We feel that the road for this line is not really the best route. Jim Horner from the state geologist said that the 50-mile road that's further west of this one that bypasses the 401 aquifer is actually a better route.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
17	Janie Capp 1246 60th St., Lincoln, ND	2	9/11/2007	oral testimony Michigan, ND	VIS	First of all, North Dakota is known for its wide-open spaces and scenic routes and productive farmland. are we going to let a pipeline come in and ruin our wide-open spaces, our scenic routes like Pemida Gorge, Fort Ransom, Cheyenne River by running a pipeline through it? I do not want this to happen to our state with the scenic routes and the beautiful open spaces.	The pipeline would have visual impacts upon the landscape, as outlined in the EIS. The current alignment crosses the Pembina River at Tetrault Woods State Forest and the Sheyenne River. The alignment would not cross Fort Ransom State Park.
18	Janie Capp 1246 60th St., Lincoln, ND	2	9/11/2007	oral testimony Michigan, ND	GBW	Another thing, the global warming... That is three times the global warming of conventional gasoline from the Tar sands. The mass amount of energy will triple the global warming as conventional oil and devastate the environment.	Comment acknowledged. Analysis of the retrieval of tar sands is outside of the scope of this EIS. The tar sands would likely be mined or acquired even in the absence of the Keystone Project and would be refined or sent to market by an other conveyance. No change to DEIS.
19	Janie Capp 1246 60th St., Lincoln, ND	2	9/11/2007	oral testimony Michigan, ND	WAT	But there is no mention of the private wells. The commissioners asked that there be some data on these private wells. They will be getting that, but only from 1979 and on because there is no data in the database about the wells before that. And I believe that all of the farmsteads around our area had wells before that.	An inventory all of the private wells in the vicinity of the project is outside of the scope of this EIS. Issues related to private wells would be discussed between Keystone and the landowners during negotiations. Landowner will be able to comment directly and work out potential compensation details.
20	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	WAT	we have a surface water problem. Our wells are very shallow.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
21	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	WAT	if we have a leak, and Keystone has admitted that this pipeline will leak, it will contaminate our surface water and our local wells. And also, if it does leak, we're very close to the aquifers that provide water for the real water systems in the area.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
22	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	LND	They really won't give us in the easement any guarantees that the land is going to be put back as it was. We may end up with the bottom dirt on the top and it's not going to be very farmable or profitable for us even 20 years down the road.	Keystone's construction mitigation and reclamation plan states that topsoil will be separated from subsoil that "topsoil shall be replaced on the subsoil storage area and over the trench so that after settling occurs, the topsoil's approximate original depth and contour (with an allowance for settling) shall be achieved."

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23	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	CME01	I think that one of the problems that I also foresee is that they don't guarantee how many pipelines they're going to run down this so-called easement.	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Any future pipeline projects using the same right--way would require additional permits and would be required to complete the permitting process and any environmental review of appropriate state and federal regulatory jurisdictions.
24	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	LIA	They don't seemed to give us any confirmation who is going to be liable for anything that's happening as far as a sink hole that happens with the soil sinking back after a few years or even after one year.	Compensation a and monitoring for trench depression impacts are covered in Section 4.15 of the CMR (Appendix B). Landowner complaint process is covered in Section 4.14.4.
25	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	RTE03	I think that there are probably better places to put this line in the State of North Dakota than the present location. Try to find one that is not going to affect the water in the whole eastern half of the state.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone has also committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
26	Terry Ellingson 5065 125th Ave., N.E., Dahlen, ND	2	9/11/2007	oral testimony Michigan, ND	RTE04	And in all honesty, the best solution would be no pipeline.	Comment acknowledged
27	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	WAT	The city has an open lagoon system, so any potentially leak -- which we know there will be from the oil line -- can get into the lagoon system and this will accelerate it right to the Red River.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
28	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	FLD	There are no retention dams, nothing to block this water -- oil, excuse me, nothing. People talked about over-land flooding, when you have in the spring of the year you have such slopes, …	Keystone's construction mitigation and reclamation plan specifies measures to be taken where erosion by overland flow is likely to be a problem.
29	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	RTE02	They avoided state and federal land in North Dakota and I think that's just terrible.	Comment acknowledged
30	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	ENR	The future is not in fossil fuels.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
31	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	WAT	When you hear from all the people who said they have shallow wells on their farms, respect those comments when they say that. When you hear of the aquifers, the Fordville Aquifer is a very shallow aquifer.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
32	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	RTE03	We are asking for your respect and your guidance to simply not allow this to go in our area for the environment and the future generations.	Comment acknowledged.
33	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	OIL	They admit that they cannot detect a leak for 1 to 2 percent volume within a 90-day period. ...that's over 7.2 million gallons of oil in a month.	Page 2-36 of the DEIS, states that "The smallest leak that Keystone's SCADA system would be capable of detecting is in the range of 1.5 to 2 percent by volume in approximately 140 minutes (TransCanada 2007b)." This amounts to about 845 bbl (35,500 gallons) of oil at a flow rate of 435,000 bbl/d and about 1150 bbl (48,200 gallons) of oil at flow rate of 590,000 bbl/d. Leak detection protocols apply to the entire pipeline corridor. The potential for identifying a leak or release depends on the designed leak detection systems, planned surveillance, and the potential for observation of discolored soil, oil ponding, or sheens by landowners and local residents. While the areas crossed by the pipeline are predominantly rural, observations by landowners and residents through sight or smell would assist in leak identification and response mobilization.
34	Mark A. & Emma Novak	2	9/11/2007	oral testimony Michigan, ND	RTE03	This is not a good, sound choice. There were comments from the general public that stated that people from the State Water Department agree that there are alternate routes.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone has also committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.

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35	Merle Kratochvil	2	9/11/2007	oral testimony Michigan, ND	WAT	My concerns are shallow wells. There has been no study done on our wells out in our neck of the woods because all our wells have been placed in over 20, 30 [years]	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
36	Merle Kratochvil	2	9/11/2007	oral testimony Michigan, ND	MOR	But the other concern that this impact study hasn't done is in the spring of the year	Comment acknowledged; no change to DEIS.
37	Merle Kratochvil	2	9/11/2007	oral testimony Michigan, ND	OIL	If you get a spill in the spring, it spreads all over.	If a spill, especially a significant to very large one occurs during the Spring snow/ice melt and runoff period, and the oil reaches a flowing water body, the oil may be distributed over a larger area than if the spill occurred during periods of lesser flow. Potential impacts to associated wetlands, migratory birds, some fish, and other aquatic organisms may also be increased somewhat. However, the likelihood of these spills is small to very small, and Keystone's Earp will provide a detailed description of how they will be prepared to respond to contain and cleanup the spilled oil. Keystone will also be required by the state, Federal and tribal natural resource trustees to provide restoration project(s) to compensate the public for lost natural resource services under OPA, CWA and possibly other state and federal laws.
38	Merle Kratochvil	2	9/11/2007	oral testimony Michigan, ND	FLD	check with the county commissioners in these areas and stuff like that, they can tell you that the places there that the government is buying up the land because of the flooding.	Comment acknowledged. Keystone has agreed to have "all water body crossings ... assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration ... design of the crossings will also include the specification of appropriate stabilization and restoration measures." Provided that Keystone's definition of "qualified personnel" requires that they have studied natural river processes, they can be expected to specify crossing depths, channel and bank stabilization and riparian restoration measures that will minimize flooding and erosion hazards.
39	Merle Kratochvil	2	9/11/2007	oral testimony Michigan, ND	PIP	But the pipeline now they're saying is going to be at what you call a thinner gage in the rural areas. We can't have a Wal-Mart pipeline,	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
40	Pam Furstenau	2	9/11/2007	oral testimony Michigan, ND	LND	It's full of trees and rivers and streams and animals. We bought this property for the recreation. And if the pipeline goes through there and takes down the trees and wrecks the stream and the river and the animal's leave, then it's worth nothing to us. when you take the dirt away and put the dirt back, it's never the same no matter how careful you are.	Comment acknowledged
41	Pam Furstenau	2	9/11/2007	oral testimony Michigan, ND	RTE04	And we're against the pipeline going through that property.	Comment acknowledged
42	Lynette Kratochvil	2	9/11/2007	oral testimony Michigan, ND	RES	They come in and pollute all our air, pollute our water, pollute or land. Our HAZMAT teams, our local fire departments do not have the equipment, the clothing, the masks to protect themselves in any case.	Keystone has developed an Emergency Response Plan which includes procedures in the event of an oil spill. Keystone will monitor the pipeline 24 hours per day, 7 days per week, using a system which will alert system monitors of possible spills or leaks. The Operations Control Center operator has complete authority to execute pipeline shutdowns in responding to abnormal pipeline conditions. The plan or an update of the plan will be included with the Environmental Impact Statement. No change to DEIS.
43	Curtis Novak	2	9/11/2007	oral testimony Michigan, ND	PIP	granted the thickness of the pipeline to be thinner,	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
44	Curtis Novak	2	9/11/2007	oral testimony Michigan, ND	LND	with a 74-degree oil year around…You're not going to have crop production. soil that was disturbed for one reason or another -- I've never, ever seen it come back and look as pretty	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
45	Curtis Novak	2	9/11/2007	oral testimony Michigan, ND	RTE07	I don't know of a lot of oil wells in the eastern part of the state. I do hear of a lot of them out in the western part of the state. Thinking if North Dakota does have a chance to pipe into this pipeline with their oil that would eliminate having to put a pipeline parallel with the state to get it over here to put it in this pipeline. This could just hook on over in the western part of the state.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including access to crude oil supply sources, overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
46	Curtis Novak	2	9/11/2007	oral testimony Michigan, ND	RES	we're not equipped for a HAZMAT spill of any kind at all.	Keystone has developed an Emergency Response Plan which includes procedures in the event of an oil spill. Keystone will monitor the pipeline 24 hours per day, 7 days per week, using a system which will alert system monitors of possible spills or leaks. The Operations Control Center operator has complete authority to execute pipeline shutdowns in responding to abnormal pipeline conditions. The plan or an update of the plan will be included with the Environmental Impact Statement. No change to DEIS.

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47	Curtis Novak	2	9/11/2007	oral testimony Michigan, ND	RTE03	maybe along I-29 isn't such a bad deal	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
48	Paula Lawson Niobrara, NE	3	9/11/2007	oral testimony Yankton, SD	ACK	So why I'm here I'm going to ask one simple question. When, if ever, does a "from" change to for, to for, to for?	Comment acknowledged.
49	John Davidson 31275 Saginaw Ave., Rural Vermillion--Clay County, SD	3	9/11/2007	oral testimony Yankton, SD	HYP	I am particularly concerned that the Hyperion Oil Refinery will destroy a vast acreage of prime farmland, upturn stable rural communities, destroy ground and surface waters and pollute the clean air in our region. The Hyperion Refinery is a connected action as defined by your agency's regulations and it must be dealt with in this EIS.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
50	Kloucek for Ronnie Schafer Menno	3	9/11/2007	oral testimony Yankton, SD	LND	his concerns include that he encourages the State Department to not sell out to South Dakota's rural landowners that are affected, future land use how it will affect the land, including the possible livestock construction facilities over the pipeline, what's going to happen with his CRP ground.	Right-of-way agreements with landowners would prevent the construction of permanent structures above the ROW, including livestock structures. Keystone would work with landowners, FSA, and NRCS to ensure that land currently enrolled in the CRP remain in the program following construction. The local FSA and NRCS offices would direct the restoration of the site to meet the needs of the CRP.
51	Kloucek for Ronnie Schafer Menno	3	9/11/2007	oral testimony Yankton, SD	PIP	The depth of the line is his most important point. What happens -- he feels it is not near deep enough. the lighter pipe is certainly a concern to Mr. Schafer. Please do not allow any compromise on the strength and thickness of the pipeline merely to save money.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
52	Kloucek for Ronnie Schafer Menno	3	9/11/2007	oral testimony Yankton, SD	ATT	it will impact the soil temperature, Freezing reduces destructive insect populations. insects can over winter here and that's certainly a possibility because it will be warm.	Temperature affects to vegetation is addressed in Sections 3.5.5. Generally temperature at the soil surface would be 1 to 2 degrees warmer and at 6 inches would be 1 to 5 degrees warmer with the most notable increases during spring (March). Soils would still freeze during the winter in South Dakota. No change to DEIS.
53	Kloucek for Ronnie Schafer Menno	3	9/11/2007	oral testimony Yankton, SD	FLD	restore the land to its original drainage and terrain	Keystone's construction mitigation and reclamation plan specifies that the ground-surface will be returned to its pre-construction contour upon completion of construction.
54	Kloucek for Ronnie Schafer Menno	3	9/11/2007	oral testimony Yankton, SD	LIA	I need to be assured that I won't have any liability with an oil spill.	Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
55	Kloucek for Anonymous	3	9/11/2007	oral testimony Yankton, SD	RES	What happens if there's an oil spill?	The potential impacts of an oil spill are discussed in detail in Sections 3.13.4and 3.13.5 of the DEIS. The response to the spill will be described in detail in Keystone's Emergency response Plan which will be completed in Q1 2009.
56	Kloucek for Anonymous	3	9/11/2007	oral testimony Yankton, SD	REG	What is set in place to protect the land?	Individual jurisdictions along the pipeline corridor would be responsible for monitoring compliance with local noise ordinances. Some potential mitigation measures discussed in the DEIS have been accepted by the Applicant and will be included in a revised CMR prior to issuance of the Presidential Permit. These mitigation measures would be applied on all construction spreads along the pipeline corridor. Other potential mitigation measures discussed in the EIS may be included as conditions to individual permits issued by regulatory authorities with jurisdiction at various locales along the proposed corridor. The Applicant has committed to an Environmental Inspector to ensure compliance with the CMR during construction. Permitting agencies would also provide monitoring during construction and operation in their specific jurisdictions.
57	Kloucek for Anonymous	3	9/11/2007	oral testimony Yankton, SD	LND	The CRP Program how does this affect that? That's a very important conservation environmental impact issue.	Keystone would work with landowners, FSA, and NRCS to ensure that land currently enrolled in the CRP remain in the program following construction. The local FSA and NRCS offices would direct the restoration of the site to meet the needs of the CRP.
58	Kloucek	3	9/11/2007	oral testimony Yankton, SD	ENR	our country has failed to have a decent energy independence program since 1976.	Conservation and energy independence would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
59	Kloucek	3	9/11/2007	oral testimony Yankton, SD	WAT	I'm concerned about the following points: number one, the rural water system, especially our BY water and all affected water systems in South Dakota where they cross. if they leak, will that contaminate into our rural water system pipes and contamination around those pipes and the impact on that.	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
60	Kloucek	3	9/11/2007	oral testimony Yankton, SD	OIL	I believe in the early '80s there was a significant earthquake that did rupture some well lines at the time.	Comment acknowledged. Seismic hazards are addressed in Section 3.1.4. "Based on a comprehensive review of the fault activity east of the Rocky Mountains (Crone and Wheeler 2000), Keystone concluded that the proposed pipeline would not cross active faults (defined as movement along the fault within the last 10,000 years)." Large-diameter steel gas and oil pipelines are much less susceptible to earthquake damage than are water lines.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
61	Kloucek	3	9/11/2007	oral testimony Yankton, SD	LND	The CRP has been mentioned and the soil contamination issues.	Keystone would work with landowners, FSA, and NRCS to ensure that land currently enrolled in the CRP remain in the program following construction. The local FSA and NRCS offices would direct the restoration of the site to meet the needs of the CRP.
62	Kloucek	3	9/11/2007	oral testimony Yankton, SD	RTE05	The close proximity to homes and businesses. It's just plain too close for human life.	Keystone has committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
63	Kloucek	3	9/11/2007	oral testimony Yankton, SD	HYP	I strongly support his request to revise the scope of the EIS to include the refinery in the project.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
64	Kloucek	3	9/11/2007	oral testimony Yankton, SD	VAL	It's an economic issue	Comment acknowledged; no change to DEIS.
65	Jerry Glanzer 57319 432nd Ave., Bridgewater, SD	3	9/11/2007	oral testimony Yankton, SD	PIP	"Waiver granted for oil pipeline in Dakotas." We can cut the thickness of our pipe.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
66	Jerry Glanzer 57319 432nd Ave., Bridgewater, SD	3	9/11/2007	oral testimony Yankton, SD	T&E	they want to run the line under Wolfe Creek. The Topeka shiner is there.	Habitat surveys were completed at 3 crossings of Wolf Creek and 2 crossings of a tributary to Wolf Creek (Table 3.8.1-12 page 3.8-41). Habitat was found to be suitable for the Topeka Shiner at one of these crossings in McCook County, South Dakota. Mitigation measures would be required by USFWS to protect the Topeka Shiner from significant impacts, additional measures which could further reduce impacts to the Topeka Shiner are described in Section 3.8.1 pages 3.8-46 to 3.8-47.
67	Jerry Glanzer 57319 432nd Ave., Bridgewater, SD	3	9/11/2007	oral testimony Yankton, SD	WAT	If we have an oil spill, it runs into our creek.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
68	Jerry Glanzer 57319 432nd Ave., Bridgewater, SD	3	9/11/2007	oral testimony Yankton, SD	WAT	If they pollute that creek, the cattle don't drink.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
69	Ryan Grandy Taper, SD	3	9/11/2007	oral testimony Yankton, SD	WAT	My main concern is the wild and scenic stretch of the Missouri River. to put the pipeline across the Missouri River at that point I find to be unacceptable	Keystone has committed to crossing the Missouri River using HDD methods that will minimize impacts to the scenic nature of the river.
70	Ryan Grandy Taper, SD	3	9/11/2007	oral testimony Yankton, SD	T&E	I didn't see any specific considerations for the threaten species in that part of the river, namely, the pallet sturgeon and the osprey, which there are efforts to reintroduce the osprey to that section of the river.	Threats to the pallid sturgeon in the Missouri River at Yankton, South Dakota were discussed in Section 3.8.1.6 pages 3.8-39 to 3.8-45. The osprey is not listed by the USFWS as a threatened, endangered or candidate species. The Osprey is listed as threatened by the state of South Dakota and will be added to Table 3.8.1.1 and Section 3.8.2. Keystone is aware of the two osprey hack sites near the ROW (one within 450 feet, and one within 750 feet of the project ROW. These hack site may potentially be in used by the South Dakota Game and Fish Department during 2008 and 2009 if funding is available. If pipeline construction near these sites coincided with their use from mid-July to mid-August the young osprey could be disturbed.
71	Janet Schramm 1705 Pearl St., Yankton, SD	3	9/11/2007	oral testimony Yankton, SD	WAT	My concern is the safety of the pipeline as it crosses the waterlines and rivers.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
72	Janet Schramm 1705 Pearl St., Yankton, SD	3	9/11/2007	oral testimony Yankton, SD	PIP	I'm also concerned about the waiver of material in the pipeline.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
73	Janet Schramm 1705 Pearl St., Yankton, SD	3	9/11/2007	oral testimony Yankton, SD	VAL	this certainly has an economic impact.	Comment acknowledged; no change to DEIS.
74	James Unruh 44412 284th St., Marion, SD	3	9/11/2007	oral testimony Yankton, SD	FAV	my impression is that they did a very thorough job of designing this.	Comment acknowledged no change to DEIS
75	Luetta Crowley Caldwell County	4	9/4/2007	oral testimony Carrollton, MO	WAT	it was mentioned about a pipeline going under a pond. There's just no way. I don't want that. I won't stand for it.	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds.
76	Luetta Crowley Caldwell County	4	9/4/2007	oral testimony Carrollton, MO	OIL	What if we get a hole in there?	If there is a hole in the pipeline, oil will escape to the surrounding soils. Depending upon the size and rate of flow of the leak, it may be detected by the SCADA and the pipeline will be shut down. A small leak may take longer to be detected but the volume of the release will also be relatively small (see response to comment #55).
77	Bob Unternaehrer Brunswick	4	9/4/2007	oral testimony Carrollton, MO	WAT	Is the study allowing for going under waterbodies? Specifically what have you recommended in crossing farm ponds? And they sent an engineer out and asked that the pond -- a particular pond be relocated rather than crossed. I would like to see minor farm ponds, whatever that means, relocated rather than go under.	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds.
78	Bob Unternaehrer Brunswick	4	9/4/2007	oral testimony Carrollton, MO	UNA	How come you skipped the Brunswick Library?	Comment acknowledged. We chose libraries for delivery of hard copies of the DEIS based on interval distances along the length of the pipeline. In addition, landowners were sent a card that they could send back requesting a hard copy.
79	Bob Unternaehrer Brunswick	4	9/4/2007	oral testimony Carrollton, MO	MOR	Are there site specific plans for terrace agriculture land in the state?	Keystone addresses terraced agriculture in its Mitigation Plan. Keystone would survey terraces to establish pre-construction contours to be used to restore terraces following construction. During construction, temporary erosion control measures would be utilized. Keystone would restore drainage to its pre-construction condition and would install new drainage control measures as necessary to prevent erosion. There are no site-specific plans for construction in areas with steep slopes or agricultural terraces, but surveying to establish pre-construction contours would be site-specific.
80	Bob Unternaehrer Brunswick	4	9/4/2007	oral testimony Carrollton, MO	LND	how the land was put back to use? Say if they were supposed to topsoil and they didn't, then he has the right to compensation?	Keystone's Mitigation Plan includes a measure specifying the process for topsoil segregation and restoration of the ROW after construction so that topsoil is replaced and soil compaction is remediated. In the event that construction results in damage to property or agricultural productivity of land, Keystone would compensate landowners for demonstrated costs resulting from construction activities.
81	Grace West 30911 JJ Hwy., Norborne, MO	4	9/4/2007	oral testimony Carrollton, MO	EDT	it's on the page that's marked 3.14-6. It's at the bottom of the page. Under Visual Resources. And it says: Depending on the viewpoint, cumulative impact on visual resources could be expected from the coal-fired power plant because it would be about 0.4 miles southeast of REX's Turney Compression Stations and several miles from Keystone's Pump Station 31. But that's an error. Because the Turney Compression Station is not in Carroll County. It's in Clinton County.	Comment acknowledged; text changed to indicate correct location of the compressor station.
82	Howard Elmore 29917 Sterline Ave., Salisbury, MO 65281	4	9/4/2007	oral testimony Carrollton, MO	ERO	It would wash all that dirt into the ditches [during construction…]	Keystone's construction mitigation and reclamation plan states that temporary sediment barriers will be installed "below disturbed areas where there is a hazard of off-site sedimentation." Sediment-control measures described in Keystone's plan will minimize the risk of sedimentation outside of the construction right-of-way.
83	Howell Sumner Wood River, IL	5	9/6/2007	oral testimony Collinsville, IL	FAV	I'm all for the pipeline.	Comment acknowledged no change to DEIS
84	Jim Beasman for Piasa Palisades Group of the Sierra Club	5	9/6/2007	oral testimony Collinsville, IL	GBW	The biggest problem with this is what it's going to be piping, tar sands. You know, from a global warming perspective, tar sands are the worst kind of oil out there.	Alternative energy sources including "clean" energy sources would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. It is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
85	Jim Beasman for Piasa Palisades Group of the Sierra Club	5	9/6/2007	oral testimony Collinsville, IL	ENR	We should be working towards a clean energy future.	Alternative energy sources including "clean" energy sources would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
86	Jim Beasman for Piasa Palisades Group of the Sierra Club	5	9/6/2007	oral testimony Collinsville, IL	LND	this is pristine wilderness up there just being utterly destroyed and devastated.	Comment acknowledged; no change to DEIS.

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Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
87	Jim Beasman for Piasa Palisades Group of the Sierra Club	5	9/6/2007	oral testimony Collinsville, IL	CON	Then we have the issues with the refinery. We already have air pollution problems in our area, we don't need more,	The EIS discloses that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the Wood River Refinery upgrade are dicussed in several subsections of Section 3. The identity of other refineries where Keystone crude oil would be sent (from transportation hubs) varies depending on market conditions, availability of imports from other countries, weather conditions,etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2 % of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.
88	Leonard Gall 345 Sunflower Dr., Highland, IL	5	9/6/2007	oral testimony Collinsville, IL	PIP	my concern is with the construction of the pipeline, is the pipeline company going to construct their pipeline that it will be able to handle this subsidence,	Comment acknowledged. Keystone has chosen a pipeline route that avoids areas of known extant subsidence hazard. Any coal mining operations proposed after the pipeline was in place would have to take into account the existence of the pipeline as part of their permitting process, and should therefore be required to avoid or mitigate any increase in subsidence hazards to the pipeline.
89	Leonard Gall 345 Sunflower Dr., Highland, IL	5	9/6/2007	oral testimony Collinsville, IL	CON	possibility of coal mining being done in Bond County, and it will be long wall mining. And in long wall mining, there's subsidence,	Keystone has chosen a pipeline route that avoids areas of known existing subsidence hazard. Any coal mining operations proposed after the pipeline has been constructed and is in operatoin would have to consider the proximity of the pipeline as part of their permitting process and would incorporate sibsidence mitigation if any potential to the piepline were to occur.
90	Leonard Gall 345 Sunflower Dr., Highland, IL	5	9/6/2007	oral testimony Collinsville, IL	LIA	and who's going to be responsible for the environmental cleanup?	Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
91	James Kolda Collinsville, IL	5	9/6/2007	oral testimony Collinsville, IL	FAV	And I'm 100 percent for the project,	Comment acknowledged no change to DEIS
92	Delmar Motycka 4546 Newton St., Lincoln, NE 68506	6	9/12/2007	oral testimony Stranton, NE	WET	I didn't see anything which pertains to my concerns about the environmental impact on some wetlands and some springs on my farms. The proposed route of the pipeline will pass through the wetland approximately 450 feet north of the existing well.	Keystone has committed to mitigation to reduce wetland impacts from construction and operation of the pipeline as outlined in Section 3.4.3 pages 3.4-13 to 3.4-15. Keystone plans to restore wetlands that have been damaged by pipeline construction (see 3.4-15).
93	Delmar Motycka 4546 Newton St., Lincoln, NE 68506	6	9/12/2007	oral testimony Stranton, NE	SOI	the pipeline is proposed to be seven feet or more below the surface of the ground and supposedly below the bed of the wetland. Excavation for the pipe will disrupt this existing soil profile. constant temperature of this magnitude will have a drying effect	Comment acknowledged. Keystone has expressed willingness to work with individual landowners to make minor route variations to avoid site-specific impacts.
94	Delmar Motycka 4546 Newton St., Lincoln, NE 68506	6	9/12/2007	oral testimony Stranton, NE	WAT	These springs are a source of water for the wildlife in this area. waterfowl use the wetlands for resting in the migration route.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages
95	Delmar Motycka 4546 Newton St., Lincoln, NE 68506	6	9/12/2007	oral testimony Stranton, NE	RTE07	This suggested route would cross Loski Creek just downstream from the natural spring and would completely avoid the wetlands and not interfere with the hydrology of the area.	Comment acknowledged.
96	Delmar Motycka 4546 Newton St., Lincoln, NE 68506	6	9/12/2007	oral testimony Stranton, NE	CUL01	There are two pioneer graves located near the wetland on the farm. The original landmarks are gone.	Comment acknowledged. DOS will bring this information to the attention of applicant and see if this area was examined by their cultural resource contractor
97	John Veught 84198 562nd Ave., Stanton	6	9/12/2007	oral testimony Stranton, NE	ORG	I farm organically and … what it does is destroys what I've been building up for the last -- since 1998 -- the soil condition in the ground.	Keystone has not made special commitments relating to construction and operations on organic farms. However, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." Maintaining "organic" status and the associated health of the land is arguably an essential aspect of the productivity of organic farms. Any owner of an organic or clean-water farm would be wise to ensure that their easement agreement with Keystone takes into account the particular nature of their farm's productivity.
98	John Veught 84198 562nd Ave., Stanton	6	9/12/2007	oral testimony Stranton, NE	WAT	we have springs going through what they're going through on our land. And if that destroys those springs,	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds springs and other features.
99	Chuck Jura	6	9/12/2007	oral testimony Stranton, NE	T&E	Have you checked for the endangered species of the prairie orchard, which is an environmentally endangered species in the State of Nebraska? ...ensure that you're not going to damage any environmental species that are within the Platte River Valley?	Surveys for the Western Prairie Fringed Orchid were completed at 19 sites in Cedar, Stanton, Colfax, Saline, and Jefferson counties in Nebraska. Five of the 19 sites evaluated were determined to be suitable habitat for the Western Prairie Fringed Orchid. Table 3.8.1-14 was updated with survey data received from Keystone in September 2007.

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Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
100	Chuck Jura	6	9/12/2007	oral testimony Stranton, NE	RTE03	Why didn't you put it in the valley? Why don't you put it down toward the ditch? Why don't you go down I-29?	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
101	Chuck Jura	6	9/12/2007	oral testimony Stranton, NE	PUM	What about power pumping stations? Are you going to have a pump there? Are you going to have a power pumping station there?	Pump stations will be electric powered - See Section 2.1.1.2 and 2.1.2.2.
102	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	RTE03	I think that the routing of the -- the path of the pipeline should not be where it is because it interferes with farming operations. it should be placed in the Interstate 29 right-of-way.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Generally, routing along roadways would cause the pipeline to intersect more areas of development or potential development.
103	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	OIL	when the oil leaks occurs, and they will, it causes permanent damage to the land.	If a leak occurs from the Keystone pipeline onto a private property and is not due to the negligence of the property owner, Keystone will clean up the property and restore it to the same condition as the similar but unaffected property nearby (i.e., to baseline conditions).
104	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	PIP	I do not approve of the construction, the materials or the manufacturing processes of the pipeline that are in use today. The pipeline does not use the most effective. They use the cheapest.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
105	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	OIL	the equipment that contractors intends to use are not good enough to detect what are called pinhole leaks. They have to be able to detect pinhole leaks.	Page 2-36 of the DEIS, states that "The smallest leak that Keystone's SCADA system would be capable of detecting is in the range of 1.5 to 2 percent by volume in approximately 140 minutes (TransCanada 2007b)." This amounts to about 845 bbl (35,500 gallons) of oil at a flow rate of 435,000 bbl/d and about 1150 bbl (48,200 gallons) of oil at flow rate of 590,000 bbl/d. A true pinhole leak, while difficult to detect, also by definition results in a small amount of oil released over an extended period of time. This oil, even if not detected by the SCADA for some time, will either remain in the soil and biodegrade naturally, or surface on the right-of-way where it will be detected during the routine overflights and ground inspections conducted by Keystone, or through reports by landowners, residents, or passersby..
106	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	ACK	It's my home. It's my heritage. It's my culture.	Comment acknowledged no change to DEIS
107	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	RTE05	The proposed path of the pipeline 3 miles east of Valley City will be within I'd say a desecrating distance from the cemetery	Comment acknowledged
108	Richard Starke	7	9/12/2007	oral testimony Lisbon, ND	NOI02	It makes noise. It causes vibration. [It=flow through pipeline causes turbulent flow vibrations]	Material traveling through a buried pipeline would not emit audible noise above the surface or perceptible level of vibration. Updated text in Section 3.12.2.3.
109	Valera Hayen 9164 119th Ave., SE Fargo, ND	7	9/12/2007	oral testimony Lisbon, ND	WAT	The study looks at all the public water facilities in the state, but does not take into consideration the private wells.	An inventory all of the private wells in the vicinity of the project is outside of the scope of this EIS. Issues related to private wells would be discussed between Keystone and the landowners during negotiations. Landowner will be able to comment directly and work out potential compensation details.
110	Kaitlyn Bayley representing Standing Rock Reservation's Tribal Historic Preservation Office PO Box D, Fort Yates, ND	7	9/12/2007	oral testimony Lisbon, ND	CUL03	I'm here to address the protection and preservation of cultural resources...And when I say "cultural resources," I mean cultural sites, sacred sites, burial sites -- things like that.	Comment acknowledged no change to DEIS
111	Kaitlyn Bayley representing Standing Rock Reservation's Tribal Historic Preservation Office PO Box D, Fort Yates, ND	7	9/12/2007	oral testimony Lisbon, ND	CUL01	And in the DEIS, as the survey of the entire 1,300-mile corridor is seriously incomplete	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
112	Kaitlyn Bayley representing Standing Rock Reservation's Tribal Historic Preservation Office PO Box D, Fort Yates, ND	7	9/12/2007	oral testimony Lisbon, ND	CUL02	the timeline proposed for the draft programmatic agreement with the tribes and the final EIS timelines seems very unrealistic,	Comment acknowledged no change to DEIS
113	Nyle Burchill 835 8th Ave., NW Valley City, ND	7	9/12/2007	oral testimony Lisbon, ND	WAT	I don't think the proper concern has been made in their proposed route as far as Lake Ashtabula and the Cheyenne River. I'm just very concerned about the route that they're proposing as far as it is to bodies of water.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
114	Nyle Burchill 835 8th Ave., NW Valley City, ND	7	9/12/2007	oral testimony Lisbon, ND	RTE03	they would not have to move it very far to the east to get it out of this watershed.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
115	Nyle Burchill 835 8th Ave., NW Valley City, ND	7	9/12/2007	oral testimony Lisbon, ND	LND	It's proposed across a very scenic area, a very wooded area.	Comment acknowledged; no change to DEIS.
116	Pat Hurley w/ Barnes County Water Resource District in Valley City Litchfield, ND	7	9/12/2007	oral testimony Lisbon, ND	WAT	The proposed line they've got going comes awful close to Ashtabula or awful close to the Cheyenne River.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
117	Pat Hurley w/ Barnes County Water Resource District in Valley City Litchfield, ND	7	9/12/2007	oral testimony Lisbon, ND	RTE03	If was moved over and there was a leak and it was in the Maple River watershed, there would be less miles of contamination before it hit the Red River.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements and are designed to minimize the potentiual for pipeline leaks of spills. These regulations also require Keystone to install and utilize a dedicated state-of-the-art Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
118	Jack Lawler w/ Tewaukon National Wildlife Refuge 9754 1431/2 Ave., SE Cayuga, ND	7	9/12/2007	oral testimony Lisbon, ND	REG	section in the DEIS, 5.4.2, that contains recommendations and I guess we don't really have a good understanding of what will become of those recommendations. ...So I'm interested in knowing what's going to become of those recommendations	Individual jurisdictions along the pipeline corridor would be responsible for monitoring compliance with local noise ordinances. Some potential mitigation measures discussed in the DEIS have been accepted by the Applicant and will be included in a revised CMR prior to issuance of the Presidential Permit. These mitigation measures would be applied on all construction spreads along the pipeline corridor. Other potential mitigation measures discussed in the EIS may be included as conditions to individual permits issued by regulatory authorities with jurisdiction at various locales along the proposed corridor. The Applicant has committed to an Environmental Inspector to ensure compliance with the CMR during construction. Permitting agencies would also provide monitoring during construction and operation in their specific jurisdictions.
119	Jack Lawler w/ Tewaukon National Wildlife Refuge 9754 1431/2 Ave.,	7	9/12/2007	oral testimony Lisbon, ND	WET	Appendix B in the mitigation plan states that "there will be no measures to prevent sedimentation in dry wellings," and we have a concern about that; particularly, because the wetlands are dry does not mean that they are any less subject to sedimentation from the excavated material from the pipeline trench.	Appendix B in the mitigation plan states that "there will be no measures to prevent sedimentation in dry wellings," and we have a concern about that; particularly, because the wetlands are dry does not mean that they are any less subject to sedimentation from the excavated material from the pipeline trench.
120	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	VAL	I'm opposed to the TransCanada pipeline coming through the proposed route, because I think it will cause some serious economic impacts that are irreversible to groundwater and to the environment.	Comment acknowledged. Damage to groundwater is unlikely due to the low probability of a spill, Keystone's Emergency Response Plan (ERP), and the viscosity of the oil product, all of which will allow Keystone to contain, mitigate, and clean up any spills which occur.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

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121	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	RTE03	I think there are better routes that could be looked at. We'd like to see another alternative looked at closer. this pipeline or TransCanada is in an area which has a lot of potential, serious potential for contamination. This was an alternate route that was considered some time ago in the process.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone will work with the individual landowner to find the best route though their property to avoid sensitive areas, but within the constraints of the project design.
122	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	MOR	objection of an EIS is to look at environmental impacts, and in that process also look at alternatives. So what I'm suggesting tonight is there are some that have not been addressed. needs to be looked at closer in the EIS is the history of spills.	Please refer to the discussion of spill and leak frequency in section 3.13
123	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	HYP	the environmental impact statement, as written, does not address the Hyperion Oil Refinery proposed at Elk Point. I believe the oil refinery's impact should be addressed in this EIS	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
124	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	CME01	it will be a corridor that would allow a second and a third pipe.	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Any future pipeline projects using the same right--way would require additional permits and would be required to complete the permitting process and any environmental review of appropriate state and federal regulatory jurisdictions.
125	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	WAT	To replace that system if it were contaminated by an oil leak, an oil spill, the value would be at least $11 million. The bigger problem would be getting it done in time to create an alternate water source for the people who would be out of water. If there's an oil leak in this area, all across -- virtually all across this county, that oil will get into the water supply very quickly. an oil spill fire. There are fires that can light up.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages. he oil does not catch fire or explode without an ignition source immediately in the vapor plume. Even then,
126	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	WAT	if you had a spill in those drainages, where is it likely to go. It's a very sandy area. The snow and rain that comes out of these hills is what recharges this aquifer. this aquifer in this area is anywhere from 25 to 45 or 60 feet deep. We just want to know how you're going to fix it if you're taking it through a sensitive aquifer area and some reality check and will it really be fixable.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
127	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	REG	the volumes of leaks that are below 1.5 percent of the pipe volume cannot be tracked by the Computer system that's monitoring it. How do you maintain it? How do you fix a leak in this area? Where's the enforcement, and why can we say that there are no leaks? They'll be safety, they'll be maintenance. These are concerns I have that we'd like to see the State Department, when they do the review, check with people that do the autopsies on these failures and get some protection for our community.	Page 2-36 of the DEIS, states that "The smallest leak that Keystone's SCADA system would be capable of detecting is in the range of 1.5 to 2 percent by volume in approximately 140 minutes (TransCanada 2007b)." This amounts to about 845 bbl (35,500 gallons) of oil at a flow rate of 435,000 bbl/d and about 1150 bbl (48,200 gallons) of oil at flow rate of 590,000 bbl/d. Leak detection protocols apply to the entire pipeline corridor. The potential for identifying a leak or release depends on the designed leak detection systems, planned surveillance, and the potential for observation of discolored soil, oil ponding, or sheens by landowners and local residents. While the areas crossed by the pipeline are predominantly rural, observations by landowners and residents through sight or smell would assist in leak identification and response mobilization.
128	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	T&E	I didn't see much on these two issues. The Dakota Skipper, which is found in native grasslands, in the area where we're talking about going through these three counties. The next one is a plant called the Western Prairie fringe orchard. Both are on the endangered species list. Both are in this area where the pipeline is crossing.	Surveys for native prairie habitats which could be suitable for the Dakota Skipper and Western Prairie Fringed Orchid were addressed in Section 3.8.1. Sections on these species were updated with survey data received from Keystone in September 2007.
129	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	LND	Bottom line is this land that you're crossing with this pipeline, the TransCanada is crossing, is farm country. It's good farm country. It's a productive place to raise food.	Comment acknowledged; no change to DEIS.

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Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
130	Curt Hohn w/ WEB Water Rural Water System Aberdeen, SD	8	9/13/2007	oral testimony Clark, SD	WET	any wetlands crossed by pipe where wetlands are damaged will have to be mitigated. In some cases, for every acre damaged by the pipe, six will have to be purchased somewhere to mitigate. We have a right to know where will the federal government or TransCanada condemn farmland to replace wetlands.	Keystone has committed to mitigation to reduce wetland impacts from construction and operation of the pipeline as outlined in Section 3.4.3 pages 3.4-13 to 3.4-15. Keystone plans to restore wetlands that have been damaged by pipeline construction (see 3.4-15). Compensatory mitigation would be negotiated during issuance of USACE 404 permits and any state wetland permits.
131	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	RTE03	I do believe that the I-29 route is still the best.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Generally, routing along roadways would cause the pipeline to intersect more areas of development or potential development.
132	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	PIP	rural areas were being approved for a pipe of a lesser thickness.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
133	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	LND	the land that is buried would be ruined for a lifetime if not forever. The difference on farmland being destroyed and city houses being destroyed is huge. You would be allowing the potential destruction, permanent destruction of 6,160 acres just in the state of South Dakota.	Comment acknowledged; no change to DEIS.
134	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	ERO	There is no cement or asphalt to protect any land on a farm. There's only dirt that may erode, leaving less cover to protect these pipes.	Comment acknowledged. Section 3.2.2.2 (p. 3.2-10) to be amended to include the following commitment from Keystone: "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices."
135	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	ATT	One other items that was brought up that neither Ms. Orlando or some of her staff had thought of are animals such as badgers, who dig next to a line. The line is going to be warm. They get done digging, year after year, the soil can collapse when machinery drives across it. There also has not been enough time for this DEIS study or study	Some badger burrows would likely be destroyed during construction if they occur within the construction ROW. Usually the approaching construction equipment would be sufficiently loud so that badgers would leave the area prior to the operation of equipment at their burrow sites. Badgers may be attracted by the warmth generated by the pipeline especially during winter months. It is unlikely that badgers would be able to damage the pipeline, although they may damage the pipeline coating. Keystone will conduct routine inspections of the pipeline ROW after construction. Should badgers appear to threaten pipeline integrity appropriate wildlife officials would be contacted and control measures would likely be implemented after appropriate permits were issued.
136	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	LIA	Who's going to be responsible for the cost of the machinery? Combines, combine heads, tractors, planters and any machinery do not come cheap.	Liability for landowner equipment damage resulting from pipeline construction and operation is an issue addressed within the terms of the easement agreement between Keystone and the landowner. This is not an issue addressed under NEPA.
137	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	OPP	Yet very little is done to accommodate the people that are to be affected the most by this pipeline. There should have been meetings in each county, if not every other county. People shouldn't have had to drive 100 miles to go to a meeting.	Thirteen public comment meetings were held at reasonable intervals along the proposed pipeline corridor.
138	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	VAL	This pipeline would stop our expanding into the future	DEIS text amended to indicate that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
139	Lillian Anderson 12189 415th Ave., Langford, SD 57454	8	9/13/2007	oral testimony Clark, SD	HYP	We all are convinced that Elk Point-Hyperion are very much attached.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
140	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	RTE05	It goes by my farmstead within close to a quarter mile from my house	Keystone has committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
141	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	VAL	financially it limits my future expansion.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
142	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	WET	I've got wetlands affected;	Keystone has committed to mitigation to reduce wetland impacts from construction and operation of the pipeline as outlined in Section 3.4.3 pages 3.4-13 to 3.4-15. Keystone plans to restore wetlands that have been damaged by pipeline construction (see 3.4-15).
143	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	WAT	if there were to be a leak, the oil will flow into my dugouts. if there's enough oil spilled, it will continue to leak onto my other two quarters, which has a -- one's got a real big major wetland, and then it flows right on back through.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
144	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	LIA	From what I understand, I'm liable for anything on my property. So if it would leak on my property and it would contaminate people further south, they've got nobody to sue but me. if I would sign that easement, I waive their liability. What happens if I can't -- during the construction I can't have 200 head of cattle on where they're cutting through?	Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
145	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	LND	I have three different dugouts, three different nests of Canadian geese.	Canada geese are migratory birds and as such are protected under the Migratory Bird Treaty Act (MBTA). Keystone has committed to the following measure to protect nesting birds (see page 3.6-15 in Section 3.6.5) Keystone will contract a qualified biologist to conduct a survey of breeding bird habitat within 330 feet of proposed surface disturbance activities that would occur during the breeding season. If the biologist documents an active nest for a species that is designated as a migratory bird during the survey, Keystone will work with USFWS to identify measures to comply with the MBTA.
146	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	VAL	I figure the value of my property is going to be worth way less than that, just for an investor wanting to buy it. They won't want to buy it with that oil line on there.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
147	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	RTE03	Well, there is other alternatives. The I-29, that's another alternative. Another alternative is build a refinery in Alberta. Refine it first and then let's go with it.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
148	Mike Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	ACK	I've never heard anything about the static electricity that that will create. my cattle may not be able to use those dugouts because they'll get a shock every time they go to drink water. But if things malfunction, it could be very high voltage. He said but could kill a person	The pipeline in the ground is not expected to create a discharge of static electricity in the ground or ponds. Comment acknowledged
149	Susan Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	UNA	I ordered the CD. I received it and guess what? There was no information on my CD. Yes. So it's an empty disk.	Comment acknowledged; new CD provided
150	Susan Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	VAL	But there was no mention in there at all of the losses that a property owner could have. it could be devastating to us financially.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
151	Susan Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	OPP	We're the land owners. It's affecting us. I think we should have been included, somebody should have been.	Comment acknowledged no change to DEIS: Keystone will work with individual landowners to find the best route though their property within the constraints of the project design.
152	Susan Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	RTE03	I think that the I-29 corridor would be the best route.	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
153	Susan Sibson 23782 426th Ave., Howard, SD	8	9/13/2007	oral testimony Clark, SD	EDT	I'd like you to look through the statement and see where the word "should" was used, because I had some concerns about that.	Comment considered. Will change as appropriate.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
154	Kent Moeckly PO Box 903, Britton-Marshall County	8	9/13/2007	oral testimony Clark, SD	PIP	regulations only say we have to be 30 inches deep, which is ridiculous in farm country. We're going to go down four feet, 48 inches, which is good."	Comment acknowledged Addressed in Section 2.2.1.3. The DOT requires a minimum of 36 inches of cover in most areas, and a minimum of 18 inches of cover in rocky areas. Keystone proposes to use a minimum of 36 inches of cover in rocky areas and 48 inches in other locations.
155	Kent Moeckly PO Box 903, Britton-Marshall County	8	9/13/2007	oral testimony Clark, SD	ENR	We relied upon our government to mandate a reduction in the use of oil, reduction of oil consumption.	Conservation and energy independence would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
156	Kent Moeckly PO Box 903, Britton-Marshall County	8	9/13/2007	oral testimony Clark, SD	RTE03	why this darn thing isn't going down I-29.	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
157	Kent Moeckly PO Box 903, Britton-Marshall County	8	9/13/2007	oral testimony Clark, SD	LND	It makes no sense to run it through good farmland,	Comment acknowledged
158	Kent Moeckly PO Box 903, Britton-Marshall County	8	9/13/2007	oral testimony Clark, SD	VAL	The extent of the economic impact would depend on the number of productive acres affected.	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone intends to repair or restore drain tiles, fences, and land productivity as these may be damaged during construction. After construction, all but 140 acres of agricultural land can revert to its previous use. In addition, Keystone will compensate landowners for actual crop losses resulting from removal of standing crops, disruption of planned seeding activity, disruption of general farming activities, or other losses resulting from construction. No change to DEIS.
159	Kent Moeckly PO Box 903, Britton-Marshall County	8	9/13/2007	oral testimony Clark, SD	LIA	Crop losses likely would be reimbursed -- likely would be reimbursed by Keystone.	Comment acknowledged.
160	Delwin Hofer 40916 192nd St., Carpenter, 57322	8	9/13/2007	oral testimony Clark, SD	ERO	There's going to be erosion	Comment acknowledged. Section 3.2.2.2 (p. 3.2-10) to be amended to include the following commitment from Keystone: "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices."
161	Delwin Hofer 40916 192nd St., Carpenter, 57322	8	9/13/2007	oral testimony Clark, SD	LND	and they're taking shelter belts out	Comment acknowledged.
162	Delwin Hofer 40916 192nd St., Carpenter, 57322	8	9/13/2007	oral testimony Clark, SD	WET	It's illegal for me to go out and dig through a wetlands, and take a tree out of the wetlands. But according to this statement, TransCanada's going to have a right to do that.	Keystone has committed to mitigation to reduce wetland impacts from construction and operation of the pipeline as outlined in Section 3.4.3 pages 3.4-13 to 3.4-15. Keystone plans to restore wetlands that have been damaged by pipeline construction (see 3.4-15). Keystone will need to acquire permits for wetland construction from the USACE and state agencies if applicable. Compensatory mitigation for any permanent wetland losses would be negotiated during issuance of USACE 404 permits and any state wetland permits.
163	Delwin Hofer 40916 192nd St., Carpenter, 57322	8	9/13/2007	oral testimony Clark, SD	NOI02	I have no idea how much noise the pumping plant is going to make.	See Section 3.12.2.2, 2.3 and Table 3.12.2-2. Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels.
164	Sheila Blomster 37055 128th St., Witonka, SD	8	9/13/2007	oral testimony Clark, SD	ACK	This farm has been in my family 67 years.	Comment acknowledged.
165	Sheila Blomster 37055 128th St., Witonka, SD	8	9/13/2007	oral testimony Clark, SD	PIP	So the safety of this area is of utmost importance to us. Using a thinner pipe isn't going to work.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
166	Sheila Blomster 37055 128th St., Witonka, SD	8	9/13/2007	oral testimony Clark, SD	LND	But it's of utmost importance that safety to the environment for the land owner and for animals, plants, the water systems, that is really all that counts. Don't take out prime farmland.	Comment acknowledged.
167	Sheila Blomster 37055 128th St., Witonka, SD	8	9/13/2007	oral testimony Clark, SD	RTE04	we don't want it to come on her land.	Comment acknowledged.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
168	Sheila Blomster 37055 128th St., Witonka, SD	8	9/13/2007	oral testimony Clark, SD	RTE03	We would rather have it go where these leaks would be very noticeably found much sooner, along a highway like I-29.	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
169	Sheila Blomster 37055 128th St., Witonka, SD	8	9/13/2007	oral testimony Clark, SD	WAT	This is of utmost importance to all of us. The water lines that nurture these communities	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
170	Neal Henson 3166 Superior Rd., Seward, NE 68434	9	9/13/2007	oral testimony Seward, NE	PIP	continues to be the depth of the top of the pipeline.	Comment acknowledged Addressed in Section 2.2.1.3. The DOT requires a minimum of 36 inches of cover in most areas, and a minimum of 18 inches of cover in rocky areas. Keystone proposes to use a minimum of 36 inches of cover in rocky areas and 48 inches in other locations.
171	Neal Henson 3166 Superior Rd., Seward, NE 68434	9	9/13/2007	oral testimony Seward, NE	LIA	am I responsible if I hit it, and where does my responsibilities lie?	Keystone designed the pipeline trench and cover depths to prevent accidental impact to the pipeline during normal agricultural activities. Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
172	Neal Henson 3166 Superior Rd., Seward, NE 68434	9	9/13/2007	oral testimony Seward, NE	ERO	even with careful measures there will be some erosion over the next 50 years.	Comment acknowledged. Section 3.2.2.2 (p. 3.2-10) to be amended to include the following commitment from Keystone: "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices."
173	Neal Henson 3166 Superior Rd., Seward, NE 68434	9	9/13/2007	oral testimony Seward, NE	SOI	will this affect my ground for drying out?	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
174	Neal Henson 3166 Superior Rd., Seward, NE 68434	9	9/13/2007	oral testimony Seward, NE	RTE05	Finally, the placement of this pipeline goes across center pivot irrigation	Issues related to irrigation systems, including pivot irrigation systems are addressed at Section 4.1 of the Construcion Mitigation and Reclamation Plan provided in Appendix B. Also Keystone will work with individual landowners to find the best route though their property within the constraints of the project design. Keystone has committed to repair any irrigation systems impacted by pipeline construction
175	Neal Henson 3166 Superior Rd., Seward, NE 68434	9	9/13/2007	oral testimony Seward, NE	WAT	Also, the contamination of other ground water systems is also a concern, with the low aquifer.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
176	Jon Kruse 303 E. Northern Heights Dr., Seward, NE	9	9/13/2007	oral testimony Seward, NE	RTE01	The Committee has drawn up a Variation Route No. 2, and are submitting it to the Department of State and TransCanada to look at. Our Seward Variation Route No. 2 decreases that number of property owners from a price of 103 down to 53.	Seward Route Variation No. 2 has been analyzed and is discussed in the FEIS; see Section 3.14.
177	Jon Kruse 303 E. Northern Heights Dr., Seward, NE	9	9/13/2007	oral testimony Seward, NE	WAT	The Keystone alignment places the drinking water supply for 6,000 people in Seward at risk.	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
178	Jon Kruse 303 E. Northern Heights Dr.,	9	9/13/2007	oral testimony Seward, NE	CME01	This means that in the future, TransCanada has the right to add one or more pipelines carrying oil, natural gas, hydrocarbons, petroleum products and all byproducts thereof in the same easement,	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Any future pipeline projects using the same right--way would require additional permits and would be required to complete the permitting process and any environmental review of appropriate state and federal regulatory jurisdictions.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
179	Jon Kruse 303 E. Northern Heights Dr., Seward, NE	9	9/13/2007	oral testimony Seward, NE	RTE05	The Keystone alignment crosses high consequence areas, defined as an other populated area, which means a place defined by the Census Bureau that contains a concentrated population, such as an incorporated or unincorporated town, village or other designated residential or commercial area.	Keystone's documented process for identifying the proposed route avoided populated places, passing through rural, sparsly popluated areas. The proposed pipeline route one passes through 2 populated areas, one at the crossing of the Missouri river and the other at the Wood River Terminal in the St. Luis urban area. The prposed pipeline route does not pass through any other populated places.
180	Jon Kruse 303 E. Northern Heights Dr., Seward, NE	9	9/13/2007	oral testimony Seward, NE	WAT	The fifth area of concern was drinking water. The TransCanada route crosses two water mains constructed of PBC pipe and two water mains made from iron.	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
181	Jon Kruse 303 E. Northern Heights Dr., Seward, NE	9	9/13/2007	oral testimony Seward, NE	WAT	There's no assurance That the City of Seward would be able to deliver a constant, uninterrupted supply of water should there be a leak or spill caused by excavation damage in this area.	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
182	Jon Kruse 303 E. Northern Heights Dr., Seward, NE	9	9/13/2007	oral testimony Seward, NE	HUM	The human factor is a most important factor in taking into account the probability of a pipeline leak, rupture or spill and the damage and expense that results.	Comment acknowledged no change to DEIS
183	Janet Woolsoncroft 2210 The Knolls,	9	9/13/2007	oral testimony Seward, NE	WAT	There are springs, wetlands and ponds on my property.	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds springs and other features.
184	Janet Woolsoncroft 2210 The Knolls, Lincoln, NE 68512	9	9/13/2007	oral testimony Seward, NE	RTE07	I am here to advocate that any route that you approve for Keystone goes to the south, where Rockies' route was finally placed, in order to avoid the potential of damaging my wetlands, springs and ponds. The pipeline route needs to change. Make sure the pipeline is routed to the south of Rockies' current pipeline.	Keystone has committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
185	Janet Woolsoncroft 2210 The Knolls, Lincoln, NE 68512	9	9/13/2007	oral testimony Seward, NE	CME01	I also don't understand why one land owner should bear the entire burden of having every pipeline on their property,	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Any future pipeline projects using the same right--way would require additional permits and would be required to complete the permitting process and any environmental review of appropriate state and federal regulatory jurisdictions.
186	Norman Luebbe 2935 Adams Rd., Shore, NE 68434	9	9/13/2007	oral testimony Seward, NE	LND	Down the road in the future, 10, 20, 30, 40, I don't know how many years, but what is the highest use of this land?	Comment acknowledged
187	Norman Luebbe 2935 Adams Rd., Shore, NE 68434	9	9/13/2007	oral testimony Seward, NE	WAT	So I think of course the biggest issue here is water.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages. he oil does not catch fire or explode without an ignition source immediately in the vapor plume. Even then,
188	Robert D. Fiala 411 North Columbia Ave., Seward, NE	9	9/13/2007	oral testimony Seward, NE	WAT	particularly we in Seward are concerned about our water supply.	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
189	Alan Luebbe 1318 252nd, Seward, NE	9	9/13/2007	oral testimony Seward, NE	RTE02	But I'd like to think that somehow they would avoid just going right through people's homesteads or acreages and things like that.	Keystone has committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
190	David Lathrop w/ Water Wastewater Management	9	9/13/2007	oral testimony Seward, NE	LIA	I am curious about the risk assessment. So it seems we should probably have a baseline test done and periodic testing at a higher frequency than we normally have after that. I guess would feel that the pipeline would be responsible for that. I think it would be a good idea to see extra insurance bonded for the Keystone Pipeline, to make sure that the liability coverage	The risk assessment considers potential leaks from all reasonable causes including corrosion, structural failure, and punctures and breaks.
191	David Lathrop w/ Water Wastewater Management	9	9/13/2007	oral testimony Seward, NE	LND	I would like to emphasize that it be declared a high consequence area.	Comment acknowledged. The USDOT defines HCAs not Keystone. No change to DEIS.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
192	Gerald Zulauf PO Box 366, Plymouth NE	9	9/13/2007	oral testimony Seward, NE	WAT	So I would hope that they would make sure that they don't put the pipeline real close to the aquifer.	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds springs and other features.
193	Gerald Zulauf PO Box 366, Plymouth NE	9	9/13/2007	oral testimony Seward, NE	LIA	what liability would a land owner have if there was an oil leak or some problem	Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
194	Darla Hall-Emmendorfer 12585 Southwest State Route JJ Hwy., Dekalb, MO	10	9/17/2007	oral testimony Seneca, KS	MOR	I'm in Missouri and there's not a whole lot said about Missouri as far as I'm concerned. And I don't know that there's a whole lot of information that's been passed along about the differences between the crude oil and the natural gas.	Comment acknowledged.
195	Darla Hall-Emmendorfer 12585 Southwest State Route JJ	10	9/17/2007	oral testimony Seneca, KS	CME01	there will not be any property left that is not crossed by an easement from either of these pipelines. by the time that several easements are transversed across your property there's nothing left	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Any future pipeline projects using the same right--way would require additional permits and would be required to complete the permitting process and any environmental review of appropriate state and federal regulatory jurisdictions.
196	Darla Hall-Emmendorfer 12585 Southwest State Route JJ	10	9/17/2007	oral testimony Seneca, KS	UNA	My comment just is the fact that there doesn't seem to be a whole lot of leeway for property owners to make comments or to even have any say so in this process.	Comment acknowledged; landowners were invited to provide initial comments and ideas at scoping meetings in Oct 2006. These comments were included as applicable in the DEIS. Landowners were provided information on receiving and commenting on the DEIS. In addition, interested parties were invited to provide oral testimony at 13 public meetings.
197	Darla Hall-Emmendorfer 12585 Southwest State Route JJ	10	9/17/2007	oral testimony Seneca, KS	VAL	there are no development issues that can be really taken into effect there. Who wants to live on an easement, basically?	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income.
198	Darla Hall-Emmendorfer 12585 Southwest	10	9/17/2007	oral testimony Seneca, KS	RTE04	There doesn't seem to be anything that you can do about once someone decides that they want to transverse across your property. You just have to live with it and that seems to be an issue to me.	Comment acknowledged.
199	Darla Hall-Emmendorfer 12585 Southwest State Route JJ Hwy., Dekalb, MO 44440	10	9/17/2007	oral testimony Seneca, KS	REG	I do know that there are regulations and laws that they have to meet,...there are a lot of checks and balances in that system that, hopefully, create a safe pipeline and that, you know, eliminates any kind of spillage or leakage of the pipeline	Comment acknowledged.
200	Gail Lierz 2180 L Road, Seneca, KS 66538	10	9/17/2007	oral testimony Seneca, KS	CME01	We live on 5 acres and this is going to be the third pipeline that's going through.	Comment acknowledged.
201	Gail Lierz 2180 L Road, Seneca, KS 66538	10	9/17/2007	oral testimony Seneca, KS	NOI02	my biggest concern is we were told there is going to be a pumping station close to our property or on our property and my concern is, is there a noise pollution...We live out in the country to be quiet. I don't want a humming noise 24 hours a day, 7 days a week.	See Section 3.12.2.2, 2.3 and Table 3.12.2-2. Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels.
202	Sam Rottinghaus 1072 168th Road, Seneca, KS 66538	10	9/17/2007	oral testimony Seneca, KS	PUM	I would just like to comment that as an adjacent homeowner to this potential pumping station site I'm a little disappointed in the lack of information that we've been given regarding this proposed pumping station.	Comment acknowledged.
203	Sam Rottinghaus 1072 168th Road, Seneca, KS 66538	10	9/17/2007	oral testimony Seneca, KS	NOI02	I would just like to echo the sentiments of Ms. Lierz who just spoke previously. I understand there needs to be a pumping station...the noise is a huge concern of ours.	See Section 3.12.2.2, 2.3 and Table 3.12.2-2. Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels.
204	Harry Gudenkauf 2204 J Road, Seneca, KS	10	9/17/2007	oral testimony Seneca, KS	ACK	My question is, if everybody here tonight had a good, logical reason why this pipeline shouldn't be built here, what good would it do?	Comment acknowledged no change to DEIS
205	Harry Gudenkauf 2204 J Road, Seneca, KS	10	9/17/2007	oral testimony Seneca, KS	RTE02	isn't there any place else except right here in the State of Kansas, in the State of Missouri or Nebraska or any place that they can put these pipelines?	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone has also committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
206	Harry Gudenkauf 2204 J Road, Seneca, KS	10	9/17/2007	oral testimony Seneca, KS	CME01	Why do we need three of them running right through a small piece of ground?	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14.
207	John Bergman 1029 136th Road, Seneca, KS	10	9/17/2007	oral testimony Seneca, KS	LIA	I don't know why they need an above-ground valve right underneath power lines. what would happen in a ice storm or something that those power lines should break and land on that valve? Would it fry the valve, cause an oil leak?	Keystone has been notified of this potential issue and is assessing whether relocation of the valve is advisable.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
208	John Bergman 1029 136th Road, Seneca, KS	10	9/17/2007	oral testimony Seneca, KS	FLD	They just went through, blocked all the terraces, the water went over the terraces, eroded it, backed the ground.	Comment acknowledged. Keystone has agreed to have "all water body crossings ... assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration ... design of the crossings will also include the specification of appropriate stabilization and restoration measures." Provided that Keystone's definition of "qualified personnel" requires that they have studied natural river processes, they can be expected to specify crossing depths, channel and bank stabilization and riparian restoration measures that will minimize flooding and erosion hazards.
209	John Bergman 1029 136th Road, Seneca, KS	10	9/17/2007	oral testimony Seneca, KS	SOI	The next day they were out there with dozers just back and forth packing the ground and I'm supposed to raise 100 percent on that temporary easement next year of crops and I don't think I can raise that in five years time.	From Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation."
210	Harold Williams 411 Wind Road, Harrington, KS	11	9/18/2007	oral testimony Abilene, KS	VAL	there was a plan of something very important to be in that route and one of those plans was a rock quarry that we would have been able to establish. Not only would it affect us personally by the finances, but also the area would not be able to get the gravel that they normally would be getting from that area.	A gravel removal or rock quarry operation could still be conducted as long as the permanent right of way is outside of the planned excavating. We need more information on the exact location of the quarry to determine any potential impacts of the Keystone pipeline. No change to DEIS.
211	Phyllis Perry 1115 Quail	11	9/18/2007	oral testimony Abilene, KS	LND	you did comment about the loss of native grasslands and in the vegetation area and part of it that bothered me is that the natural grasslands take 100 years to recover	The development of prairie sod occurs over decades. While prairie grasses may be restored to the trenched site the development of prairie sod may require more than 100 years.
212	Phyllis Perry 1115 Quail	11	9/18/2007	oral testimony Abilene, KS	OIL	I'm concerned about leaks, of course, and in the mitigation process	If a leak occurs from the Keystone pipeline onto a private property and is not due to the negligence of the property owner, Keystone will clean up the property and restore it to the same condition as the similar but unaffected property nearby (i.e., to baseline conditions).
213	Phyllis Perry 1115 Quail	11	9/18/2007	oral testimony Abilene, KS	LIA	will there be a bond put up to assure that the leaks will be handled properly with money that might have to -- maybe that may go in your easement. I would want assurance that the pipeline was still taken care of and not just left there to deteriorate in the future.	The key regulation for pipeline spill response is 49 CFR Part 194 – "Response Plans for Onshore Oil Pipelines". Under Part 194.115, Response Resources, Operators must submit a plan, and must certify that they have response resources sufficient to respond to the worst case oil spill. Ensuring the necessary resources are available "by contract or other approved means" provides equivalent or better protection than bonding. Bonding just covers the finances, that does not mean that the needed resources are actually trained and available. Under this rule they need to "ensure" actual resources in a given time frame.
214	Bryan Evans 1878 24th Road, Green, KS	11	9/18/2007	oral testimony Abilene, KS	RTE05	The pipeline, proposed pipeline route is going real close to my house and I just have concern that my sewer system which will be going through,	Keystone has committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
215	Bryan Evans 1878 24th Road, Green, KS	11	9/18/2007	oral testimony Abilene, KS	WAT	if I don't move it, and my well is also close to the pipeline.	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds springs and other features.
216	Ron Benson 1869 19th Road, Clay Center, KS	11	9/18/2007	oral testimony Abilene, KS	RTE05	And I also have a concern of how close the pipeline will be in proximity to our household, it's very close, running through our sewer system	Keystone has committed to working with landowners to find the best route though their indiciduals properties, within the constrants of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
217	Ron Benson 1869 19th Road, Clay Center, KS	11	9/18/2007	oral testimony Abilene, KS	WAT	and be close to our water well.	Keystone has selected the preferred route alignment based on physical and ecological constraints. Keystone will work with individual landowners to identify feasible minor reroutes such as avoiding farm ponds springs and other features.
218	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	WAT	My primary objection to it has to do with the effect it would have on riparian areas that are adjacent to the creek that runs through my land. And it's a general concern to all waterways that this project will have to cross.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. By following these standards, the likeliness of a spill or leak occurring is remote. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of the oil product will allow Keystone to successfully contain and mitigate spills or leaks. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would provide compensation for the damages.
219	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	ORG	farmed it organically	Keystone has not made special commitments relating to construction and operations on organic farms. However, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." Maintaining "organic" status and the associated health of the land is arguably an essential aspect of the productivity of organic farms. Any owner of an organic or clean-water farm would be wise to ensure that their easement agreement with Keystone takes into account the particular nature of their farm's productivity.
220	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	LND	taken a great interest in the woods that is on either side of the creek, which we own about a quarter mile of it, and utilize the woods for our fuel to heat our home.	Keystone would compensate landowners for lost productivity of land on a case-by-case basis. This would include lost productivity for fuel wood production from wooded areas. Keystone's Mitigation Plan (Appendix B to the EIS) describes mitigation procedures for construction in wooded areas. Keystone would provide landowners with the option of salvaging any removed materials.
221	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	ERO	to fight creek bank erosion is by fostering tree growth... trees and the root systems that they have are still the best soil-holder along sensitive creek bank areas.	Comment acknowledged. Keystone has agreed to have "all water body crossings ... assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration ... design of the crossings will also include the specification of appropriate stabilization and restoration measures." Provided that Keystone's definition of "qualified personnel" requires that they have studied natural river processes, they can be expected to specify crossing depths, channel and bank stabilization and riparian restoration measures that will minimize flooding and erosion hazards.

TABLE 1 COMMENTS TAKEN FROM ORAL TESTIMONY

Comment Number	Commentor Name	Transcript Number	Date	Comment Method	Issue Code	Comment	DOS Response
222	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	FLD	50 foot easement that will never be allowed to have trees upon it for reasons of monitoring the pipeline and access to the pipeline. I feel like that this is going to very much compromise sensitive flood-prone areas	Comment acknowledged. Keystone has agreed to have "all water body crossings ... assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration ... design of the crossings will also include the specification of appropriate stabilization and restoration measures." Provided that Keystone's definition of "qualified personnel" requires that they have studied natural river processes, they can be expected to specify crossing depths, channel and bank stabilization and riparian restoration measures that will minimize flooding and erosion hazards.
223	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	ORG	designation of our farm as a clean water farm. best management practice is going to be confounded by this project	Keystone has not made special commitments relating to construction and operations on organic farms. However, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." Maintaining "organic" status and the associated health of the land is arguably an essential aspect of the productivity of organic farms. Any owner of an organic or clean-water farm would be wise to ensure that their easement agreement with Keystone takes into account the particular nature of their farm's productivity.
224	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	ENR	comprehensive national energy policy that would basically deal with the conservation of the energy resources that we have available	Conservation and energy independence would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
225	Harry E. Bennett 1761 Remington Road, Marion, KS	12	9/19/2007	oral testimony El Dorado, KS	GBW	use a lot of natural gas to cook the oil out of the sands.	Comment acknowledged. Analysis of the retrieval of tar sands is outside of the scope of this EIS. The tar sands would likely be mined or acquired even in the absence of the Keystone Project and would be refined or sent to market by an other conveyance. No change to DEIS.
226	Yvonne Lee 135 North Arthur, El Dorado, KS 67042	12	9/19/2007	oral testimony El Dorado, KS	NOI02	very interested in the part that's 5.2 Air and Noise in the document. So my question was how they come up with 55 decibels. there's no amount of money that's going to make up for that quiet being gone in our farm	See Section 3.12.2.2. Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels.
227	Yvonne Lee 135 North Arthur, El Dorado, KS 67042	12	9/19/2007	oral testimony El Dorado, KS	VAL	it does affect at some point if they want to sell their land how much their land -- or their home is going to be worth.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income.
228	Yvonne Lee 135 North Arthur, El Dorado, KS 67042	12	9/19/2007	oral testimony El Dorado, KS	REG	noise assessment survey...So I'm wondering is that going to be a one-time thing or is that going to be monitored over a period of time?	Individual jurisdictions along the pipeline corridor would be responsible for monitoring compliance with local noise ordinances. Some potential mitigation measures discussed in the DEIS have been accepted by the Applicant and will be included in a revised CMR prior to issuance of the Presidential Permit. These mitigation measures would be applied on all construction spreads along the pipeline corridor. Other potential mitigation measures discussed in the EIS may be included as conditions to individual permits issued by regulatory authorities with jurisdiction at various locales along the proposed corridor. The Applicant has committed to an Environmental Inspector to ensure compliance with the CMR during construction. Permitting agencies would also provide monitoring during construction and operation in their specific jurisdictions.
229	Yvonne Lee 135 North Arthur, El Dorado, KS 67042	12	9/19/2007	oral testimony El Dorado, KS	PUM	It also mentions several times that it wouldn't affect it because these are remote areas. Well, this pumping station is less -- is about two miles from Hope, which has like 500 people in it. It's not really a remote area. So I think that's a real concern, that just because maybe there aren't thousands of people involved here, it still affects a native environment and makes a really big difference.	Comment acknowledged
230	Dr. Andrea Hunter Tribal Historic Preservation Officer for Osage Nation	13	9/20/2007	oral testimony Ponca City, OK	ACK	I have not been able to make those meetings and just wanted to make an appearance at this meeting to formally state that we are interested in the consultation process and are very interested in participating programmatic agreement that you are in the process of putting together. I just wanted to make the formal announcement that we definitely want to be involved in that programmatic agreement.	Comment acknowledged

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
1	Arlynn Troftgruben	1	8/5/2007	email	FAV	Yes we are in favor of the pipeline going threw (sic) our portion of the land we rent.	Comment acknowledged
2	Dorothy Brown	2	8/30/2007	email	FAV	According to a mailing that I received I am supposed to be complaining about TransCanada's harassment of SD landowners. However the people that handled our transaction treated us with great dignity and in a very professional way. We have also talked to friends and neighbors and none of them have complained about how they were treated.	Comment acknowledged
3	David Halpin - IL SHPO	3	8/14/2007	letter	CUL05	I have read the Cultural Resources section of the DEIS (3.11-1 through 3.11-3) and the language and content of this section are acceptable to this office.	Comment acknowledged
4	Jon Kruse	4	8/8/2007	email	RTE01	the proposed as-filed TransCanada pipeline crosses 12 inches below a total of 4 City Water mains. One water main carries treated water. Three water mains carry untreated source water.	Keystone's proposed route would pass beneath four water lines associated with the city of Seward. These pipelines are composed of PVC and ductile iron pipe. At a minimum, the Keystone pipeline would cross 12 inches below these water lines consistent with the utility crossing agreement. Keystone conducted an evaluation of the probability of the proposed pipeline negatively impacting Seward's water main utility lines. According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron near Seward was determined to be highly improbable.
5	Judith Deel - MO SHPO	5	8/23/2007	letter	FAV	the methodology for the REX West pipeline project was appropriate for use for the Keystone pipeline project, and that cultural resource surveys conducted for REX could be utilized for Keystone, in those instances where the two project corridors were in close proximity.	Comment acknowledged
6	Janie Capp	6	9/12/2007	letter	RTE07	I am enclosing the map with the reroute that John Capp and I were tying to tell you about last night in Michigan please look at them and consider them. The western one is the one I believe about 8 miles west and 50 miles long the other I don't really know to much about.	Comment acknowledged. An analysis of the Fordville Alternative is presented in section 4.0 of the FEIS.
7	Jerry Folta	7	8/3/2007	website	RTE02	I also noticed how your proposed route takes in very little state or federal ground and goes after the private land owner's ground. Why is that the case? Finally, all ground around Troy MO has development potential. Especially gently rolling mostly open land like ours that you desire to easily bury your pipeline in.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. In terms of land ownership, the vast majority of land along the general project route is privately owned. It would be difficult to plan and construct a pipeline of this length through the affected states without affecting a large amount of private land. For development considerations, Keystone reviewed existing and future development proposals as they have been submitted at to counties along the route, and found that no pending development is planned for the project route.
8	Ramona Klein	8	6/24/2007	website	OIL	I am concerned about the potential environmental disaster the Keystone Pipeline Project could cause on the proposed N. D. route. Any oil leaks are going to get into the Sheyenne River; there is no way around that.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
9	Russ Rosenthal	9	9/6/2007	website	FAV	This is a great project for So. Illinois the Midwest and the nation. Please double your efforts to get this project approved.. So. Illinois needs this and all other proposed projects on the drawing board. I pledge my support for your efforts as we need this energy development, construction, and job opportunity for our area... I am a resident of Nashville Illinois and a strong supporter of So. Illinois Development. 618-758-1021	Comment acknowledged
10	Ramona Klein	8	6/24/2007	website	RTE03	Please help by moving it either to western ND or to the I29 corridor where spills can be contained. Thank you.	Keystone evaluated a variety of potential routes for the pipeline including consideration of routes to the west of the proposed route. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Routes to the west of the proposed route would increase overall pipeline length to meet project objectives and would be inferior to the balance of objectives offered by the proposed route. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
11	Marilyn Hockman	10	8/17/2007	phone	RTE04	I do not want the pipeline our farm	Keystone has committed to working with landowners to find the best route though their individuals properties, within the constraints of the designated corridor and project design, to avoid sensitive areas and recognize site constraints. Mitigation measures and permit requirements are expected to reduce impacts to farmland and allow farmed areas to return to use.
12	Marilyn Hockman	10	8/17/2007	phone	RTE05	She was concerned that the keystone pipeline was near the COOP and the COOP had several pull behind Anhydrous Ammonia tanks for use by farmers to fertilize their fields. The COOP also had some large vertical propane tanks on the property. South of the COOP was a facility where she thought they made Anhydrous Ammonia and the pipeline was planned along the east edge of that facility and she thought that was too close.	Comment acknowledged.
13	C. Bergsrud	11	8/3/2007	letter	OIL	This pipeline proposes a great risk to many water sources in North Dakota for logically the pipeline is proposed to go underneath the Sheyenne river and others but focus just on Sheyenne river, if the potential pipeline were to have damage to it under or near the Sheyenne river this would cause the oil to directly flow naturally with the river, thus going to Fargo, thus going to Grand Forks, thus going to Lake Winnipeg…this is a great population of people that now have the potential to be drinking, showering, bathing, swimming, etc… with contaminated water…	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
14	C. Bergsrud	11	8/3/2007	letter	RTE03	No to the project proposed in this current location to many water sources to valuable of land…an alternative to this would be to place the proposed pipeline on the west side of the state so that it goes and hooks up with north Dakota wells, from there then to its destination… but really I believe strongly that the state of North Dakota should not be a carrier for this major of a project, a different state for the routing must be taken into action	Keystone evaluated a variety of potential routes for the pipeline including consideration of routes to the west of the proposed route. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Routes to the west of the proposed route would increase overall pipeline length to meet project objectives and would be inferior to the balance of objectives offered by the proposed route.
15	Janie Capp	12	8/23/2007	email	OIL	First there is of course the spills, I would like to make you aware that while we were having our hearing in Park River on this project there was a major spill in Burnaby, B. C. at least 50 homes had to be evacuated; the oil crept on to the water; long term toxic effects on wildlife So spills are real and very damaging plus costly to clean up, if ever. Plus a leak will render the land sterile.	Please refer to Section 3.13, Reliability and Safety, as well as Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis.
16	Janie Capp	12	8/23/2007	email	GBW	Then there is the global warming/ green house gases. To get at tar sands, companies use huge amounts of natural gas-enough to heat 4 million homes last year alone to generate steam that is pumped deep under ground. From start to finish the process generates three times the global warming emission of conventional gasoline.	The scope of the DOS Keystone EIS is restricted to potential environmental impacts resulting from pipeline construction and operation from the international border southward into the lands of the United States. Development of tar sands in Alberta are addressed under relevant Canadian and provincial laws and regulations.
17	Paul Matthews	25	9/24/2007	email	WAT	impact data for a ND event could be understated since soils in this region can be frozen for three months or longer during a year. This would suggest toxic elements in bitumen could reach ground water resources at a frequency more than the document suggests.	Factors affecting oil spill impacts to the environment including groundwater resources are discussed in section 3.13.4.1 of the DEIS. Seasonal variations of these impacts are also discussed in this section of the DEIS.
18	Janie Capp	12	8/23/2007	email	TAX01	People are saying that the pipeline will benefit ND in the way of Tax Revues. (Which I doubt when you figure the costs to repair roads, clean up leaks, and the liability for ND that goes with it.) but why should us North Dakota's whom have paid taxes all our life's to the state suffer because of it?	Comment acknowledged. The proposed project would generate tax revenues for local and state jurisdictions as well as the federal government. The major state and local incremental tax revenue would be property taxes, based on the assessed value of Keystone Project facilities and applicable tax rates. See Table 3.10.1-6 for project-related tax revenues for each affected county. Procedures for oil leaks or spills are addressed in the Keystone Pipeline Emergency Response Plan. Road maintenance and repair procedures will be negotiated between Keystone and each local or state agency, as appropriate. No change to DEIS.
19	Janie Capp	12	8/23/2007	email	ENR	The state of ND has a lot of potential to produce our own energy. (Wind- towers , Biofuels) for example. That will be taken away if Keystone takes productive farm land away.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
20	Janie Capp	12	8/23/2007	email	CME01	It will not be just one pipeline but several. As the amount is to great for one pipe so there goes another pipe then you need another to bring the refined oil back up so there is the 3rd. So there goes a quarter of land. A Keystone map shows how the pipeline lines up perfectly with an existing pipe going to Texas.	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Additional pipelines, include additional lines in the same easement would be subject to additional appropriate permitting and environmental review under NEPA whenever jurisdiction of a federal agency occurs.
21	Janie Capp	12	8/23/2007	email	ACK	Is that because they can get cheap labor from the Gulf of Mexico to refine it and then send it back to Canada?	As stated in Section 1.2 of the DEIS: "The primary purpose of the proposed pipeline is to transport incremental crude oil production from the WCSB across the border to meet the growing demand by refineries and markets in the United States."
22	Janie Capp	12	8/23/2007	email	RTE03	Although the Keystone charts and graphs are impressive and I am sure their representatives have very high college degrees they do not know the lay of the land like the landowner does. They know where every rock is, low spot that doesn't drain, pothole, etc. The owner knows his land like the back of his hand. So how can Keystone come in and say this is the best place for a pipeline?	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone will work with the individual landowner to find the best route though their property to avoid sensitive areas, but within the constraints of the project design.
23	Ken Emmel	13	8/27/2007	email	UNE	This pipeline is unnecessary. A pipeline already exists starting at the same location in Canada and terminating at the same location routed through Montana, Wyoming, Nebraska, and Kansas.	Use of this pipeline would not meet the Purpose and Need for the Keystone Pipeline Project as stated in section 1.2
24	Ken Emmel	13	8/27/2007	email	RTE03	If they can't use this existing pipeline, then any new one should follow the same route using the same rights-of-way. If that is not possible, then current transportation rights-of-way should be used. This would be much more prudent than jeopardizing more prime farmland, rare ecosystems, precious parkland, and vital aquifers.....	Keystone evaluated a variety of potential routes for the pipeline including consideration of routes to the west of the proposed route. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Routes to the west of the proposed route would increase overall pipeline length to meet project objectives and would be inferior to the balance of objectives offered by the proposed route. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
25	Ken Emmel	13	8/27/2007	email	OIL	…. jeopardizing more prime farmland, rare ecosystems, precious parkland, and vital aquifers to the inevitable spills which occur. There is too much of an environmental risk from these pipelines in the devastating effects of oil spills.	Please refer to Section 3.13, Reliability and Safety, as well as Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis.
26	Ken Emmel	13	8/27/2007	email	CME01	Our lands are already eaten up by too many easements and pipelines as it is.	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Additional pipelines, include additional lines in the same easement would be subject to additional appropriate permitting and environmental review under NEPA whenever jurisdiction of a federal agency occurs.
27	Jerry Folta	7	8/3/2007	website	MOR	When is the bear hunting season in Missouri?	Revised sentence "Black bear are common only in southeastern Missouri, where they are hunted." to remove "where they are hunted." from Section 3.6.2 on page 3.6-1.
28	Juanita Berg	14	8/4/2007	website	VAL	I need to know when I will hear about the value of my property	Easement negotiations between Keystone and individual landowners are not within the scope of the EIS.
29	M. Paaverud - ND SHPO	15	8/13/2007	letter	MOR	Project re-routes and other ancillary facilities and infrastructure remain to be completed and reported…we look forward to further consultation on the project.	The FEIS provides additional information on proposed reroutes, access roads, temporary work areas, powerlines and transformer stations.
30	M. Paaverud - ND SHPO	15	8/13/2007	letter	EDT	One correction is found on pg. 3.11-3, fourth para. Last line: Bleier et al. (2006a).	Comment accepted; correction made to DEIS Section 3.11.
31	Anonymous #1	16	9/11/2007	website	OIL	DO NOT WANT MY NAME AND ADDRESS PUBLISHED. I own land in Sargent County North Dakota. I received a letter from The U. S. Dept of State Bureau of Oceans & International Environmental & Scientific Affairs In early August. I know that means the Keystone Pipeline will cross my land if I allow it. I am very concerned that in years to come, the pipeline will break & ruin my farmland, so that no crops can be grown on it. I depend on it for my living. This would be a GREAT DISASTER for me!!!!!	Please refer to Section 3.13, Reliability and Safety, as well as Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis.
32	Edward Cable	18	9/21/2007	email	LND	I'm opposed to the routing and siting of the TransCanada-Keystone Pipeline because of the long range impacts it will have on the land, the people, the environment, and the groundwater of the area.	Comment acknowledged; no change to DEIS
33	Edward Cable	18	9/21/2007	email	WAT	I'm also concerned that the TransCanada-Keystone Pipeline crossing south Yankton, South Dakota will fail and impact the water quality of the Missouri River from Yankton to Sioux City and beyond.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
34	Edward Cable	18	9/21/2007	email	HYP	I request, therefore, that the agency revise the scope of the EIS to include a full analysis of the Hyperion Oil Refinery and the pipeline corridor that will connect TransCanada-Keystone Pipeline to the refinery as noted in Hyperion's public interview on 9.20.07.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
35	Edward Cable	18	9/21/2007	email	HYP	Refer to page 1-18: Add refinery permits required.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
36	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	WAT	Without potable water for our visitors, artist, students and campus gardens and grounds, the Granary Rural Cultural Center would have to close its doors	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Response actions are designed to contain the spill prior to entry into groundwater The spilled or leaked oil product will be recovered and groundwater contamination, if any, will be cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate vertically to underlying aquifers.
37	Edward Cable	18	9/21/2007	email	WET	Refer to page 3.4-15: The wetlands mitigation should include the 6:1 ratio.	Added the following to Section 3.4.3: "Many state and federal agencies have expressed concerns and recommendations for compensatory mitigation of wetland losses. The requirements for compensatory mitigation would depend on final decisions on jurisdictional delineations." This statement is followed by the recommendation for Keystone to develop a plan to compensate for permanent wetland losses that includes various recommendations provided by several agencies (pages 3.4-15 to 3.4-16).
38	Edward Cable	18	9/21/2007	email	WAT	Refer to pg. 3.7-9 The 50' distance at the bottom of the page should be 100' (Note this is the recommended distance from water bodies for staging areas)	The USACE of Engineers is responsible for permitting actions at and near water body crossings. As part of the permitting process, the USACE solicits the input of resource agencies such as USFWS. The recommended distance from the active channel to the staging area is a MINIMUM of 50 feet and 100 feet whenever practicable, as suggested by the USFWS. USFWS will negotiate with USACE and Keystone to determine the actual setback distance at each water crossing.
39	Edward Cable	18	9/21/2007	email	MOR	Refer to page 3.8: In this and other sections, any required further studies should be done as a part of this report and reviewed prior to its approval.	Results of supplemental survey reports received during September 2007 will be incorporated into Section 3.8 of the FEIS. Please note that a separate Biological Assessment has been prepared and that all ESA reports are reviewed by the USFWS.
40	Richard Starkey	17	9/19/2007	phone	RTE03	He recommends an alternative to the west around HWY 32 that was original choice but moved or along interstate 20	Keystone evaluated a variety of potential routes for the pipeline including consideration of routes to the west of the proposed route. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Routes to the west of the proposed route would increase overall pipeline length to meet project objectives and would be inferior to the balance of objectives offered by the proposed route. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
41	Richard Starkey	17	9/19/2007	phone	OIL	There is a Valley City issue - regarding location of pipeline. It cannot be choice Keystone desires. His land is 3 miles from Valley City and water drains west to Valley City. Oil would run down hill towards Valley City to Lake Ashtabula. There is a 250 foot elevation difference. Keystone testified flat (it is not flat).	If a spill or leak occurs, crude oil will flow downhill via overland flow. Oil will spread laterally in flat terrain and will pool in depressions. According to Keystone, dispersal of crude oil is generally limited to the trench or within a few hundred feet of the trench. Oil can travel further in steep terrain and channels, but without water to convey the crude oil, dispersal is limited to no more than 0.5 mile even with large spills (ENSR, 2007). 250 vertical feet over three miles is only a 1.6% slope and would not be considered steep terrain. Based on this it is unlikely that oil transported by overland flow would reach Valley City and Lake Ashtabula.
42	Richard Starkey	17	9/19/2007	phone	ENR	He also wants to know about Alternative fuels and to consider Ethanol - American supply to fuel Am. markets	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
43	Gloria Jean Patterson	19	9/23/2007	email	WAT	As filed the Trans Canada gas pipeline route goes through the well fields of the city Seward water supply and is located 12 inches under 4 water mains and possibly jeopardizes the water supply of everyone living and working in Seward.	Keystone's proposed route would pass beneath four water lines associated with the city of Seward. These pipelines are composed of PVC and ductile iron pipe. At a minimum, the Keystone pipeline would cross 12 inches below these water lines consistent with the utility crossing agreement. Keystone conducted an evaluation of the probability of the proposed pipeline negatively impacting Seward's water main utility lines. According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron near Seward was determined to be highly improbable.
44	Janie Capp	20	9/21/2007	email	RDS	I do not believe the draft EIS takes into effect the adverse effects from the heavy machinery, increase in traffic on small twp. gravel roads.	Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads. As discussed in the section, To minimize the effects of large machinery and transport trucks on local roads, traffic flows, and related services, Keystone would use major highways as much as possible to transport slow-moving, heavy construction equipment to the spread areas. Damage to existing roads also would be minimized by following permit requirements for maximum vehicle loads and width limits. Any soil remaining on the road surface from construction equipment and activities would be removed, and any damage to roads would be repaired by Keystone to preexisting conditions or better, following construction.
45	Gloria Jean Patterson	19	9/23/2007	email	RTE01	If the proposed pipeline is not moved to the alternate proposed route, I would not want to move to Seward. Also, the current pipeline route through the city well fields would eliminate from my consideration for purchase the new senior duplexes, currently under construction and also proposed next year for construction in Seward. Purchasing any other homes in Seward would also be entirely out of the question because of the pipeline proposal.	Comment acknowledged.
46	Janie Capp	20	9/21/2007	email	AIR01	Concerned about the toxic chemical released into the air from construction machinery	See Section 3.12.1.2 - The project is not hazardous air pollutant major, any hazardous air pollutants are minimal.
47	Janie Capp	20	9/21/2007	email	NOI01	Also our livestock when the helicopters fly over close to the ground who is going to round up our cattle and the neighbors goats after they get spooked and break out?	Noise does affect cattle; however, construction impacts will be intermittent and short-term - see Section 3.12.2.3.
48	Janie Capp	20	9/21/2007	email	LIA	Who will pay when we have to round up our livestock?	Easement negotiations between Keystone and individual landowners are not within the scope of the DOS Keystone EIS.
49	Janie Capp	20	9/21/2007	email	RTE06	In fact the study that is in the draft isn't even the proposed route that Keystone is now planning it was one of the previous ones.	Keystone has filed a number of minor route refinements to the proposed pipeline route. These modifications have been reviewed and any resulting changes in impact assessment are included in the FEIS.
50	Janie Capp	20	9/21/2007	email	WAT	The proposed route also does not take into consideration the private wells that many farms have.	Protection of private wells within pipeline easements is an issue negotiated between Keystone and each individual landowner, including compensation and liability for well head damage or water supply loss. To reduce the potential for leaks or spills, Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements.
51	Janie Capp	20	9/21/2007	email	MOR	Also it has not done a thoroughly study of the Fordville Aquifer. This draft EIS is NOT a thoroughly study of ALL the effects that will happen.	Additional information regarding the Fordville aquifer has been added to Section 3.3.1.1 and Table 3.3.1-1.
52	John Davidson	21	9/24/2007	email	HYP	In my testimony I urged your Department to consider the environmental and social effects of the Hyperion Refinery in Union County, South Dakota as a connected action and a cumulative effect of the Trans Canada-Keystone Pipeline. The center of my argument was that the Hyperion Refinery is not, in any way, speculative, and that it is entirely dependent upon completion of the Pipeline.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
53	John Capp	22	9/17/2007	email	GBW	With all the chemicals and toxic poisons in it and the global warming it will produce it is a very poor choice for our state and the whole country.	The scope of the DOS Keystone EIS is restricted to potential environmental impacts resulting from pipeline construction and operation from the international border southward into the lands of the United States. Development of tar sands in Alberta are addressed under relevant Canadian and provincial laws and regulations.
54	John Capp	22	9/17/2007	email	RTE03	Jim Horner the State Water Geologist said the 50 mile reroute further west is better.	Keystone evaluated a variety of potential routes for the pipeline including consideration of routes to the west of the proposed route. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Routes to the west of the proposed route would increase overall pipeline length to meet project objectives and would be inferior to the balance of objectives offered by the proposed route.
55	John Capp	22	9/17/2007	email	MOR	As far as I can tell the draft EIS has about 3 sentences about the Fordville Aquifer.	Additional information regarding the Fordville aquifer has been added to Section 3.3.1.1 and Table 3.3.1-1.
56	John Capp	22	9/17/2007	email	WAT	if there is a breakout in the coulee North of Lankin it would take about 20 minutes to get to Hwy. 32. then to the Aquifer. As there is a man made legal drain beside Hwy. 32 that goes directly to the bottom of the Fordville Aquifer.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
57	John Capp	22	9/17/2007	email	LND	The draft says the pipeline will have minimum impact. How? When you dig up the ground and rip out trees to put in a 30" pipe?	See section 3.5 for environmental setting and impacts associated with terrestrial vegetation.
58	John Capp	22	9/17/2007	email	WAT	We have our own wells that are shallow and I don't believe they are registered or that the officials know where the are. We also have a very high water table. Our water is very important to us and should be very important to our state and its citizens.	According to Keystone, no private wells occur within the proposed ROW of the pipeline. If wells did occur within the ROW, protection of these wells would be an issue negotiated between Keystone and each individual landowner, including compensation and liability for well head damage or water supply loss. To reduce the potential for leaks or spills, Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements.
59	John Capp	22	9/17/2007	email	LIA	At the meetings in Bismarck, Keystone Engineer stated that if someone falls into the pipeline with some heavy equipment and causes damage or a leak Keystone is liable, which I doubt very much . Our insurance company will not cover us on this pipeline. Will Keystone be required to put up some sort of bond to make them liable for certain problems with their line on some one else's property?	Keystone designed the pipeline trench and cover depths to prevent accidental impact to the pipeline during normal agricultural activities. Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
60	John Capp	22	9/17/2007	email	ENR	This is not a solution to our energy problem.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
61	John Andrejewski	23	9/21/2007	email	LIA	I have land in Lincoln County, MO. thru which the pipe would pass and installation will result in removal of approx. 2100 feet by 75 feet of mature timber in prime condition. The trees will be a loss to the environment and if they must be removed, I'll demand payment of their market value in advance and 100 % cleanup of all stumps and branches as well as a market value easement fee covered by an agreement approved by my attorney.	Easement negotiations between Keystone and individual landowners are not within the scope of the DOS Keystone EIS.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
62	John Andrejewski	23	9/21/2007	email	SAF	I have a home within 150 feet of the proposed pipeline and am concerned about safety for my family.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. .Keystone's Draft Emergency response Plan (Appendix C) provides details regarding spill prevention, detection, and response. The plan will be finalized and approved by all appropriate agencies prior to pipeline operations.
63	John Andrejewski	23	9/21/2007	email	OIL	I am concerned about oil spills	Please refer to Section 3.13, Reliability and Safety, as well as Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis.
64	John Andrejewski	23	9/21/2007	email	RDS	concerned about traffic during construction	Section 3.10.2.1 discusses impacts on local traffic and rural roads. As discussed in the section, In general, impacts on local traffic levels would be of short duration and would be located in rural areas. Pipeline construction schedules typically begin and end outside of peak commuting hours. Keystone's construction contractors would work with state and local transportation authorities to ensure that construction in the parallel areas will not greatly affect traffic conditions. This likely would include conducting major pipeline work during the off-peak traffic hours. Safety measures would be implemented, such as posting signs at open-cut road crossings and the use of flagging personnel to indicate safe passage through construction areas. These measures also would help to minimize traffic disruptions.
65	John Andrejewski	23	9/21/2007	email	VAL	loss in value of land	DEIS text changed to recognize the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of above ground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity. In addition, Keystone will compensate landowners for any crop or other losses they sustain during the construction period.
66	John Andrejewski	23	9/21/2007	email	LND	destruction of trees and environment	Total acreage of upland forest impacted by construction of the Keystone Mainline through Missouri was presented in Table 3.5.5-1 (600 acres in Missouri). Section 3.5.5.2 discloses Keystone project impacts to Vegetation Communities of Conservation Concern including Native Forests and describes mitigation measures for forested uplands and wetlands. Keystone measures which apply to this commenter include "Consult with the landowner to determine whether any trees are of commercial or other value to the landowner. Salvage timber as requested by the landowner. and follow the landowner's desires in the easement agreement regarding the disposal of trees, brush, and stumps of no value to the landowner by burning, burial, or complete removal from any affected property." See Section 3.5-31 to 3.5-33. No changes made to DEIS in response to comment.
67	John Andrejewski	23	9/21/2007	email	RTE04	I would rather the pipe not be routed thru my property.	Keystone has committed to working with landowners to find the best route though their individuals properties, within the constraints of the designated corridor and project design, to avoid sensitive areas and recognize site constraints. Mitigation measures and permit requirements are expected to reduce impacts to farmland and will allow farmed areas to be returned to previous use.
68	Lois Albin	24	9/21/2007	email	VAL	Land values will be negatively impacted by the construction of this pipeline through productive, valuable farmland	Comment acknowledged. DEIS text changed to recognize the fact that studies have shown that pipelines do not reduce overall property values. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity. In addition, Keystone will compensate landowners for any crop or other losses they sustain during the construction period.
69	Lois Albin	24	9/21/2007	email	HUM	There are potential health effects to surrounding communities which should be considered in the draft EIS.	Human health risks and impacts are dealt with in Section 3.13.5.9 and in section 3.13.5.11
70	Lois Albin	24	9/21/2007	email	LND	potential environmental damage to soil, water, and air; there are thousands of acres of prime farmland being affected by this proposed pipeline.	Agricultural land is the primary land use that would be affected by the proposed project. A large percentage of this land is also categorized as prime farmland. In the event that land productivity would be harmed by construction or operation of the pipeline, Keystone would compensate landowners on a case-by-case basis.
71	Lois Albin	24	9/21/2007	email	GBW	With the increase in energy usage required by the refineries, there will likely be increased pollution and therefore increased contributions to global warming;	See Section 3.12.1.3 of the DEIS for impacts related to the retrofit and expansion of the Wood River Refinery. Other refineries that would receive oil from the Keystone pipeline would be held to air emissions requirements of their existing air quality permits.
72	Lois Albin	24	9/21/2007	email	WAT	there is a potential for increased contamination of groundwater if a spill should occur near an underlying aquifer	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
73	Lois Albin	24	9/21/2007	email	LND	There is a significant risk for contamination of prime, productive farmland if this pipeline is constructed	Agricultural land is the primary land use that would be affected by the proposed project. A large percentage of this land is also categorized as prime farmland. In the event that land productivity would be harmed by construction or operation of the pipeline, Keystone would compensate landowners on a case-by-case basis.
74	Lois Albin	24	9/21/2007	email	SOI	soil contamination, compaction, and temperatures of soil can be adversely affected by the pipeline; in the summer temperatures of 70-80 degrees Fahrenheit will adversely impact subsoil moisture conditions.	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
75	Lois Albin	24	9/21/2007	email	ENR	With the increase in technology in the development of alternative energy sources and biofuels, more consideration should be given to these sources of energy	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
76	Lois Albin	24	9/21/2007	email	PIP	The use of thinner steel for the pipeline which was granted by the Federal Pipeline and Hazardous materials safety Administration in rural areas will result in a lower safety factor.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
77	Lois Albin	24	9/21/2007	email	HYP	Hyperion is building a refinery and is looking at the proposed TransCanada pipeline which will cut a path near Yankton as a source of the oil the plant will process. "TransCanada is one of our choices," Huddleston said. Therefore, the draft EIS should reconsider the implications of the pipeline along with the construction of a refinery.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
78	Lois Albin	24	9/21/2007	email	VAL	Financial loss for many family farms will likely be the result if this pipeline is constructed.	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
79	Lois Albin	24	9/21/2007	email	PIP	re there scientific studies to prove that the type of steel used in the pipeline will not be corroded by alkaline soil prevalent in parts of South Dakota?	The Keystone pipeline will be designed and constructed in conformity with federal regulations designed to promote pipeline integrity and safety. The pipeline will be coated to withstand corrosion, and inspected regularly to check for signs of damage.
80	Paul Matthews	25	9/24/2007	email	OPP	This scoping opportunity was not afforded to the landowners affected "HECLA Alternative route" as this route was not identified until January 2007. The 2007 date passed the scoping period deadline of November 30, 2006 and left those landowners on the HECLA alternative route less of an opportunity to participate.	Persons concerned with the Hecla Alternative Route had the opportunity to comment specifically on this route during the public comment period for the DEIS and at the public comment meetings held in September 2007. No change to DEIS.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
81	Paul Matthews	25	9/24/2007	email	UNA	Forman Public Library, did not receive the paper copy of the draft EIS until approximately August 29, 2007. This allowed only 2 weeks for this community to share the one paper copy available before the public comment period meeting scheduled at Lisbon ND on September 12. The paper copy also included a CD which contains appendices available only by securing additional software (Adobe Acrobat Reader) before it reviews could begin. A landowner requested CD directly from State Department on self addressed postcard with no reply by September 17, 2007 (less than 7 days before deadline.	Letters were sent to almost 6,000 landowners announcing the availability of the DEIS. The letter incorporated a card that if returned in a timely manner would ensure that a DEIS copy would be received. For non-landowners and other interested parties, copies of the DEIS were sent to libraries at reasonable intervals along the corridor. The Federal Register announced the availability of the DEIS on Aug 10, 2007. The DEIS was posted on the website in PDF format and the appendices were also provided in that format with the hard copy in order to support the paperwork reduction act and minimize the use of paper. PDF is a widely used format for disseminating documents to users of a wide variety of computer hardware. Acrobat Reader, used to open the PDF documents, is easily downloaded for free from the Adobe site. However, we will put Adobe Reader on the CD with the docuemnt for easy access.
82	Paul Matthews	25	9/24/2007	email	EDT	Appendix Q, Figure 2.1 – 10 07 -26 North Dakota. PDF is not accurate. This map indicates a previous route in Sargent County, ND.	Comment acknowledged. The FEIS will incorporate up-to-date alignment sheets.
83	Paul Matthews	25	9/24/2007	email	LIA	The Document does not include procedures if Keystone does not comply to landowner's complaints.	Easement negotiations between Keystone and individual landowners are not within the scope of the DOS Keystone EIS.
84	Paul Matthews	25	9/24/2007	email	WAT	Portions of the Sargent County route cross the abandoned Garrison Diversion Irrigation project. Keystone should review that proposed irrigation project's plans for the possibility that it may be reopened. Some of those plans included open waterway distribution systems and tile drainage. Keystone should consult and identify with landowners' future drainage opportunities that may be adversely impacted by pipeline before easement procurement.	Any disruptions to landowner tile drainage systems are addressed in easement negotiations between the landowner and Keystone. Easement consultation and negotiation is not a part of the environmental assessment. No change to DEIS.
85	Paul Matthews	25	9/24/2007	email	VAL	Those affected landowners could utilize the irrigation component and a buried pipeline could affect the development of their properties.	As noted in section 3.9.3.2, "Agricultural Land," Keystone would implement a Mitigation Plan to minimize adverse effects on agricultural activities. Measures include, among others, those which will allow for irrigation to continue during construction when feasible and mutually agreeable to Keystone and landowners; avoiding initial disruption of surface drainage, installation of trench breakers on slopes at regular intervals to prevent water movement and erosion, and allowance for continued operation of waterlines during construction. If interruption of waterline services leads to agricultural resource damage, Keystone would provide reasonable compensation to landowners for lost productivity.
86	Paul Matthews	25	9/24/2007	email	EDT	Appendix Q, Figure 2.1 – 11 07 -26 South Dakota. PDF is not accurate. This map indicates a previous route in Brown County, SD.	Comment acknowledged. The FEIS will incorporate up-to-date alignment sheets.
87	Paul Matthews	25	9/24/2007	email	SOI	Appendix F, Soil Associations along the Proposed Keystone Project. The soil identified in North Dakota MP 204.3 – 216.9 "Hecla- Hammer – Ulen" and the related attributes of "prime farmland" does not appear reasonable or accurate. Example – prime farmland 9%?	The percentages of "prime farmland" and other characteristics were derived from NRCS soils databases, and refer to the association as a whole, not just the portion of it that lies under the proposed pipeline route.
88	Paul Matthews	25	9/24/2007	email	OIL	The document doesn't envision or describe a problem of a small (less than 2%) leak that evades the SCADA detection system in rural/remote areas where human sight or smell is the relied upon systems of detection.	Please see section 3.13.4.1 and Appendix C for discussions regarding the detection of small leaks.
89	Paul Matthews	25	9/24/2007	email	WAT	The document also doesn't describe a possible leak in rural/remote areas during a period of thick frozen ground over the pipeline. A small leak could remain undetected for an extended period of time and thus amount to a large and significant event to the groundwater	Factors affecting oil spill impacts to the environment including groundwater resources are discussed in section 3.13.4.1 of the DEIS. Seasonal variations of these impacts are also discussed in this section of the DEIS.
90	Paul Matthews	25	9/24/2007	email	SAF	Appendix L, Pipeline Risk Assessment and Environmental Consequence Analysis. This document may be inaccurate due to: The document was apparently finished June 2006 before the HECLA alternative route was identified January 2007. the document was apparently finished before the April 30, 2007 Dept. of Transportation's special waiver for Keystone to operate pipeline(s) at 80% of SMYS rather than 72% and therefore risks assessments may not be the same.	Appendix L is based on a database that includes a wide range of pipeline operating scenarios and in the entire range of environments of the continental USA. Keystone's plan for operations and monitoring is designed to reduce the risk of spills to levels below the industry average over the life of the pipeline. The proposed Keystone pipeline has a MAOP of 1440 psi. PHMSA issued a waiver allowing a small change in the SMYS for the pipeline, thus effectively allowing a very small decrease in pipe wall thickness in certain circumstances. In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas. See Section 2.0 of the FEIS for additional discussion of the waiver.
91	Paul Matthews	25	9/24/2007	email	WAT	The document does not address the situation of a possible event near a rural water distribution systems utilizing plastic pipes and Keystone's plan to provide recipients of rural water an alternative timely supply of water should the event extend beyond several hours.	According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron was determined to be highly improbable. However, if rural water distribution was to be disturbed by a spill, Keystone would work with landowners to find a solution regarding water supply.
92	Paul Matthews	25	9/24/2007	email	RES	The first responders could possibly be local emergency responders. The document fails to mention that these responders may not have adequate training or equipment to handle the situation. The apparent "First Responders" as described in the document will possibly be stationed hours away from the hazard site and travel plans during inclement weather delaying the respond time. Thus making the local responders essential for community safety and limiting the area and affects of the spill.	Comment acknowledged. No change to DEIS. Keystone has developed an Emergency Response Plan which includes procedures in the event of an oil spill. Keystone will monitor the pipeline 24 hours per day, 7 days per week, using a system which will alert system monitors of possible spills or leaks. The Operations Control Center operator has complete authority to execute pipeline shutdowns in responding to abnormal pipeline conditions. The final Emergency response Plan is due in Q1 2009. A preliminary plan is provided in Appendix C.
93	Paul Matthews	25	9/24/2007	email	WAT	Appendix J, Water Body Crossings. The document appears to be inaccurate for Sargent County mile post 203.54 as that surrounding area is best described as farmland only with no intermittent streams/river anywhere close.	Comment accepted. Appendix J has been updated. The revised table does not indicate any waterbody crossings between MP 184 (Ransom County, ND) and MP 249.3 (Day County, SD)
94	Paul Matthews	25	9/24/2007	email	MOR	The document does not address Kraft Slough in Sargent County ND The area has been defined by the US Congress by Public Law 99-294 as "giving consideration to the unique wildlife values of the area." It would appear the draft EIS does not address this wildlife resource and provide details to maintain its safety to wildlife and the new fishery being established.	The Keystone Mainline does not cross Kraft Slough, any Bureau of Reclamation or any other USFWS Refuge system lands in North Dakota.
95	Paul Matthews	25	9/24/2007	email	MOR	It's also apparent that geological studies relied on sporadic well locations miles from the pipeline. The studies need further review to insure aquifers are not unnecessarily being jeopardized.	Available information in the literature was reviewed relative to aquifer quality and use along the pipeline corridor. More distant data is appropriately included to assess aquifer characteristics on a regional basis. No change to EIS required.
96	Paul Matthews	25	9/24/2007	email	MOR	It's apparent that well locations (including domestic and abandoned) should be identified along the route. Baseline testing by Keystone should be conducted to determine amount of contamination during or after construction of these wells.	According to Keystone, no private wells occur within the proposed ROW of the pipeline. If wells did occur within the ROW, protection of these wells would be an issue negotiated between Keystone and each individual landowner, including compensation and liability for well head damage or water supply loss. To reduce the potential for leaks or spills, Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements.
97	Paul Matthews	25	9/24/2007	email	RTE06	Table 4.4-1 describes route variation "Hecla Sandhills Alternative" to a position near original route. The wording is misleading. This reroute only moved the route halfway to its original position and still places the pipe in shallow aquifers and extensive wetlands with sandy substrates	The original Presidential Permit application included an alignment in the Hecla Sandhills area east of the current alignment position (ENSR, April 2006). In the Keystone Pipeline project Environmental Report updated in November 2006, the proposed alignment was moved west. The western alignment created concerns from USFWS, landowners, and local officials related to surface disturbances and potential groundwater contamination. In response to these concerns, Keystone conducted an alternatives analysis in the Hecla Sandhills area (TransCanada, 2007 b, Response to DR#1, January 2007). Based on that analysis, a new alignment in the Hecla Sandhills area was submitted and included in the Proposed Alternative. This new Hecla Sandhills alignment crosses 11 fewer miles of palustrine emergent wetlands, avoids USFWS grassland easements, crosses three miles fewer wetland easements, crosses three less miles of high quality native prairie, 5 fewer miles of sandy and gravelly soils, and 15 fewer miles of mapped shallow water supply aquifers.
98	Paul Matthews	25	9/24/2007	email	MOR	The document seems to be absent on the Keystone's analysis of the I-29 Alternative route through ND and SD. A detailed reconstruction of that review should be made available before EIS is finalized	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills. Keystone evaluated a variety of potential routes for the pipeline.
99	Paul Matthews	25	9/24/2007	email	RTE03	The document describes, "Route development attempted to minimize the extent of crossings and impacts related to secondary constraints." This appears to be inaccurate as the description does not to match the current route attributes.	Keystones documented process for identifying the pipeline route attempted to maximize the route with respect to there route selection criteria. The proposed route alternative is a balance of multiple routing criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
100	Paul Matthews	25	9/24/2007	email	RTE03	the route places a clear cut very close to Ft. Ransom State Park, ND (an area recognized for its unique ND beauty and visitors destination) and passing close to over 20 rural resident homes where ND's vast open areas should preclude neither as necessary.	Project facilities will be underground adjacent to Fort Ransome State Park, ND and not visible to park users. The closest above ground facility is a planned pump station located more than 1.5 miles from the northern park boundary. Keystone has committed to working with landowners to find the best route though their individuals properties, within the constraints of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
101	Paul Matthews	25	9/24/2007	email	RTE02	The document presumes the reader to understand why federal, state, Native American or military lands need to be avoided. The document should clearly identify the reasons to avoid these properties.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. In terms of land ownership, the vast majority of land along the general project route is privately owned. It would be difficult to plan and construct a pipeline of this length without affecting a large amount of private land. The proposed alignment also takes advantage of co-locating with existing and planned pipelines so as to decrease the cumulative effect of multiple projects. A full description of Keystone's alternatives analysis is available in Section 4.0, Alternatives, in the EIS.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
102	Paul Matthews	25	9/24/2007	email	VAL	Those of us involved in minimum tillage agricultural have examined soil disturbances causing lost productivity that having lasting affects close to 10 years or more. We fear similar results with this reclamation plan. Therefore the document does not recognize a longer term impact for those producers using no-till agricultural methods.	Keystone's Mitigation Plan includes measures to avoid or minimize topsoil or subsoil mixing and to ensure that compaction and other construction-related effects are corrected. Keystone would only use machinery with low ground pressure; avoid or restrict construction activities in extremely wet soil conditions to minimize soil compaction and rutting; and return all affected land to original levels of compaction through ripping and disking prior to replacement of top soil. Construction-related soil compaction impacts are expected to be short term and minor. Pipeline operation would not affect soil compaction. No change to DEIS.
103	Paul Matthews	25	9/24/2007	email	MOR	On page 3.2-10 the document reads "Keystone conducted a detailed analysis of the effects of pipeline operations on winter and summer soil temperatures along the proposed route." This analysis should be included in the document to test its veracity.	More detail on soil-temperature effects will be included in the final EIS.
104	Paul Matthews	25	9/24/2007	email	SOI	The document further describes "Although decreases in soil moisture content within 3 feet of the pipe centerline may occur, no drought-prone soils have been identified along the proposed route," "No drought-prone soils have been identified" seems an unrealistic assumption to landowners of this ND region.	Comment acknowledged. Soil characteristics were derived from NRCS databases, and may not reflect local fine-scale variation in soil properties
105	Paul Matthews	25	9/24/2007	email	MOR	The document suggests "Keystone should obtain and evaluate information regarding all private wells within 100 feet of the ROW prior to initiation of construction activities to ensure the protection of these water resources." This information should be expanded to several miles to acquire information to better understand the aquifers the pipe is passing over or through.	According to Keystone, no private wells occur within the proposed ROW of the pipeline. If wells did occur within the ROW, protection of these wells would be an issue negotiated between Keystone and each individual landowner, including compensation and liability for well head damage or water supply loss. To reduce the potential for leaks or spills, Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. It is not necessary to evaluate shallow aquifers miles from the proposed pipeline corridor to assess potential pipeline impacts.
106	Paul Matthews	25	9/24/2007	email	MOR	the document states Keystone will finalize an Environmental Response Plan before construction. During ND State PSC hearings, Keystone indicated this plan would not be available until a year after construction is anticipated to begin. This is a critical item and subject for review before the EIS is finalized.	Please refer to Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis. Should permits be issued to allow construction and operation of the Keystone Pipeline, a final Emergency Response Plan would be prepared and submitted to USDOT/OPS consistent with the requirements of 49 CFR Part 194.119.
107	Paul Matthews	25	9/24/2007	email	T&E	Table 3.8.1-4 (cont.) Entries under ND are incorrect. The entries made are all for South Dakota, if the county names labeled are appropriate.	Table 3.8.1-4 was corrected.
108	Paul Matthews	25	9/24/2007	email	EDT	Table 3.8.1-11. The description of mile posts 203.6 – 205.0 that native prairie grass appears to be in error. A more proper land description of those miles would be cultivated farmland.	Mileposts were revised as the pipeline route was finalized. Revised Table 3.8.1-11 Milepost designations.
109	Paul Matthews	25	9/24/2007	email	EDT	Table 3.8.1-14. All entries for Dickey Co ND are inaccurate. The route does not include Dickey County	Mileposts were revised as the pipeline route was finalized. Revised Table 3.8.1-14 Milepost designations.
110	Paul Matthews	25	9/24/2007	email	MOR	Overall, an assessment of western Sargent County seems to be absent in the document. This area has been home to a number of species noted by the local community including bald eagles, prairie chickens, prairie skink, western grebes, perhaps Piping Plovers, American woodcock, Franklin gull colony and yellow-breasted chat. Even a sighting of a burrowing owl. It seems appropriate for this western Sargent County to be studied before the EIS is finalized	State and Federal agencies were contacted by Keystone to identify species listed by states or USFWS as threatened, endangered or species of conservation concern (see Section 3.8-1). Survey locations and methods were identified and reviewed by state resource agencies and USFWS prior to their completion. Much of the survey information was incomplete prior to publication of the DEIS. Surveys completed across North Dakota included: rare plant surveys, wetland surveys, native prairie surveys, Dakota Skipper surveys, and raptor surveys as required by state agencies and USFWS. The DEIS will be updated with information from survey reports received in September 2007.
111	Paul Matthews	25	9/24/2007	email	MOR	Potential Impacts and Mitigation 3.9.3.2 The documents states "Repair and restore land productivity to pre-construction levels." The document should expand on this statement and detail how "land productivity" will be determined	Comment acknowledged. DEIS now includes a statement that Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone.
112	Paul Matthews	25	9/24/2007	email	TAX02	The table labeled 3.10.1 -6 Property Tax Mill Levies and Tax Rates appears to be in error for Sargent County ND. The table claims a Property Tax Mill Levy amount of 406.01 where actual property tax mill levy for tax year 2006 for property on route equals only 338.35 mills. At a recent Sargent County Commissioner meeting, this disparity was noted by the Commissioners. They asserted they had no knowledge how 406.01 mill levy could have been determined by discussions with county personnel. Therefore, this error would be extended further by overstating the possible mill levy and overstate the potential property taxes being generated by the pipeline. (Keystone estimates positive economic impact for tax revenues to local communities which may be unattainable amounts. (See table 3.10.2-3 on page 3.10-51)	Comment acknowledged. The property tax mill levies were taken from the annual report of the North Dakota State Tax Commissioner, "Property Tax Statistical Report." The average Sargent County rate for 2004, the latest available at the time the previous report was completed, was 406.01 mills. See http://www.nd.gov/tax/property/pubs/stat-rep-04.pdf, Table 8, page 75. No change to DEIS
113	Paul Matthews	25	9/24/2007	email	EDT	In addition to the 26 permanent jobs directly attributed to operations and the associated $5.5 million annual payroll, these expenditures would support additional jobs and related income benefits in the region." This statement seems hard to accept. For example, $5,500,000 divided by 26 earners would generate an average annual wage of $211,538. This annual wage appears to be too optimistic to consider reasonable	This information was checked with Keystone prior to publishing the DEIS. Keystone maintains that the amounts shown are correct. No change to the DEIS
114	Paul Matthews	25	9/24/2007	email	CUL01	3.11.1.1 states, "Their draft survey report was submitted to the North Dakota SHPO in January 2007 (Meier et al. 2006a)." This report apparently does not include the Hecla Alternative route in Sargent County ND. The alternative was not selected or survey permissions granted till spring 2007.	Comment accepted; DEIS text amended to clarify.
115	Paul Matthews	25	9/24/2007	email	CUL01	The table 3.11.1-2 for mile post 204.9 to 205.8 "survey completed" cannot be accurate since survey permission hasn't been granted to date on the affected property.	Comment accepted; DOS will check the applicants data and revise DEIS if necessary
116	Paul Matthews	25	9/24/2007	email	MOR	The document doesn't seem to identify "areas where corrosion is high" such that alternative routes could/should be considered for that factor.	The Keystone pipeline is designed and would be constructed in conformity with federal regulations designed to promote pipeline integrity and safety. The pipeline would be coated to withstand corrosion, and inspected regularly to check for signs of corrosion damage, including internal "pigging".
117	Paul Matthews	25	9/24/2007	email	SAF	historical spill data might not be accurate to evaluate potential spills since pipeline ND climate and environment has very little history with crude oil pipelines of this magnitude. Risk assessments could be understated.	Appendix L is based on a database that includes a wide range of pipeline operating scenarios and in the entire range of environments of the continental USA. Keystone's plan for operations and monitoring is designed to reduce the risk of spills to levels below the industry average over the life of the pipeline.
118	Paul Matthews	25	9/24/2007	email	WAT	The document seems not to mention the potential impact on a resource like Sargent County ND's Kraft Slough where it's only recharge water is from local runoff and not flowing streams or rivers.	According to Keystone, the proposed route does not cross the Kraft Slough.
119	Paul Matthews	25	9/24/2007	email	CME01	. The document seems to ignore that Keystone is acquiring easements for "one or more pipelines" which mandates the landowner to try to gain knowledge of another impending pipeline planned	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Additional pipelines, include additional lines in the same easement would be subject to additional appropriate permitting and environmental review under NEPA whenever jurisdiction of a federal agency occurs.
120	Paul Matthews	25	9/24/2007	email	RUR	In analyzing rural communities like ND, the possible spill effect on a low population density area is magnified.	Keystone has developed an Emergency Response Plan which includes procedures in the event of an oil spill. Keystone will monitor the pipeline 24 hours per day, 7 days per week, using a system which will alert system monitors of possible spills or leaks. The Operations Control Center operator has complete authority to execute pipeline shutdowns in responding to abnormal pipeline conditions. The plan or an update of the plan will be included with the Environmental Impact Statement. No change to DEIS.
121	Pauline Schiappa	26	9/10/2007	letter	VAL	My concerns relate to the impact that the construction and operation of said pipeline would have on my Missouri property because this property has coal on it; because of this fact what would be the impact of any future possibility of mining that coal as well as the possibility of any residential or commercial development of this property.	Comment acknowledged. Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alternation of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity. In addition, Keystone will compensate landowners for any crop or other losses they sustain during the construction period.
122	Richard Starke	27	9/25/2007	email	PIP	the pipe should be made of seamless stainless steel produced by extrusion as in railroad rails one mile long, which requires NO protective cover, will not corrode internally as plain carbon steel, need no "pig" system since there is NO internal corrosion.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will utilize a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill.
123	Raymond Anderson	28	9/23/2007	email	HYP	this DEIS (Draft Environmental Impact Statement) issued by the Department of State on the TransCanada-Keystone Pipeline is not complete since TransCanada and the refinery would be connected.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
124	Raymond Anderson	28	9/23/2007	email	VAL	There is no way to mitigate the financial loss to our family-operated farm.	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone intends to repair or restore drain tiles, fences, and land productivity as these may be damaged during construction. After construction, all but 140 acres of agricultural land can revert to its previous use. In addition, Keystone will compensate landowners for actual crop losses resulting from removal of standing crops, disruption of planned seeding activity, disruption of general farming activities, or other losses resulting from construction.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
125	Raymond Anderson	28	9/23/2007	email	LND	The only new money in the world comes from farming and the ocean. That is economic development not destroying the land and water.	Comment acknowledged.
126	Raymond Anderson	28	9/23/2007	email	VAL	New and different crops are being developed all the time. This pipeline would take away the potential of taking advantage of those changes on our land. South Dakota State University is now working on raising rice and crayfish in South Dakota. Having a specialty crops would bring far more money than regular crops	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
127	Raymond Anderson	28	9/23/2007	email	PIP	I question whether a steel pipe buried in some of this soil can protected from corrosions. Especially since this is a high pressure pipeline operating at up to 1,700 psi with thinner walls.	The Keystone pipeline will be designed and constructed in conformity with federal regulations designed to promote pipeline integrity and safety. The pipeline will be coated to withstand corrosion, and inspected regularly to check for signs of damage.
128	Raymond Anderson	28	9/23/2007	email	SOI	TransCanada states that the crude oil moving through the pipes will be at between 70 and 80 degrees. This will dry out the sub-soil and make it impossible to grow anything of value over the pipeline area. The subsoil moisture will be non existent.	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
129	Raymond Anderson	28	9/23/2007	email	LIA	TransCanada has refused to pay us yearly for what crops are destroyed. We were told that the real way to see the damage is to fly over and look down. How many farmers have a plane ready so they can take pictures to send to TransCanada? Why should we have to on a year to year basis? TransCanada should be required to make payments to landowners for crop damage each year the pipeline is in operation.	Easement negotiations between Keystone and individual landowners are not within the scope of the DOS Keystone EIS.
130	Richard Zwick	29	9/20/2007	email	WAT	The Keystone Petroleum Pipeline Project's proposed route transverses the flood plain, wetlands, Ogallala Aquifer (unique in the U.S.), and most serious of all, Seward's water-well fields.	Keystone conducted an evaluation of a hypothetical spill and the potential impact to Seward's water supply wells (Keystone's SCPRC Route Alternative #2). Keystone's analysis demonstrates that there is no risk to Seward's wells located to the west and southwest of the pipeline. The closest well located to the south of Seward is 3,815 feet from the pipeline (approximately 0.75 mile), while the other two wells are more distant. A spill that could affect Seward's wells located directly south is highly improbable and contamination would take years (if ever) to reach the wellhead, allowing time for containment and remediation efforts. If groundwater contamination were suspected, water quality would be monitored and, if necessitated, alternative sources of water would be provided prior to interruptions in service.
131	Richard Zwick	29	9/20/2007	email	RTE01	Petroleum pipelines laid within a drinking-water source place several generations at constant risk for the next 50 or more years. The proposed pipeline is planned to run 12 inches or so below one of the city of Seward's main water lines	Keystone's proposed route would pass beneath four water lines associated with the city of Seward. These pipelines are composed of PVC and ductile iron pipe. At a minimum, the Keystone pipeline would cross 12 inches below these water lines consistent with the utility crossing agreement. Keystone conducted an evaluation of the probability of the proposed pipeline negatively impacting Seward's water main utility lines. According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron near Seward was determined to be highly improbable.
132	Richard Zwick	29	9/20/2007	email	CME01	Easement agreements for pipeline right-of-ways include allowing two or more additional lines along the same route. Sooner or later almost all pipelines leak somewhere	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Additional pipelines, include additional lines in the same easement would be subject to additional appropriate permitting and environmental review under NEPA whenever jurisdiction of a federal agency occurs.
133	Richard Zwick	29	9/20/2007	email	OIL	Pipe pressure of 1440 lbs./square inch could turn a pin-hole leak in the pipeline into a petroleum geyser (A six-hour timeframe is required to detect the leak and shut off the pressure	See section 3.13.4.1 and Appendix C for detection of small (pinhole leaks). Also, almost all the pipeline is buried so a small leak would likely not be released as a "geyser" as it will immediately contact the surrounding soil and gravel. A pinhole leak that occurred either belowground or above ground would likely lead to oil staining or ponding within the trench and would ultimately be detected through aerial surveillance if on the ground surveillance was ineffective and a leak to a water body would also be apparent to the aerial surveillance as a sheen on the water.
134	Timothy Wagner	30	9/24/2007	email	RTE04	I am writing to express opposition to the proposed alignment of TransCanada's Keystone Pipeline presented in the Draft Environmental Impact Statement (DEIS) and to the pipeline in general.	Comment acknowledged.
135	Timothy Wagner	30	9/24/2007	email	ALT	The Range of alternatives presented in the DEIS is insufficient. There is no reference in this DEIS to those alternatives considered but dismissed. In particular, the DEIS does not present or evaluate "Route 1A", previously presented as the "Preferred Route Selection" to the South Dakota Public Utilities Commission in the "Keystone Pipeline Project Environmental Report, April 2006 Updated November 15, 2006	Section 4.2 of the EIS presents and discusses system alternatives (use of other existing or proposed pipelines), Section 4.3 presents and discusses 3 route alternatives for the proposed project and local variations in the proposed project route are defined and discussed in Section 4.4. These three layers of "alternatives" form a comprehensive evaluation of project alternatives. Route 1A identified in the Environmental Report submitted by Keystone is identical to the Iowa Route discussed as one of three route alternatives in Section 4.3 of the DEIS.
136	Timothy Wagner	30	9/24/2007	email	RTE03	Route 1A, as presented in TransCanada's Environmental Review, appears to follow existing public roadway and railroad corridors through South Dakota. This type of alignment is much preferred to disturbing and removing tillable cropland from future production.	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
137	Timothy Wagner	30	9/24/2007	email	VAL	The environmental report and the DEIS assume that crossing prime and unique cropland is more preferential than crossing water bodies, wetlands, wildlife areas, roads, railroads, utilities, national parks, conservations areas, and Native American or Military lands. Why are valued croplands not given the same consideration under the Farmlands Protection Policy Act	The Mainline Project would primarily cross cropland in private ownership. Construction and operation of the project would affect about 11,210 acres of agricultural land along 1,078 miles of construction. To address impacts on agricultural lands, Keystone proposes to restore all disturbed areas. Following construction, agricultural land would be restored to the same level of productivity as that prior to construction. No change to DEIS
138	Timothy Wagner	30	9/24/2007	email	MIT	The proposed construction mitigation and reclamation plans are inadequate if the preferred alternative, presented in the DEIS, is approved more stringent mitigation measures are required.	State and Federal regulatory agencies will review Keystones "Construction, Mitigation and Reclamation Plan" and may require additional mitigation before construction permits are approved. Measures presented in the DEIS are those described by Keystone or proposed by state and federal agencies during their reviews of a Preliminary DEIS and the DEIS.
139	Timothy Wagner	30	9/24/2007	email	VAL	Research has shown (attached file: soilabstracts.pdf) that crop yields can be reduced by more than 40 percent along pipeline construction rights of way. Poor construction practices and oversight, combined with inadequate depth, proper soil compaction, and soil separation all can contribute to unacceptable crop loss	Keystone's Mitigation Plan includes measures to avoid or minimize topsoil or subsoil mixing and to ensure that compaction and other construction-related effects are corrected. Moreover, Keystone would only use machinery with low ground pressure; avoid or restrict construction activities in extremely wet soil conditions to minimize soil compaction and rutting; and return all affected land to original levels of compaction through ripping and disking prior to replacement of top soil. Construction-related soil compaction impacts are expected to be short term and minor. Pipeline operation would not affect soil compaction. No change to DEIS.
140	Timothy Wagner	30	9/24/2007	email	LIA	and bonding against damages should be required	The key regulation for pipeline spill response is 49 CFR Part 194 – "Response Plans for Onshore Oil Pipelines". Under Part 194.115, Response Resources, Operators must submit a plan, and must certify that they have response resources sufficient to respond to the worst case oil spill. Ensuring the necessary resources are available "by contract or other approved means" provides equivalent or better protection than bonding. Bonding just covers the finances, that does not mean that the needed resources are actually trained and available. Under this rule they need to "ensure" actual resources in a given time frame.
141	Timothy Wagner	30	9/24/2007	email	LIA	a comprehensive mitigation agreement for cropland is a necessity. This agreement must allow legal recourse, at no expense to the landowners, if contractors installing the pipeline fail to follow the mitigation agreement.	Keystone's CMR (Appendix B) states in section 4.15 that in cultivated land, Keystone shall monitor the yield of land impacted by construction with the help of agricultural specialists. If alterations are indicated from that of adjacent lands, Keystone will compensate the Landowner for reduced yields and shall implement procedures to return the land to equivalent capability. In addition Section 4.14.4 states that if the landowner sees problems with the construction activities there is a 24-hr number to call and the Construction manager will respond to the complain within 24 hours. No change to DEIS.
142	Charles Hentzen	31	9/17/2007	letter	WAT	My general concern about this project is that the pipeline would be going above the Ogallala aquifer with a potential to damage not only the Seward area water supply but one of the largest freshwater aquifers in the world.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
143	Charles Hentzen	31	9/17/2007	letter	RTE01	Why not move it East to avoid the Ogallala aquifer?	The SCPRC Route Alternative #2 (east of proposed route) was evaluated by Keystone. It was concluded that "The SCPRC Alternative #2 increases overall environmental impacts. The route alternative will increase the pipeline length by 1.4 miles, resulting in an increased amount of surface disturbance and environmental impacts. While most lands would be allowed to revert to previous uses, the SCPRC Alternative #2 would also result in the additional permanent conversion of 0.5 acre of forested lands to herbaceous cover. Impacts to other resources, such as surface water crossings, wetlands, and road crossings, would be comparable. The number of property owners affected would also be comparable. Since the threat of a spill that could potentially affect Seward's wells is highly improbable and with implementation of Keystones Integrity Management program and ERP in the unlikely event of a release, Keystone's currently proposed route is considered safe and well conceived".
144	Charles Hentzen	31	9/17/2007	letter	PIP	Second, it is proposed to bury the line only 4feet Is this adequate? Why not deeper to avoid damage by farm equipment and to avoid interruption of natural water drainage?	Addressed in Section 2.2.1.3. The DOT requires a minimum of 36 inches of cover in most areas, and a minimum of 18 inches of cover in rocky areas. Keystone proposes to use a minimum of 36 inches of cover in rocky areas and 48 inches in other locations.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
145	Charles Hentzen	31	9/17/2007	letter	RTE05	They are proposing to go 440 yards east of the north/south half mile line. Thus, it would cut directly through the paths of two center pivots and potentially interrupt farming activities for the Whole center pivot area. A simple solution would be to move the line to within 90 feet east of the north/south half mile line. This would allow us to move heavy farm equipment over the Whole pivot area and not risk interrupting the irrigation and other farming operations in growing seed corn.	Issues related to irrigation systems, including pivot irrigation systems are addressed at Section 4.1 of the CMR provided in Appendix B. Also Keystone will work with individual landowners to find the best route though their property within the constraints of the project design. Keystone will repair any irrigation systems impacted by pipeline construction
146	Charles Hentzen	31	9/17/2007	letter	VAL	The location of the pipeline would be very damaging since we grow seed corn for Pioneer. Pioneer would possibly eliminate our Farm from producing seed corn since we could not guarantee supply.	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
147	Charles Hentzen	31	9/17/2007	letter	KEY	The pipeline company is demanding access to our Whole property. I cannot see why this is necessary. Their right of way is enough. If I owned 100,000 acres and the pipeline went across one acre, would they still try to justify access to the whole 100,000 acres?	Easement negotiations between Keystone and individual landowners are not within the scope of the DOS Keystone EIS.
148	Cory Eich	32	9/10/2007	letter	RTE04	I make my living from this land from crops and livestock I do not want my air, land and water sources polluted from the TransCanada Pipeline	Comment acknowledged.
149	Cory Eich	32	9/10/2007	letter	LND	The fertility of the land will be greatly reduced when it is disturbed during and after construction of the pipeline	See section 3.2 for impacts on soils and sediments and section 3.9 for impacts on agricultural resources.
150	Cory Eich	32	9/10/2007	letter	VAL	Construction of the pipeline on my land will prevent me from any opportunity of expansion or construction in the future of buildings, feedlots, fences and shelterbelts on the land I own thereby limiting my chances of increased business and income.	Text in DEIS changed to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity. In addition, Keystone will compensate landowners for any crop or other losses they sustain during the construction period.
151	Cory Eich	32	9/10/2007	letter	RES	Our rural community does not have the resources or training to handle disasters relating to an oil leak, explosion or fire	Please refer to Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis. Should permits be issued to allow construction and operation of the Keystone Pipeline, a final Emergency Response Plan would be prepared and submitted to USDOT/OPS consistent with the requirements of 49 CFR Part 194.119.
152	Cory Eich	32	9/10/2007	letter	OIL	Inability to respond to a leak or emergency would add further damage to the soil	Comment acknowledged.
153	Cory Eich	32	9/10/2007	letter	HUM	Our rural community does not have resources or training to handle disasters relating to an oil leak, explosion or fire putting human lives in danger.	Please refer to Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis. Should permits be issued to allow construction and operation of the Keystone Pipeline, a final Emergency Response Plan would be prepared and submitted to USDOT/OPS consistent with the requirements of 49 CFR Part 194.119.
154	Cory Eich	32	9/10/2007	letter	OIL	A spill may go unnoticed for a long period of time due to the pipeline location in our rural area resulting in a large area of contamination of soil and water.	Leak detection protocols apply to the entire pipeline corridor. The potential for identifying a leak or release depends on the designed leak detection systems, planned surveillance, and the potential for observation of discolored soil, oil ponding, or sheens by landowners and local residents. While the areas crossed by the pipeline are predominantly rural, observations by landowners and residents through sight or smell would assist in leak identification and response mobilization.
155	Cory Eich	32	9/10/2007	letter	WAT	It is my understanding that it takes billions of gallons of water to refine this crude oil so why should the people of the United States risk losing our precious water resources to refine oil from a foreign country?	Please refer to Section 1.2, Project Purpose and Need
156	Janet Woolsoncroft	33	9/21/2007	letter	RTE04	In order to protect my wetlands, springs. and ponds, this pipeline should be placed somewhere to the south of my property in an area where the land is more level and the water drains to the south not the north	Keystone would work with individual landowners to find the best route though their property to avoid ponds and wetlands, but within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
157	Janet Woolsoncroft	33	9/21/2007	letter	WAT	The evidence shows that no matter where you put a pipeline on my property, you run the risk of damaging my springs and ponds	The potential for damage resulting to private landowner ponds and springs resulting from construction and operation of the Keystone pipeline should be addressed in the easement agreement negotiated between Keystone and the landowner. To reduce damage potential, Keystone is committed to implementing the mitigation measures included within the CMR (Appendix B) as amended by additional mitigation measures identified within this document and negotiated with appropriate regulatory permitting agencies.
158	Janet Woolsoncroft	33	9/21/2007	letter	WET	The evidence shows that no matter where you put a pipeline on my property, you run the risk of damaging my wetlands.	Keystone has committed to mitigation to reduce wetland impacts from construction and operation of the pipeline as outlined in Section 3.4.3 pages 3.4-13 to 3.4-15. Keystone plans to restore wetlands that have been damaged by pipeline construction (see 3.4-15).
159	Janet Woolsoncroft	33	9/21/2007	letter	OIL	If there is a pipeline leak, where is that crude oil going to go? Right down the hill into my springs and ponds.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
160	Janet Woolsoncroft	33	9/21/2007	letter	LND	This is an environmentally sensitive area. My spring-filled ponds were unique, sparkling jewels filled with clear water and nestled in the middle of my properly---	Comment refers to impacts from REX pipeline construction. Keystone would utilize the Construction Mitigation and Reclamation Plan, Appendix B, as amended based on new commitments made in the EIS process and any additional permit conditions, to reduce potential impacts to springs and ponds.
161	Janet Woolsoncroft	33	9/21/2007	letter	ACK	thanks to REX the condition of my whole properly from the south end to north end is deplorable because subsoil, topsoil and sediment has all followed the natural slope of the property to the north,	Comment relates to impacts due to REX. In addition to the measures identified in Appendix B, Construction Mitigation and Reclamation plan, Keystone has agreed to some additional mitigation measures and recommendations in the EIS to reduce the risk of similar events during pipeline construction..
162	Janet Woolsoncroft	33	9/21/2007	letter	RTE04	FERC took a stand and refused to let Rockies run through my springs and wetlands. The Department of State now needs to take a stand and prevent Keystone from placing their pipeline anywhere on my property	Keystone would work with individual landowners to find the best route though their property to avoid ponds and wetlands, but within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
163	Jim Schultz	34	8/17/2007	letter	RTE04	I strongly oppose any additional pipelines on my property as I already have one and an electrical transmission line. This pipeline and its detrimental effects will definitely not improve my farm or the environment.	Mitigation measures and permit requirements are expected to reduce impacts to farmland and will allow farmed areas to return to their previous use.
164	Jim Schultz	34	8/17/2007	letter	FLD	My land is in the Cuivre River flood plain and I am very concerned about the environmental impact as well as the excessive erosion that would take place since this river floods several times a year.	To reduce risk to the proposed pipeline through flooding, Keystone has stated that all river crossings would be designed by qualified personnel who are trained in floodplain processes. Actual stream crossing and erosion control measures would be approved and permitted by the USACE prior to construction. The buried pipeline would not obstruct flow, and would therefore not itself contribute to flooding.
165	Jim Schultz	34	8/17/2007	letter	LND	The Natural Resource and Conservation Service will not allow me to remove any trees or vegetation near the river for my farming operation. So it is hard to believe this pipeline would be allowed to for their own business interest and not for any public interest.	Please refer to Section 1.2, Purpose and Need.
166	Jim Schultz	34	8/17/2007	letter	ACK	I would appreciate any consideration that could be given to me as a landowner who has nothing to gain but only damage to my farm and the environment. My land has been in my family for 125 years and it is my hope to pass it to the next generation in better condition than when I received it.	Keystone has stated that "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." If productivity suffers due to pipeline construction or operation, that productivity loss should be compensated for, assuming that such a provision is written into the easement agreements.
167	Leanne Eich	35	9/10/2007	letter	RTE04	I make my living from this land from crops and livestock I do not want my air, land and water sources polluted from the TransCanada Pipeline	Mitigation measures and permit requirements are expected to reduce impacts to farmland and will allow farmed areas to return to their previous use.
168	Leanne Eich	35	9/10/2007	letter	LND	The fertility of the land will be greatly reduced when it is disturbed during and after construction of the pipeline	See section 3.2 for impacts on soils and sediments and section 3.9 for impacts on agricultural resources.
169	Leanne Eich	35	9/10/2007	letter	VAL	Construction of the pipeline on my land will prevent me from any opportunity of expansion or construction in the future of buildings, feedlots, fences and shelterbelts on the land I own thereby limiting my chances of increased business and income.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity. In addition, Keystone will compensate landowners for any crop or other losses they sustain during the construction period.
170	Leanne Eich	35	9/10/2007	letter	RES	Our rural community does not have the resources or training to handle disasters relating to an oil leak, explosion or fire	Keystone has developed an Emergency Response Plan which includes procedures in the event of an oil spill. Keystone will monitor the pipeline 24 hours per day, 7 days per week, using a system which will alert system monitors of possible spills or leaks. The Operations Control Center operator has complete authority to execute pipeline shutdowns in responding to abnormal pipeline conditions. The plan or an update of the plan will be included with the Environmental Impact Statement. No Change to DEIS.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
171	Leanne Eich	35	9/10/2007	letter	OIL	Inability to respond to a leak or emergency would add further damage to the soil	Comment acknowledged.
172	Leanne Eich	35	9/10/2007	letter	HUM	Our rural community does not have resources or training to handle disasters relating to an oil leak, explosion or fire putting human lives in danger.	Please refer to Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis. Should permits be issued to allow construction and operation of the Keystone Pipeline, a final Emergency Response Plan would be prepared and submitted to USDOT/OPS consistent with the requirements of 49 CFR Part 194.119.
173	Leanne Eich	35	9/10/2007	letter	OIL	A spill may go unnoticed for a long period of time due to the pipeline location in our rural area resulting in a large area of contamination of soil and water.	Leak detection protocols apply to the entire pipeline corridor. The potential for identifying a leak or release depends on the designed leak detection systems, planned surveillance, and the potential for observation of discolored soil, oil ponding, or sheens by landowners and local residents. While the areas crossed by the pipeline are predominantly rural, observations by landowners and residents through sight or smell would assist in leak identification and response mobilization.
174	Leanne Eich	35	9/10/2007	letter	WAT	It is my understanding that it takes billions of gallons of water to refine this crude oil so why should the people of the United States risk losing our precious water resources to refine oil from a foreign country?	Please refer to Section 1.2, Project Purpose and Need
175	Neal Mentzer	36	9/14/2007	letter	WAT	I am very concerned about water quality. Seward County is part of the Ogallala Aquifer. The purposed pipeline runs through flood plains and spring waters areas in the county. I believe the pipeline is a risk for creating more problems with our water quality.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
176	Neal Mentzer	36	9/14/2007	letter	ERO	Erosion is always a concern & has to be dealt with on an annual basis. Wouldn't it be much better to place the pipeline 90 feet out from the property line?	Comment acknowledged. Keystone has expressed willingness to work with individual landowners to make minor route variations to avoid site-specific impacts.
177	Neal Mentzer	36	9/14/2007	letter	RTE05	Running the pipeline through the middle of the quarter disrupts pivot irrigation, terraces and waterways. Wouldn't it be much better to place the pipeline 90 feet out from the property line?	Keystone would work with individual landowners to find the best route though their property within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
178	Neal Mentzer	36	9/14/2007	letter	PIP	Another concern is the depth of the pipe placement. Three feet is not deep enough.	Addressed in Section 2.2.1.3. The DOT requires a minimum of 36 inches of cover in most areas, and a minimum of 18 inches of cover in rocky areas. Keystone proposes to use a minimum of 36 inches of cover in rocky areas and 48 inches in other locations.
179	Neal Mentzer	36	9/14/2007	letter	SOI	Depending on what effects the pipeline has on the surrounding soil, yields may decrease because of heat generated by the pipeline and/or erosion over it.	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
180	Ron and Kathryn Benson	37	9/22/2007	website	WAT	The proposed route for the Cushing expansion passes within 200 feet of our residence, which is located at 1869 19th Rd., Clay Center, KS. The pipeline will disturb our septic system, and we are concerned about the proximity of the pipeline to our water well. Any leak would compromise our household water supply.	According to Keystone, no private wells occur within the proposed ROW of the pipeline. If wells or septic systems did occur within the ROW, protection of these wells and septic systems would be an issue negotiated between Keystone and each individual landowner, including compensation and liability for well head damage, septic system damage, or water supply loss. To reduce the potential for leaks or spills, Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements.
181	Ron and Kathryn Benson	37	9/22/2007	website	ACK	We recently learned that we need to construct a new sewer system. Consequently, we have been permitted for a lagoon, which will be constructed in the next six (6) months.	Comment acknowledged; no change to DEIS
182	Emma Mann	38	9/23/2007	website	ENR	How about starting out with the premise of real conservation, such as substitution of alternative sources of energy, more efficient energy using technologies, and better community planning?	Alternative energy sources including biofuels and wind power, and conservation and more efficient use of existing energy sources should be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
183	Emma Mann	38	9/23/2007	website	RTE03	How about laying pipeline in already existing pipeline right-of-ways and just extending south from Wood River to southern US? Why not use the I-29/I-70 route? The right of way along an interstate or highway would provide constant surveillance, immediate easy access, and no damage to private properties	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
184	Harry Bennett	39	9/23/2007	website	ORG	I would like to express a concern about how the pipeline company will deal with controlling woody growth on the pipeline easement once the project is complete. As an certified organic farmer my livelihood depends upon maintaining certifiable land on the whole farm. Organic standards do not allow for chemical pesticides. Keystone has stated that there will be no trees allowed to grow on the 50 foot easement so therefore I would like to know how they will keep the trees from regrowing	Keystone did not specify methods for ROW vegetation maintenance in their Construction and Mitigation Plan. Keystone did specify that "No herbicides or pesticides may be used within 100 feet of a wetland (unless allowed by the appropriate land management or state agency)." (See Section 3.4-15). Keystone has also committed to "Implement best management practices for vegetation control including use of agricultural herbicides in consultation with county or state regulatory agencies based on the weed species requiring control."
185	Richard Voss	40	8/22/2007	letter	RTE04	I have three quarters of good land they want to cross right in the middle of the land. I farm these in mile rounds. I don't want them on my land.	Mitigation measures and permit requirements are expected to reduce impacts to farmland and will allow farmed areas to return to their previous use.
186	Richard Starke	41	9/28/2007	email	ALT	Why were there no adequate alternates for the site?	Keystone's iterative route planning process described in Environmental Report identified the best route in consideration of Keystone's project objectives which balanced a number of criteria including overall pipeline length, number and size of required pump stations, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. In addition to the proposed alternative, two additional route alternatives were evaluated in the DEIS (see Section 4.3). Evaluation of these alternatives showed them to be less preferable than the proposed route alternative.
187	Richard Starke	41	9/28/2007	email	PIP	They should GO MODERN (SINCE 1929) and use ~~extruded stainless steel.~~!!! No corrosion inside or out, no weak welds since it is seamless!! and strong as plain carbon steel.	Comment acknowledged. See Section 2.2. Keystone will use typical industry and agency accepted crude oil pipe that meets DOT regulations at 49 CFR Part 195, which specifies pipeline material and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.
188	Leo Sibson	42	10/2/2007	letter	PIP	Giving TransCanada a waiver to the strength of pipe adds to the already safety risks.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
189	Leo Sibson	42	10/2/2007	letter	UNA	I have not been able to review the DEI document at the lecher SD library (closest) because it is open only 4.5 hrs per week which is insufficient to read 800 pages in this time period.	Letters were sent to almost 6,000 landowners announcing the availability of the DEIS. The letter incorporated a card that if returned in a timely manner would ensure that a DEIS copy would be received. For non-landowners and other interested parties, copies of the DEIS were sent to libraries at reasonable intervals along the corridor. The Federal Register announced the availability of the DEIS on Aug 10, 2007. The DEIS was posted on the website in PDF format and the appendices were also provided in that format with the hard copy in order to support the paperwork reduction act and minimize the use of paper. PDF is a widely used format for disseminating documents to users of a wide variety of computer hardware. Acrobat Reader, used to open the PDF documents, is easily downloaded for free from the Adobe site. However, we will put a note in the CD with the FEIS directing the user on how to easily download Adobe Reader.
190	Leo Sibson	42	10/2/2007	letter	RTE05	This is interfering with my operation economically and mentally with all of the confusion, safety concerns and uncertainty.	Comment acknowledged.
191	Leo Sibson	42	10/2/2007	letter	ACK	Is the US endangering its territory, security, safety, water supplies health environment, soil, rural economic development and lifestyle, wildlife and its citizens for a foreign crude oil pipeline from Trans Canada, containing hazardous materials?	Comment acknowledged. No change to DEIS.
192	Mel Krutz	43	10/2/2007	letter	ACK	It gives us confidence to know that the Federal Government is looking out for the concerns of the public in respect to pipeline safety. America's energy focus has been oil. Safety procedures are obvious necessities.	Comment acknowledged; no change to DEIS.
193	Mel Krutz	43	10/2/2007	letter	ENR	What Federal office or offices are there with the Job of researching, promoting supporting, and regulating other forms of transportation energy aside from oil?	Multiple agencies within the Federal Government address in one way or another research and development into alternative energy resources. A discussion of alternative energy research and development is beyond the scope of the EIS.
194	John Andrejewski	44	9/19/2007	letter	LND	Installation will result in removal of approximately 2100 ft by 75 ft of old, mature timber	See section 3.5 for environmental setting and impacts associated with terrestrial vegetation.
195	Mike and Sue Sibson	45	10/2/2007	letter	PIP	Project Description 2.4 Future plans and abandonment. Is this issue trying to stay under the radar? TransCanada/Keystone needs to be submitting a plan NOW As stated abandonment would proceed according to regulations in place at the time... .IS THAT A COP ·OUT??? You should not let them get by without a plan in place now.	Pipeline abandonment is not a reasonably foreseeable consequence of pipeline construction. Pipelines that are over 50 years old are still in operation today. Should abandonment of the pipeline be contemplated at some future date, the procedure would be subject to a separate NEPA process.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
196	Mike and Sue Sibson	45	10/2/2007	letter	LIA	the company should have to have a bond in each county to aid in oil spill cleanups and or any other issues related to the pipeline.	The key regulation for pipeline spill response is 49 CFR Part 194 – "Response Plans for Onshore Oil Pipelines". Under Part 194.115, Response Resources, Operators must submit a plan, and must certify that they have response resources sufficient to respond to the worst case oil spill. Ensuring the necessary resources are available "by contract or other approved means" provides equivalent or better protection than bonding. Bonding just covers the finances, that does not mean that the needed resources are actually trained and available. Under this rule they need to "ensure" actual resources in a given time frame.
197	Mike and Sue Sibson	45	10/2/2007	letter	PIP	SD has soil that contains alkali (highly corrosive) the pipeline will be covered by that type of soil.	The Keystone pipeline will be designed and constructed in conformity with federal regulations designed to promote pipeline integrity and safety. The pipeline will be coated to withstand corrosion, and inspected regularly to check for signs of damage.
198	Mike and Sue Sibson	45	10/2/2007	letter	WAT	Water is very important to our cattle business. During the summer months, that is the only source of water for our cattle. Our dugouts need to be protected from oil spills.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
199	Mike and Sue Sibson	45	10/2/2007	letter	MIT	This chapter is incomplete... Where is the company going to get land to replace the wetlands they destroy?	Keystone has indicated that wetlands would be restored so that there would be no permanent loss of wetlands. However, forested wetlands would be converted to emergent wetlands (See discussion Section 3.4-12 to 3.4-13). Several agencies have requested compensatory mitigation for wetland losses, including loss of forested wetlands (See Section 3.4-16). Keystone has indicated that compensatory mitigation would be addressed during the USACE Section 404 permitting process.
200	Mike and Sue Sibson	45	10/2/2007	letter	ATT	Wildlife. SD has lots of badgers. They dig large holes and destroy farm ground. What will they do to the pipeline?	Some badger burrows would likely be destroyed during construction if they occur within the construction ROW. Usually the approaching construction equipment would be sufficiently loud so that badgers would leave the area prior to the operation of equipment at their burrow sites. Badgers may be attracted by the warmth generated by the pipeline especially during winter months. It is unlikely that badgers would be able to damage the pipeline, although they may damage the pipeline coating. Keystone will conduct routine inspections of the pipeline ROW after construction. Should badgers appear to threaten pipeline integrity appropriate wildlife officials would be contacted and control measures would likely be implemented after appropriate permits were issued.
201	Mike and Sue Sibson	45	10/2/2007	letter	EDT	Table 3.10 1-7 Existing Public service facilities. SD data is incorrect.	Need further clarification on comment. DOS believe the data is correct. No change to DEIS
202	Mike and Sue Sibson	45	10/2/2007	letter	EDT	Table3.12.2.1 SD Pump stations, Number of structures within 1 mile of pump station are incorrect.	Need further clarification on comment. DOS believe the data is correct. No change to DEIS
203	Mike and Sue Sibson	45	10/2/2007	letter	VAL	Socioeconomics. Agriculture losses are not listed. Why not? The pipeline will limit the expansion of our farm.	Comment acknowledged. As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
204	John Andrejewski	44	9/19/2007	letter	VAL	I am concerned about the value of my land and home being reduced significantly.	Text in DEIS changed to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
205	John Andrejewski	44	9/19/2007	letter	SAF	I am concerned about safety and oil spills	Please see section 3.13.4.1 and Appendix C for Keystone's plans and procedures for ensuring the safety of people, infrastructure and the environment in the event of an oil spill. See response to comment 60 for additional information.
206	Alan Platt	46	10/2/2007	letter	SOI	I have concerns about the heat going through the pipeline. I was told at the first meeting with the keystone rep that the oil temp would be about 60 to 70 degrees and now I am learning that it is going to be a lot higher than that. I farm dry land and that could affect my crops that I grow. It could cause a drying out effect on the ground around it and also above it, which in turn affect my bottom line	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
207	Alan Platt	46	10/2/2007	letter	RTE05	The oil representatives said they would stay in a certain area which they have now changed.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
208	Alan Platt	46	10/2/2007	letter	ERO	There are concerns about soil erosion	Comment acknowledged.
209	Alan Platt	46	10/2/2007	letter	ATT	I am concerned about introduction of weeds that I didn't have to deal with before.	Weed control is discussed in Appendix B (the CMR) and Section 3.5.5.4. Keystone will develop a project-wide general noxious weed control plan. In addition, Keystone's CMR includes the following mitigation measures (see page 3.5-34 of DEIS): provide weed control on the construction ROW with Keystone surface jurisdiction; and reimburse landowners adjacent to aboveground facilities when landowners must control weeds that have spread from the aboveground facilities. To prevent the introduction of noxious weeds Keystone mitigation includes: thoroughly cleaning all construction equipment, prior to moving the equipment to the job site; mark all areas of the ROW containing noxious, invasive weeds or soil-borne pests; use best management practices for vegetation control; apply pre-construction treatments at sites identified to contain noxious weeds; apply herbicides within 1 week or as deemed necessary for optimum mortality prior to disturbing area by clearing, grading, trenching.
210	Alan Platt	46	10/2/2007	letter	MOR	I don't know if there is a fault line or earthquake possibility where this line is running.	Comment acknowledged. Seismic hazards are addressed in Section 3.1.4. "Based on a comprehensive review of the fault activity east of the Rocky Mountains (Crone and Wheeler 2000), Keystone concluded that the proposed pipeline would not cross active faults (defined as movement along the fault within the last 10,000 years)." Large-diameter steel gas and oil pipelines are much less susceptible to earthquake damage than are water lines.
211	Alan Platt	46	10/2/2007	letter	VAL	This line will devalue my property for future uses and severely limit what I can do with it and for my children and for resale value	Text in DEIS amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
212	Albert Olberding	47	10/2/2007	letter	ACK	Construction should be done in the shortest time possible to minimize impacts to our farm	Construction will proceed as quickly as possible - see Section 2.2.4 and Section 3.12.2.3.
213	Albert Olberding	47	10/2/2007	letter	VAL	The REX pipeline coming though out land won't be completed for 4 months. It has prevented us from haying, harvesting and field work. We cannot pasture our grassland and corn stalks.	As described in Section 2.2, the typical pipeline construction period would include surveying and staking; clearing and grading; trenching; pipe stringing, bending, and welding; and several other steps. Typical construction at any one point would last for only a few days. Construction activities are expected to cause temporary and minor impacts to landowners. In addition, Keystone would compensate agricultural landowners for actual crop losses. No change to dies.
214	Albert Olberding	47	10/2/2007	letter	ERO	Top soil must be protected from eroding when the creeks and streams are opened up for equipment to drive through.	Comment acknowledged. Keystone has agreed to have "all water body crossings ... assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration ... design of the crossings will also include the specification of appropriate stabilization and restoration measures." These measures should reduce flooding and erosion hazards.
215	Albert Olberding	47	10/2/2007	letter	FLD	Severe flooding in our area during construction of REX filled the trench for the pipeline and flooding washed the topsoil that was stockpiled over our alfalfa and corn.	Keystone's construction mitigation and reclamation plan includes provisions for sediment control, designed to reduce the risk that sediment would be transported out of the construction right-of-way. In the event that flooding does overcome these provisions, damage to productivity might ensue. Keystone has acknowledged its responsibility to compensate landowners for any decreases in productivity that result from pipeline operations.
216	J.D	48	10/2/2007	letter	VAL	I am concerned about future development of homes east of Seward.	Comment acknowledged. Relationship of project and housing development east of Seward is unclear. No change to DEIS.
217	J.D	48	10/2/2007	letter	RTE03	Several homes would be very close to the pipeline and several windbreaks would be destroyed. The route should be moved no closer than 3 miles east to hwy. 15 or 1 mile further east than proposed.	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills. Keystone has committed to working with landowners to find the best route though their individuals properties, within the constraints of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
218	Betty Jean Fisher	49	9/13/2007	letter	OIL	The oil interest is determined to trample up on and dig up and threaten our farmland with oil leaks.	Please refer to Section 3.13, Reliability and Safety, as well as Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis.
219	Betty Jean Fisher	49	9/13/2007	letter	ACK	The oil industry is associated with, and run by wealth, power, and control. The farming industry, on the other hand, is run for the most part by quiet, independent, hard-working people who prefer to mind their own business.	Comment acknowledged; no change to DEIS.
220	Betty Jean Fisher	49	9/13/2007	letter	ENR	There are alternatives for fuel, other than oil. being used and explored at present. However, there is not now, nor will there ever be, any replacement of precious food producing farmland.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
221	Betty Jean Fisher	49	9/13/2007	letter	ACK	Farming is basic to man's survival; and for the good of the entire state and nation, and needs to be protected at all costs. Any pollution of prime farmland is unacceptable.	Keystone has stated that "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." If productivity suffers due to pipeline construction or operation, that productivity loss should be compensated for, assuming that such a provision is written into the easement agreements.
222	Betty Jean Fisher	49	9/13/2007	letter	OIL	These oil pipelines are manmade and they do leak oil spills	Comment acknowledged. Please refer to the discussion of spill and leak frequency in section 3.13
223	Betty Jean Fisher	49	9/13/2007	letter	VAL	in addition to the oil threat, any easement permanently devalues the land.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
224	Betty Jean Fisher	49	9/13/2007	letter	RTE04	I simply do not believe that an acceptable alternative route for this proposed pipeline cannot be found. It must be found.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
225	Delmar Motycka	50	9/21/2007	letter	GBW	The Keystone Pipeline Draft EIS does not assess the potential environmental impact of increased green house gas emissions on atmospheric conditions resulting from the project.	See Section 3.12.1.3 of the DEIS for impacts related to the retrofit and expansion of the Wood River Refinery. Other refineries that would receive oil from the Keystone pipeline would be held to air emissions requirements of their existing air quality permits. Carbon emissions associated with petroleum refining are related to continuing market demand for refined petroleum products. The construction of the Keystone Pipeline does not create market demand, it responds to market demand.
226	Delmar Motycka	50	9/21/2007	letter	JUS	The Draft EIS fails to assess any environmental justice impact from the project. The Keystone Pipeline will be constructed through several of the poorest regions and counties in the United States. .	Environmental Justice is discussed in Sections 3.10.1.7 and 3.10.2.1. Data are shown in Table 3.10.1-8. As noted in Section 3.10.2.1, the Keystone Project and associated mitigation measures are not expected to result in adverse impacts that would fall disproportionately on minority or low-income populations located along the pipeline route. Moreover, project-related spending and tax revenues would result in substantial socioeconomic benefits in the region of influence, which may positively affect low-income and minority populations and Native American tribes through increased employment opportunities, income benefits, and improved public service levels. No change to DEIS.
227	Delmar Motycka	50	9/21/2007	letter	JUS	The purpose of the environmental justice analysis is to determine whether a project will have a disproportional adverse effect on minority and low income populations. To accomplish this, the agency must compare the demographics of an affected population that is those living with the project, with the demographics of a more general character (for instance, those of an entire state	Table 3.10.1-8 contains Environmental Justice statistics in affected communities along the Keystone Project route as well as corresponding state figures. No change to DEIS.
228	Delmar Motycka	50	9/21/2007	letter	WAT	The Draft EIS fails to assess the impact which the Keystone Pipeline will have on shallow groundwater and related surface waters in Colfax County.	Under normal operations the proposed Keystone pipeline would not impact shallow groundwater and nearby surface waters in Colfax County. Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation
229	Delmar Motycka	50	9/21/2007	letter	WAT	The size and location of the pipeline presents several significant threats to both ground and surface water on Mr. Motycka's farm. The proposed pipeline's location will result in a barrier to the established flow of shallow groundwater on Mr. Motycka's property. Mr. Motycka's relies on this groundwater to supply the two existing wells on his property. Moreover, the groundwater is crucial to the adjacent intermittent wetlands, which will experience significant changes due to the project.	After pipeline installation, the materials excavated from the pipeline ditch would be used to refill the ditch. The pipeline would not serve as a barrier to shallow groundwater movement. As described in Section 4.5 of Appendix B, trench plugs and sediment barriers would be used as appropriate to reduce water migration along the pipeline trench and to reduce siltation from pipeline construction activities.
230	Delmar Motycka	50	9/21/2007	letter	RTE05	Mr. Motycka's proposed solution to reduce the disruption caused by the project is a slight shift of the original proposed route to a southwest route that will relocate the pipeline to a point where it will cross Loeske Creek down stream from the existing natural springs and thereby avoid the wetlands as well as the ground water supplies to Mr. Motycka's wells.	Keystone would work with individual landowners to find the best route though their property within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
231	Delmar Motycka	50	9/21/2007	letter	CUL01	The Draft EIS fails to describe the nature extent and importance of archeological resources on the affected land. The permanent easement for the proposed pipeline will run over a probable pioneer gravesite. The Draft EIS fails to contain any description of the nature, extent and importance of any archeological resources on the land subject to either the construction of the pipeline or related easements.	Comment acknowledged. DOS will bring this information to the attention of applicant and see if this area was examined by their cultural resource contractor
232	Brenda Rottinghaus	51	10/4/2007	letter	NOI2	I am writing to you about PS #29. I don't understand why it needs to be placed between 4 homesteads less than 1/2 mile away. Will my clients hear a humming sound while they are at my place of business?	Location of PS-27 has moved about 4 miles. The distance to the nearest noise sensitive area is now 5,180 feet (no residences are within 1/2 mile). See Section 3.12.2.3 - It is estimated that that pump station will produce approximately 37 dBA at 5,000 feet - a slight increase in the existing sound level of 35 dBA. This is well under the standard of 55 dBA (outdoors). Generally, a 3 dBA change is considered a just-perceivable difference by humans with a change in level of at least 5 dBA required before any noticeable change in human response would be expected. Therefore, a less than significant impact would be expected at 5,180 feet.
233	Brenda Rottinghaus	51	10/4/2007	letter	PUM	I don't understand why we have not been notified about this pumping station coming in?	Some pump station locations have changed as a result of input to Keystone from landowners. The FEIS will include the latest information on proposed pump station, valve, and other ancillary facility locations. DOS provided notification to stakeholders concerning the proposed pipeline and appurtenant facilities through mailings to a mailing list of approximately 6000 individuals and organizations, notification in the Federal Register, informational mailings to newspapers and radio stations, thirteen scoping meetings, publication and distribution of the DEIS in either hard copy or digital format, publication through the DOS Keystone website, and thirteen subsequent DEIS comment meetings.
234	Brenda Rottinghaus	51	10/4/2007	letter	NOI2	We just built our house 1.5 years ago to be out in the country where it is quiet.	Location of PS-29 has moved about 2 miles. There are now only 4 residences within 1/2 mile. See Section 3.12.2.3 - It is estimated that that pump station will produce approximately 39 dBA at 2,600 feet - a slight increase in the existing sound level of 35 dBA. This is well under the standard of 55 dBA (outdoors). Generally, a 3 dBA change is considered a just-perceivable difference by humans with a change in level of at least 5 dBA required before any noticeable change in human response would be expected. Therefore, a minimal impact would be expected at 1/2 mile.
235	Brenda Rottinghaus	51	10/4/2007	letter	VAL	What will this pumping station do to my value of my house or my hair salon business?	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
236	Brenda Rottinghaus	51	10/4/2007	letter	NOI2	Would love to know where one of these pumping stations are so we could go visit and judge with our own ears what to expect.	More noise data is added to Section 3.12.2.2 and Section 3.12.2.3 and Table 3.12.2-1 to quantify noise levels expected at different distances.
237	Samuel Rottinghaus	52	10/4/2007	letter	NOI2	My family and I own and live in a house that is less than 1/4 mile from the proposed site of PS#29. Even though we do not live on the proposed easement for PS #29, we will be directly affected by it. Four homesteads are within 1/4 mile or less from this site. Surely there is a location further east or west.	Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels. See Section 3.12.2.3.
238	Samuel Rottinghaus	52	10/4/2007	letter	ACK	The pipeline passing through our neighborhood doesn't concern me. The placing of PS#29 does.	Comment acknowledged. Some pump station locations have changed as a result of input to Keystone from landowners. The FEIS will include the latest information on proposed pump station, valve, and other ancillary facility locations.
239	Samuel Rottinghaus	52	10/4/2007	letter	VAL	It is our contention that placing a 55 decibel electrical station near here will not only depress business but also lower our property value	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
240	Samuel Rottinghaus	52	10/4/2007	letter	LIA	Is keystone wiling to compensate us for lost business revenue and depressed property value due to he proximity of PS#29?	See Section 3.12 of the FEIS for assessment of noise impacts.
241	Samuel Rottinghaus	52	10/4/2007	letter	ACK	Keystone is willing pay landowners 5 times current market value for the land. They are willing to overcompensate farmers for lost crops. When this thing is built they will be no worse off than they were before, but we will be stuck living next to this thing.	Comment acknowledged; no change to DEIS.
242	Samuel Rottinghaus	52	10/4/2007	letter	ACK	We feel it is only fair that a Keystone representative contact us and our neighbors and discuss this issue before the legal system is accessed.	Comment acknowledged; no change to DEIS.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
243	Samuel Rottinghaus	52	10/4/2007	letter	PUM	No one has informed us of anything related to the pump station location.	Some pump station locations have changed as a result of input to Keystone from landowners. The FEIS will include the latest information on proposed pump station, valve, and other ancillary facility locations. DOS provided notification to stakeholders concerning the proposed pipeline and appurtenant facilities through mailings to a mailing list of approximately 6000 individuals and organizations, notification in the Federal Register, informational mailings to newspapers and radio stations, thirteen scoping meetings, publication and distribution of the DEIS in either hard copy or digital format, publication through the DOS Keystone website, and thirteen subsequent DEIS comment meetings.
244	Samuel Rottinghaus	52	10/4/2007	letter	ACK	We would like to work with Keystone, not against them.	Comment acknowledged; no change to DEIS.
245	Dean and Lana Bell	53	10/4/2007	letter	SOI	We would like to express our concern as to how the heated oil in the pipeline will affect the soil. A constant temperature of 140° 365 days a year is bound to dry out the soil and after time will continue to radiate out and affect more soil.	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
246	Dean and Lana Bell	53	10/4/2007	letter	VAL	Crop damage will likely continue to show up after a few years, not just the first year or two after installation.	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
247	Dean and Lana Bell	53	10/4/2007	letter	LIA	There must be some type of commitment by the oil company. Some sort of guarantee that any further problem or damage will be rectified and the landowner will not be left with no recourse.	Section 4.15 of Keystones CMR (Appendix B) states that the landowner would be compensated for erosion impacts, trench depressions and decreased crop yields. Section 4.14.4 describes Keystone's landowner complaint resolution procedures.
248	Dean and Lana Bell	53	10/4/2007	letter	WET	Another concern is the wetland on our property. Cleanup of the wetland would be nearly impossible because of the standing water and grass cover.	Wetland construction methods are described in Keystone's Construction and Mitigation Plan. Techniques which would be used in flooded wetlands are described in this plan and on page 3.4-14 and include: no top soil stripping, pipe stringing and fabrication located outside of the wetland area, pipe would be pushed or pulled across the wetland, and pipe floatation may be used.
249	Dean and Lana Bell	53	10/4/2007	letter	OIL	An oil spill would be devastating to any soil, but more importantly there is the risk to wildlife that inhabits the area.	Risk of impacts to wildlife from oil spills are addressed in Section 3.13 Reliability and Safety. Comment acknowledged.
250	Gene Hofer	54	10/4/2007	letter	EXP	Why does keystone have their percent of leaks so far below industry averages?	The industry statistics are based on leaks from all pipelines including many that have been in operation for years to decades. Older pipelines may not have been constructed to current standards, maintenance procedures may not have been as stringent as current ones, and therefore failure rates are more likely to occur in these older pipelines. Keystone pipeline will be built to current standards which have resulted in a steady decrease in the number and size of spills in the last few years (see Section 3.13 of EIS and Appendix L).
251	Gene Hofer	54	10/4/2007	letter	OIL	The question leaks is not if but when, where and how much.	Comment acknowledged. Please refer to the discussion of spill and leak frequency in section 3.13
252	Gene Hofer	54	10/4/2007	letter	WAT	If a leak happens on my land how will it affect Rock Creek or my 120 ft well.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
253	Gene Hofer	54	10/4/2007	letter	OIL	If there is a leak, will the land on top of the pipeline produce like before or will it be a dead zone?	Spill effects on vegetation are addressed in Section 3.13.5.5. Spill cleanup and restoration activities would be directed by state and federal agencies after a spill has occurred. Soil remediation would likely be required, but may not fully restore soil productivity.
254	Rick Hanschu	55	10/4/2007	letter	WAT	If I run a 1" water line across the easement after the Keystone Line is in will I be able to place it 3 feet deep across the top of Keystone's line since it is my land?	This is an easement negotiation issue that is not part of the scope of the EIS.
255	Rick Hanschu	55	10/4/2007	letter	LIA	After the project is complete who is responsible for filling in the trench after 3-4 years of dirt settling in trench in my pasture?	Section 4.15 of keystone's CMR states that trench depressions on ditch line which may interfere with natural drainage, vegetation establishment or land use shall be repaired as expediently as practicable by Keystone or by compensation of the Landowner to repair the area.
256	Rick Hanschu	55	10/4/2007	letter	LIA	Who will pick up the rock that is left on top of the ground if landlord cannot or does not want to do it himself or herself?	Section 2.10 of Keystones CMR states that the Contractor shall remove all extraneous vegetative, rock and other natural debris from the construction right-of-way by the completion of clean-up.
257	Rick Hanschu	55	10/4/2007	letter	VAL	How close to the pipeline will I be able to build a fence or a building after the pipeline is in?	Construction of the project would not change the general use of the land, but would preclude construction of above ground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. No change to DEIS.
258	Richard Starke	56	9/24/2007	letter	ENR	US farmers are able to produce enough clean bio fuels to replace any imported sludge petroleum and will enable both gasoline and bio fuels to be exported by 2015. Heavy (sour) crude does not have to be extracted from the earth's mantle with the emergence of the fuels of the future, home grown capture of the energy of the sun by plants, Brazil has been using ethanol and bio diesel for many years.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
259	Richard Starke	56	9/24/2007	letter	RTE03	The draft EIS does not adequately address alternative routes such as the idle rights of way of I-29 and Hwy 32.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
260	Richard Starke	56	9/24/2007	letter	OIL	The draft does not address the damages caused by a large oil spill or explosion as have occurred in the history of TransCanada	Impacts of large oil spills are discussed in sections 3.13.4.4 3.13.4.5, 3.13.4.6 and 3.13.5. Explosions are extremely unlikely with a crude oil pipeline as compared to a natural gas pipeline.
261	Richard Starke	56	9/24/2007	letter	WAT	A catastrophic spill on the vicinity of the NE 1/4 section 30-140 range 57 Barnes County would flow downhill about 250 ft in three miles o Valley City and the Sheyenne River. Should this occur during spring runoff the time would be about 10 minutes. The town's 12,000 inhabitants deserve protection from such an avoidable disaster.	If a spill or leak occurs, crude oil will flow downhill via overland flow. Oil will spread laterally in flat terrain and will pool in depressions. According to Keystone, dispersal of crude oil is generally limited to the trench or within a few hundred feet of the trench. Oil can travel further in steep terrain and channels, but without water to convey the crude oil, dispersal is limited to no more than 0.5 mile even with large spills (ENSR, 2007). 250 vertical feet over three miles is only a 1.6% slope and would not be considered steep terrain. Based on this it is unlikely that oil transported by overland flow would reach Valley City and Lake Ashtabula.
262	Richard Starke	56	9/24/2007	letter	RTE03	Use of prime farmland instead of idle State-owned rights of way is not efficient use of property.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
263	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	The department concurs with the recommendations presented in the Draft EIS and expects TransCanada to implement those recommendations as they apply to South Dakota.	Comment acknowledged.
264	SD DENR Brian Walsh	57	9/20/2007	letter	REG	Section 2.1.1.2 Aboveground Facilities - Pump Stations The last paragraph on page 2-2 discusses TransCanada's use of 200-gallon gasoline tanks located at each pump station. Based on the description provided it is unclear if those tanks are regulated under the department's tank rules. Prior to installation of the tanks in South Dakota, TransCanada should contact the department's tank program to determine the applicable tank regulations.	Updated Section 2.1.1.2 to state tanks would meet applicable regulations.
265	SD DENR Brian Walsh	57	9/20/2007	letter	REG	Section 2.1.1.3 Ancillary Facilities - Pipe Storage and Contractor Yards Page 2-7 discusses TransCanada's use of fuel transfer stations located at their contractor yards. According to the EIS, these stations will include two or three 10,000 gallon above ground fuel storage tanks. Based on the description provided it is unclear if those tanks are regulated under the department's tank rules. Prior to installation of the tanks in South Dakota, contact the department's tank program to determine the applicable tank regulations.	Updated Section 2.1.1.3 to state tanks would meet applicable regulations.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
266	SD DENR Brian Walsh	57	9/20/2007	letter	ERP	Section 2.2 Construction Procedures - Keystone's Emergency Response Plan When does the Department of State anticipate receiving a final Emergency Response Plan from TransCanada? In addition, the department recommends waiting to finalize the Draft EIS until a finalized Emergency Response Plan is submitted and reviewed.	The Draft Emergency Response Plan (Appendix C) will be finalized prior to initiation of pipeline operations. At the present time the pipeline project is still in the project planning, engineering and permitting phase and many of the operational details need for Emergency Response Planning have not yet been finalized. The Final Emergency Response Plan will be written to comply with 49CFR194 -Response Plans for Onshore Pipelines. The plan will be submitted to the Research and Special Programs Administration of U.S. Department of Transportation for review and approval as required.
267	SD DENR Brian Walsh	57	9/20/2007	letter	OIL	Section 2.3.1 Normal Operations and Routine Maintenance The third paragraph in the section describes the capabilities of the SCADA system monitoring pipeline operations. One of the capabilities is remote closing and opening of mainline valves. Does TransCanada have the ability to remotely close or open all of the mainline valves? If not, the department recommends TransCanada construct the mainline valves so they can all be remotely controlled to minimize impacts due to a pipeline release	There are some mainline valves that will not be remotely operated. However, at these locations the manually operated mainline valves will be installed in conjunction with a check valve, which instantaneously closes in the event of a drop in pressure upstream of the check valve. In essence, the manual mainline valve and check valve combination have the same functionality as a remotely controlled mainline valve. Updated Section 2.1.1.2.
268	SD DENR Brian Walsh	57	9/20/2007	letter	OIL	Section 2.3.3 Abnormal Operations The first paragraph in this section discusses pipeline shutdown in the event of a suspected leak. Include in this paragraph information on the amount of time it would take for TransCanada to shut down the pipeline if a leak is suspected.	Information on length of time to shut down has been requested of Keystone and will be included in the FEIS when received.
269	SD DENR Brian Walsh	57	9/20/2007	letter	OIL	Section 2.3.3 Abnormal Operations The third paragraph in this section describes the smallest leak detectable by the pipeline SCADA system. Include in this paragraph an estimate of what the smallest detectable leak volume would be in barrels assuming initial pipeline capacity of 435,000 barrels per day.	Updated section to include values - See Section 2.3.2.
270	SD DENR Brian Walsh	57	9/20/2007	letter	ERP	Section 2.3.2.1 Emergency Response Procedures The first paragraph on page 2-37 states that Keystone will make timely notifications to state agencies and local authorities in the event of a crude oil release. State of South Dakota Codified Law and Administrative Rule require any person who causes a discharge of a regulated substance to report the discharge to the department immediately. In addition, a responsible person shall report a suspected discharge to the department within 24 hours after the discharge is suspected. During regular business hours, discharges can be reported by calling (605) 773-3296 and after hours by calling (605) 773-3231. These reporting requirements and phone numbers should be incorporated into Keystone's Emergency Response Plan.	Comment noted. The Draft Emergency Response Plan (Appendix C) will be finalized prior to initiation of pipeline operations. At the present time the pipeline project is still in the project planning, engineering and permitting phase and many of the operational details need for Emergency Response Planning have not yet been finalized. The Final Emergency Response Plan will be written to comply with 49CFR194 -Response Plans for Onshore Pipelines. The plan will be submitted to the Research and Special Programs Administration of U.S. Department of Transportation for review and approval as required.
271	SD DENR Brian Walsh	57	9/20/2007	letter	EDT	Section 2.3.2.1 Emergency Response Procedures The second paragraph on page 2-37 states under the National Contingency Plan the EPA is the lead federal response agency for oil spills. This is correct; however, in South Dakota the state Department of Environment and Natural Resources takes the lead role on petroleum releases. The state would direct the cleanup effort and the responsible party would be required to continue cleanup until all applicable state standards are met.	Updated section to includes state agency roles along with EPA. See Section 2.3.2.1.
272	SD DENR Brian Walsh	57	9/20/2007	letter	EDT	Section 3.2.2.1 Construction Impacts In the second full paragraph on page 3.2-9, add the following text to the end of the sentence beginning with "In the event that a spill does occur...." ...and comply with applicable state cleanup standards."	Comment acknowledged. Final EIS will be so amended.
273	SD DENR Brian Walsh	57	9/20/2007	letter	WAT	Section 5.3.1 Conclusions This section should contain a discussion about impacts to water resources from larger crude oil spills. Include a brief discussion on the likelihood of a large release and the mitigation and response measures in place to deal with a large release.	Comment acknowledged. This information is provided in section 3.13 and summarized in Section 5.13
274	SD DENR Brian Walsh	57	9/20/2007	letter	ERP	Appendix C Emergency Response Plan The final Emergency Response Plan should include the following spill response contact information for South Dakota. South Dakota Department of Environment and Natural Resources . 523 E. Capitol Ave. Pierre SD 57501 (605) 773-3296 (M-F 8:00 - 5:00) (605) 773-3231 (after hours) In addition, the final Emergency Response Plan should list the locations of the emergency response teams or emergency response contractors along the pipeline, the capabilities of each team, and their ability to respond to catastrophic pipeline failures. For example, where is the nearest response team to the Missouri river crossing at Yankton and are they equipped to respond to a catastrophic release affecting the river?	Comment noted. The Draft Emergency Response Plan (Appendix C) will be finalized prior to initiation of pipeline operations. At the present time the pipeline project is still in the project planning, engineering and permitting phase and many of the operational details need for Emergency Response Planning have not yet been finalized. The Final Emergency Response Plan will be written to comply with 49CFR194 -Response Plans for Onshore Pipelines. The plan will be submitted to the Research and Special Programs Administration of U.S. Department of Transportation for review and approval as required.
275	SD DENR Brian Walsh	57	9/20/2007	letter	REG	Appendix L Pipeline Risk Assessment Page 4-4 lists the South Dakota soil cleanup level for benzene as 17 ppm. This is incorrect. In South Dakota, the Tier 1 action level for benzene in soil is 0.2 ppm. If contamination levels exceed 0.2 ppm additional investigation is required and a final benzene cleanup level will be determined based on risk.	Comment acknowledged. Text in FEIS is revised and corrected.
276	SD DENR Brian Walsh	57	9/20/2007	letter	REG	In the event TransCanada encounters abandoned solid waste burial sites during construction of the pipeline the wastes must be handled according to applicable state laws and regulations. If this occurs, please notify the department's Waste Management program at (605) 773-3153	Comment accepted. Text added to Chapter 2.2 - under Construction Procedures to reflect this comment.
277	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	All fill material shall be free of substances in quantities, concentrations, or combinations that are toxic to aquatic life.	Added statement to Section 2.2.1.2.
278	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	Removal of vegetation shall be confined to those areas absolutely necessary to construction.	Comment accepted. Text added to Chapter 2.2.1.2 - under Clearing and Grading. to reflect this comment.
279	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.	Comment accepted. Text added to Chapter 2.2.1 - under Pipeline Construction to reflect this comment.
280	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	All material identified in the application as removed waste material, material stockpiles, dredged or excavated material shall be placed for either temporary or permanent disposal in an upland site that is not a wetland, and measures taken to ensure that the material cannot enter the watercourse through erosion or any other means.	Comment accepted. Text added to Chapter 2.2.4 - under Wetlands to reflect this comment.
281	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	Methods shall be implemented to minimize the spillage of petroleum, oils and lubricants used in vehicles during construction activities. If a discharge does occur, suitable containment procedures such as banking or diking shall be used to prevent entry of these materials into the waterway.	Comment accepted. Text added to Chapter 2 to reflect that the CMR (Appendix B) covers this in great detail.
282	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	All newly created and disturbed areas above the ordinary high water mark that are not rip rapped shall be seeded or otherwise revegetate to protect against erosion.	Comment acknowledged. Keystone has committed to reseeding distributed areas as discussed in Appendix B of the FEIS.
283	SD DENR Brian Walsh	57	9/20/2007	letter	PER	A Surface Water Discharge (SWD) permit may be required if any construction dewatering should occur as a result of the project. Please contact this office for more information. If you have any questions, please contact Al Spangler at 1-800-SDSTORM (737-8676).	Comment acknowledged. This permit requirement is described in Table 1.6-1
284	SD DENR Brian Walsh	57	9/20/2007	letter	PER	A Surface Water Discharge permit for discharge of hydrostatic water may be required. If ,you have any questions, please contact Al Spangler at 1-800-SDSTORM (737-8676).	Comment acknowledged. This permit requirement is described in Table 1.6-1
285	SD DENR Brian Walsh	57	9/20/2007	letter	PER	Surface water bodies are protected under the South Dakota Surface Water Quality Standards. The discharge of pollutants from any source, including indiscriminate use of fill material, may not cause destruction or impairment except where authorized under Section 404 of the Federal Water Pollution Control Act. Please contact the U.S. Army USACE of Engineers concerning this permit.	Comment acknowledged. This permit requirement is described in Table 1.6-1
286	SD DENR Brian Walsh	57	9/20/2007	letter	MIT	The South Dakota Surface Water Quality Standards must not be violated. If it appears that violations may occur, corrective actions must be taken immediately.	Comment acknowledged. No change to DEIS.
287	SD DENR Brian Walsh	57	9/20/2007	letter	PER	A Water Rights permit or a temporary permit to use water for construction purposes may be required.	Comment acknowledged. This permit requirement is described in Table 1.6-1
288	SD DENR Brian Walsh	57	9/20/2007	letter	AIR01	ES.6.12 Air Quality In the last sentence of paragraph two on page ES-25, it states that "Because operating emissions are expected to be minimal, no operational permits would be required." If the New Source Performance Standard under 40 CFR Part 60, Subpart IIII is applicable to the backup gasoline powered generators, this sentence will need to be revised because an air quality permit will be required in South Dakota for each backup gasoline powered generator stationed in South Dakota.	The generators appear to be subject to proposed rule 40 CFR 60 Subpart JJJJ (not yet final). The rule provides an exemption from Title V for area sources. Unless states have more stringent Title V regulations, they will continue to be exempt from Title V. Added to Section 3.12.1.2.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
289	SD DENR Brian Walsh	57	9/20/2007	letter	AIR01	In Section 3.12.1.2 on page 3.12-6, 40 CFR Part 60, Subpart Kb and XX are discussed and then the last sentence states "No other subparts would apply because the proposed Keystone Project does not include construction or operation of any specific source categories of air pollutants." However, the Keystone Project will install backup gasoline powered generators (5 kilowatts) that may be subject to Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. The EIS should address the applicability of this subpart. On page 3.12-7, it states that the Keystone Project would not trigger Title V permitting. If the generators are required to meet 40 CFR Part 60, Subpart IIII, an air quality permit would be required in South Dakota for each backup gasoline powered generator located in South Dakota.	The generators appear to be subject to proposed rule 40 CFR 60 Subpart JJJJ (not yet final). The rule provides an exemption from Title V for area sources. Unless states have more stringent Title V regulations, they will continue to be exempt from Title V. Added to Section 3.12.1.2.
290	SD DENR Brian Walsh	57	9/20/2007	letter	WAT	Section 3.9.3.2 Agricultural Land - Surface and Subsurface Drainage, Ponds, Waterlines, and Drainage Ditches The fourth paragraph on page 3.9-13 discusses the backfill procedures between the Keystone pipeline and a waterline. Ensure that backfill material will not be subject to settlement and transfer additional stress to existing waterlines being crossed. Backfill materials should be granular or flow able fill type materials to ensure that adequate support of the existing waterline is provided.	Comment acknowledged; DEIS text changed to include description of appropriate fill materials to support existing waterlines, as suggested.
291	SD DENR Brian Walsh	57	9/20/2007	letter	OIL	Section 3.13.4.3 Types of Oil Spill Impacts - Physical Impacts Page 3.13-15 should include a bullet that addresses impacts to existing infrastructure facilities in spill area. Waterlines that are located in soils that have been contaminated from an oil spill require special design considerations. Existing waterlines may be required to be replaced with materials and gaskets resistant to contaminated soil properties.	According to AWWA research, permeation of PVC and ductile iron water mains by hydrocarbons released to the environment is unlikely. (Gaunt et al, 2006). For instance, PVC pipe can be used safely in soils contaminated with gasoline regardless of contamination level (Gaunt et al, 2006).
292	MO DOT Tom Skinner	58	8/31/2007	letter	PER	Where the pipeline crosses MoDOT right of way a permit will be required for each crossing. Work cannot begin until District 1 issues a permit. The owner will be required to submit construction drawings reflecting the details of the proposed crossing from right of way line to right of way line.	Comment acknowledged. This permit requirement is described in Table 1.6-1
293	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	MoDOT may permit the owner to construct a temporary entrance at minor road crossings for cross road access within the construction corridor. Each proposed crossing shall have an appropriate flagger traffic control plan established according to the MUTCD.	Comment acknowledged. This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
294	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	The state route shall be protected from the abuse of heavy equipment crossing the road, and if necessary, the contractor will be required to repair the state route to MoDOT's satisfaction. No cross road access will be permitted from the I-29 or I-35 Interstate roadway corridors.	Comment acknowledged. This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
295	MO DOT Tom Skinner	58	8/31/2007	letter	PER	The construction guidelines presented in Figure 2.2-3, Typical Uncased Road or Railroad Crossing – Bored, will apply to all roadway crossings. In general, the permit issued by District 1 will included as a minimum the following stipulations. • A permit will be required for each crossing. • The road crossing pipe shall extend from right of way line to right of way line. • The construction plans submitted with the permit application shall indicate the type and minimum length of pipe required for each crossing. • The pipe for bored crossings shall have an abrasion-resistant coating. • The pipeline crossing shall be clearly marked and identified on each right of way line. • The crossing shall be straight with no vertical or horizontal bends even if the pipe is constructed using the trench and fill method.	Individual permitting agencies would condition their permits with additional stipulations as appropriate. This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed.
296	MO DOT Tom Skinner	58	8/31/2007	letter	PER	A pipeline using the existing utility corridor, which crosses Buchanan, Clinton and Caldwell counties in District 1 will most likely cross the following state routes: Buchanan County – US 59, State Route JJ, State Route V, State Route 371, I-29, Route A, State Route FF, US 169, state Route E, State Route VV; Clinton County – Route K, State Route Y, State Route 33, State Route A, I-35, US 69; Caldwell County – State Route Z, State Route D, State Route T, State Route 13, State Route 116, State Route B, State Route E, State Route A. A permit will be required for each route in each county.	This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed.
297	MO DOT Tom Skinner	58	8/31/2007	letter	MIT	All work shall be done in accordance with the Commission's Policy of Location of Utility Facilities on State Highways.	Comment acknowledged. This will be handled in the permitting process for crossing state highways.
298	MO DOT Tom Skinner	58	8/31/2007	letter	MIT	The established Missouri One Call System shall be used prior to starting work.	Comment acknowledged.
299	MO DOT Tom Skinner	58	8/31/2007	letter	MIT	All right of way shall be restored to its original condition after completing the work at each site	Keystone will restore all ROW besides that used for aboveground facilities - See Section 2.1.3.
300	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	Appropriate devices shall be used to protect the roadway surface when tracking equipment across the roadway.	Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
301	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	Any damage to the roadway shall be reported immediately to District 1 and shall be repaired at the contractor's expense.	Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
302	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	Any road closure for the movement of equipment or any other construction activity shall be limited to a maximum of 15 minutes	Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
303	MO DOT Tom Skinner	58	8/31/2007	letter	MIT	No equipment shall be stored on MoDOT right of way. All bore pits should be placed off MoDOT right of way unless conditions require otherwise. District 1 must approve the location of any bore pit on MoDOT right of way	This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed.
304	MO DOT Tom Skinner	58	8/31/2007	letter	MIT	The proposed 30" diameter pipe must be buried a minimum 4 feet below the bottom of the roadway ditch flow line.	Comment acknowledged. Keystone intends to use 48 to 60 inches as set out in Table 2.2.1. No change to DEIS.
305	MO DOT Tom Skinner	58	8/31/2007	letter	PER	Erosion control and traffic control plans must be submitted with each permit application. Plans shall follow MoDOT's Engineering Policy Guide and the Manual on Uniform Traffic Control Devices (MUTCD) for Traffic Control.	This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed.
306	MO DOT Tom Skinner	58	8/31/2007	letter	MIT	Observation holes must not exceed a maximum diameter of 10" when exposing buried lines within the roadway median. Any facility exposed shall be protected throughout the project and shall be restored within 7 days. The hole shall be clean and dry prior to backfilling and the site restored to the original condition or better.	This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed.
307	MO DOT Tom Skinner	58	8/31/2007	letter	PER	The owner will complete daily reports and submit the reports to District 1 on a weekly basis.	This will be handled in the permitting process for crossing state highways. Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed.
308	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	Temporary entrances will have a maximum width of 30 feet. Each temporary entrance shall have a 15" diameter by 40' long pipe for drainage. Any temporary entrance on MoDOT right of way shall be constructed in accordance with the TYPE I Driveway standard plan sheet. The contractor will be permitted to install the amount and size of pipe necessary for large equipment to enter and exit the entrance safely. The entrance shall be graded to direct drainage to the roadway ditch and not the roadway. All temporary entrances shall be removed within six months after they are constructed. Temporary entrances will not be permitted on limited access right of way.	Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
309	MO DOT Tom Skinner	58	8/31/2007	letter	RUR	The state road system shall be kept clean at all times.	Keystone and Missouri DOT will confer to establish appropriate procedures to be used and reports to be filed. No change to DEIS.
310	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	WAT	The Keystone pipeline crosses the eastern slope of the James River watershed throughout the state, The region contains some of the richest wetlands of the state as well as several aquifers used for drinking water. All drainage of surface waters throughout this region is to the James River. Oil pipelines leak! TransCanada has not proven that a crude oil spill in or around any of these surface waters, or a spill in the area of the shallow aquifers would not pollute the water in violation of the water quality standards.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
311	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	WAT	Also the pipeline crosses over or near several ground water aquifers in the area. Among the aquifers identified by TransCanada that lie close to ground surface include: The Oakes Aquifer in the Marshall County area with a depth to water of 10-15 feet. The upper layer of water of the Altamont aquifer near Raymond in Clark County varies from 10-35 feet below surface	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
312	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	OIL	Crude oil contains several highly toxic small weight chemicals including benzene, toluene, ethylbenzene, and xylene that rapidly disperse in water and wet soils. These chemicals are regulated contaminants in both surface and ground Water by USEPA and South Dakota water quality standards. The enforceable standard for benzene is 0.005 parts per million.	Please refer to Section 3.13, Reliability and Safety, as well as Appendix C, Emergency Response Plan, and Appendix L, Risk Assessment and Environmental Consequence Analysis.
313	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	PIP	Our concern that pollution of these water resources is heightened due to recent information that TransCanada has been wanted a waiver to use a thinner walled pipe. The thinner walled pipe lowers the safety of operating high pressure oil pipelines.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
314	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	PIP	The EIS must address the increased risk of operating the pipeline as a result of reducing the materials standard for the high pressure keystone Oil Pipelines.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
315	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	T&E	Several locations along the route of the pipeline have been identified as high quality habitat for two federally protected species, the Western Prairie Fringed Orchid and Dakota Skipper. The pipeline also crosses the habitat of the endangered Topeka Shiner. The pipeline is proposed to pass through nesting sites of the federally protected Bald Eagle. Construction of the pipeline over this habitat threatens the survival of these species. The operation of the pipeline with spills and leaks of toxic: crude oil products would further threaten these species in the vicinity of the pipeline route.	USFWS will issue a Biological Opinion which will evaluate the impacts associated with construction and operation of the Keystone Project on the Western Prairie Fringed Orchid, the Dakota skipper, the Topeka Shine and the Bald Eagle. USFWS will determine if the impacts associated with this project would jeopardize the continued existence of these species and other protected species occurring along the pipeline route. If the project resulted in a jeopardy finding for any federally protected species, federal agencies would not be allowed to issue permits to construct the pipeline.
316	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	HYP	The EIS must describe the plans and environmental impacts for the connections between the Keystone pipeline and the Hyperion Oil Refinery.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
317	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	ENR	We are asked to believe that this crude oil pipeline will contribute to meet energy needs and solve the nation's energy problem. Conservation and efficient use must be a part of the solution to the energy problem.	Conservation and community planning would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
318	George Piper SD Resources Coalition (NGO)	59	9/20/2007	letter	ENR	Development of the Keystone Crude Oil Pipeline and Hyperion Refinery fly in the face of an emerging national energy policy that advocates reducing the burning of carbon producing energy resources that cause global warming, The EIS should give full discussion to non-carbon producing energy production, and conservation.	Alternative energy sources and conservation of existing sources would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources. The proposed Hyperion Refinery is at this time highly speculative, and in any case is not a connected action to the Keystone Pipeline.
319	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	WET	The DEIS includes a Construction Mitigation and Reclamation Plan, which includes methods for reconstruction of wetlands and operation and maintenance plans, but lacks specific detail to the amount of compensatory mitigation. It does include the amount of impacts to wetlands and the ratios being used when figuring mitigation, but no final numbers. In Missouri, ratios of 2: 1-6: 1 were recommended for permanent wetland impacts.	Added the recommendation for the identification of compensation sites within the wetland monitoring plan to additional measure in Section 3.4.3 on page 3.4-15. The monitoring plan and compensation sites would need to be developed by Keystone in consultation with state and federal agencies before it could be included in the FEIS.
320	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	WET	The department's previous comments of April 27, 2007 included the Missouri Stream Mitigation Method and the State of Missouri Aquatic Resources Mitigation Guidelines. The applicant should follow these guidelines when determining mitigation.	Added the recommendation for following the Missouri Stream Mitigation Method and the State of Missouri Aquatic Resources Mitigation Guidelines to additional measures for crossing these resources in Missouri.
321	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	WET	Delineation of jurisdictional and non-jurisdictional wetlands must be completed prior to the issuance of required permits. The department will require the applicant to complete a final mitigation plan and wetland delineation.	Comment acknowledged.
322	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	MIT	The DEIS systematically discussed the various species and habitats that would be affected. Specifics related to mitigation were principally deferred for later discussion with the relevant agencies, especially as relates to individual species. Reviewers will be able to comment on the adequacy or appropriateness of the mitigation for these biological elements only after the decisions are reflected in the document. The draft EIS does not provide sufficient information to evaluate those actions. The department recommends that reviewers have the opportunity to evaluate the proposed actions before the EIS is finalized. Having this information available in a draft document would provide the opportunity to integrate significant comments and resolve any issues and concerns prior to publication of a final document.	Mitigation measures committed to by Keystone were described in Sections 3.4 to 3.8 of the DEIS. Specific decisions on any compensatory mitigation or additional mitigation measures would be negotiated with individual federal and state agencies during the project permitting phase, which would happen after completion of the FEIS. The purpose of the EIS is to disclose impacts of the Keystone project to the environment. Any further mitigation that occurs after completion of the FEIS would further reduce or compensate for the impacts as described in the EIS.
323	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	CME01	The DEIS indicates that none of the wetlands crossed by the Keystone project would be permanently filled or drained. If this is the case, the contribution of the Keystone project on cumulative effects to wetlands in the project area should be minimal.	Comment acknowledged.
324	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	WET	There will be cumulative impacts on wetlands in locations where the Keystone project and Rockies Express (REX) pipelines or other construction projects are collocated while crossing wetlands. The REX project will be collocated with the Keystone pipeline for about 280 miles in Missouri. Both of these projects must employ mitigation measures to protect wetlands. The Federal Energy Regulatory Commission (FERC) procedures would apply to the REX project.	Construction impacts to wetlands would be mitigated through procedures identified in Keystone's CMR Plan (Appendix B) as amended prior to construction by additional mitigation measures agreed to by Keystone through the NEPA process. Federal easement wetlands may require additional mitigation measures as determined during pipeline easement negotiations between the land managers and Keystone. Jurisdictional wetlands may also require additional mitigation measures as determined through permit conditions applied by the appropriate regulatory agency.
325	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	VIS	Page 3.14-6 in section 3.14.3.9 Land Use, Recreation and Special Interest Areas, and Visual Resources: "Because the Jones-Confluence Point State Park is located east of the section of the Keystone pipeline that is collocated with REX, the park would not experience cumulative impacts from the projects." While there may be no cumulative impact to Confluence from the combined location of Keystone and REX pipelines, Keystone itself follows existing ROW within the park from two other existing pipelines and a transmission line. The cumulative impact of adding yet another pipeline to this corridor would increase the footprint of the multiple ROWs in this area. This means that there will be an additional linear clearing upon which no trees will be allowed to grow and upon which permanent maintenance activities will remove most of the vegetation. As described on page 3.9-30, this permanent vegetative removal would "...result in long-term impacts on vegetation and would induce habitat fragmentation, which would decrease enjoyment of public recreation."	As noted, the park is located to the east of the section of the Keystone pipeline that is colocated with REX and would not be impacted by both. By staying within existing ROWs that are already cleared and maintained as such, no to minimal additional area will be cleared for Keystone, therefore there will be no cumulative effects due to Keystone within the park.

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326	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	VIS	Additionally, as specified on page 3.9-35, "Removal of trees along both the permanent and construction ROWs would leave a highly visible deforestation line that would persist for the duration of the pipeline operation. The visual impact related to the construction ROW is considered long term and significant, while the visual impact related to the permanent ROW is considered permanent and significant." Because of the significance and permanence of the visual impact, the EIS needs to address the cumulative impacts of the Keystone pipeline adding to the overall ROW footprint in the park, not just that it won't impact the park in conjunction with the REX pipeline. The potential for adding additional pipelines and utility easements in the future through the park is a distinct possibility and will only exacerbate this issue. The department recommends that the EIS include a specific discussion of cumulative impacts in the park. At some point, the park will reach its saturation point for adding additional ROWs, significantly diminishing its ability to implement restoration and other resource management initiatives.	The significance determination for visual resources in forested areas has been changed in the DEIS text. It now reads that impacts would be "permanent, but localized" for the permanent ROW, and "long-term, but localized" for the construction ROW. This change was made based on further evaluation of the extent, intensity, duration, and frequency of the potential impact on forested areas. Keystone has completed a site-specific crossing plan for the Confluence Point area since the DEIS was published, and has re-routed the pipeline within Confluence Point State Park. The cumulative impacts section dealing with visual impacts has been amended as suggested.
327	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	MIT	The department recommends that the applicant closely coordinate construction activities with Jones-Confluence Point State Park staff. The department would like to see alternative routing to avoid the tree planting sites and to avoid impact on the Boltonia swale.	Keystone has re-routed the pipeline within Confluence State Park to avoid an area of recently planted of hardwood trees and an area where decurrent false aster were located. The project still crosses Confluence Point State Park. Section 3.09 (Land Use, Recreation, and Visual Resources) includes a mitigation measure recommending consultation with public land managers to minimize the impacts of construction and operation. Keystone has also adopted a site-specific crossing plan in consultation with affected federal and state agencies for the confluence area since the DEIS was published.
328	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	WAT	For Missouri, the list of HDD crossings includes the Missouri, Chariton, Cuivre, and Mississippi rivers. Notably missing from this list is the Grand River. The Grand River, near Sumner in Chariton County, is a much larger stream with a mean discharge of 1510 cubic feet per second (cfs). By comparison, the Chariton River, near Prairie Hill in Chariton County, has a mean discharge of only l32-cfs. The department requests that the applicant explain the criteria and rationale for the selection of these crossing methods in the EIS.	The Grand River crossing is collocated with the REX pipeline crossing which was open cut. The proposed Keystone crossing falls within areas just disturbed by REX.
329	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	EDT	Some of the milepost citations in one of the appendices fail to match the figures mentioned in other related documents on the Keystone project. For instance, Appendix J, Water Body Crossings, lists the Grand River at milepost 835 on page 33 and the Chariton River at milepost 857 on page 35. The plan sheets showing the route in Appendix A, Mainline Route Sheets, of the Presidential Permit Application, shows these two rivers at mileposts 840 and 862, respectively.	Comment acknowledged. Both Appendix J (water body crossings) and Appendix A (Route Sheets) have been updated to reflect re-routes and are now consistent.
330	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	KAR	Section 3.1.1.1 page 3.1-13, the last para is misleading: "Bedrock with karst potential is found from MP 735 -811". Soluble or carbonate bedrock must be susceptible to interaction with acidic meteoric waters for active karst to be a potential. Shale is the predominant lithology, though some thin limestone units are present in the Pennsylvanian-age bedrock formations beneath the unconsolidated surficial materials. The applicant recognized that most of northern Missouri is covered with a mantle of glacial drift. This includes the mainline between MP 748 and 811 excluding alluvial plains. This material exhibits low vertical permeability and much of it is unleached. Insufficient acidic meteoric waters infiltrate through this overburden to have a karstic impact on what little carbonate bedrock may be exposed beneath it. For this reason, karst features are exceptionally rare, if not completely absent, in this part of northern Missouri. Consequently, the department considers the characterization of bedrock between MP 735 and 811 as having karst potential to be misleading. This comment also applies to Table 3.1.4-3.	Comment acknowledged. Final EIS will reflect updated information.
331	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	KAR	Section 3.1.1.1 Affected Environment, Tables 3.1.1-5 and 3.1.1-6, pages 3.1-10 and 3.1-11: Table 3.1.1-5 (Missouri) does not include all the ecoregions that are crossed in Missouri. It appears that some of the entries on Table 3.1.1-6 (Illinois) should have been included on Table 3.1.1-5. The department failed to notice this error in the previous version of the document. The full length of the pipeline in Missouri (milepost 748 through 1021) had not been included in the table relating to Missouri. Upon review of these data listed on the Illinois table, the department's previous comment relating to Table 3.1.1-5 was incorrect and is retracted. Therefore, the words "...and Mississippi..." that were added to the surface geology description (fifth column) pertaining to the "Interior River Valleys and Hills - River Hills" segment should be struck.	Comment acknowledged. Final EIS will reflect updated information.
332	H. Floyd Gilzow MO DNR	60	9/20/2007	letter	KAR	Section 3.1.4 Affected Environment, Seismic Hazards, page 3.1-24: Neither the National Pipeline Mapping System nor the Department of Transportation have identified any areas along the Keystone mainline path to be areas of high geologic risk for seismic impacts. The department recommends that Keystone consult with the department's Geological Survey Program in order to identify the most up-to-date sources of data related to seismic risk for the segment of the pipeline constructed in the alluvial plain of the Mississippi River in St. Charles County. This segment runs from milepost 984 to 1021. Recent studies have been and are being conducted to further refine knowledge of potential seismic risks.	Comment acknowledged
333	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	The Standing Rock Tribal Historic Preservation Office rejects the draft EIS as written. We believe that there are major, unresolved issues regarding the identification and evaluation of cultural resources within the proposed corridor of TransCanada's Keystone Pipeline where it crosses the ancestral homelands of the Great Plains Tribes.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement)
334	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL03	3.11, paragraph #3 outlines the legal responsibilities of the federal agency in regards to consultation with the SHPO and their role in evaluating cultural resources. The SHPO's responsibility, as described, includes working with Native American tribes "to mitigate any negative impacts that could occur to NRHP-eligible or –listed properties." The use of the word mitigate assumes that avoidance is not an option for the construction of the Keystone Pipeline. This is whole sale destruction of sites within the corridor without Tribal participation and DOS doesn't have a process Identified to address this in the draft EIS. Please clarify this fatal flaw.	Comment acknowledged.– Section 3.11 is being revised to emphasize acceptance of sampling strategies by SHPOs and approval of this methodology by DOS. . Tribal consultation has taken place during the Section 106 process which is parallel to the EIS process. The applicant has avoided all known cultural resources at this time and will continue to use avoidance where ever possible. The PA addresses the need for avoidance or mitigation of any newly discovered cultural resources. The PA has been developed with Unanticipated Discovery Plans for each state within the APE.
335	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL02	3.11, paragraph #4 asserts the "importance of consulting with tribes for federal undertakings that are proposed within Native American ancestral territories," as described in 36 CFR 800.2(c)(2)(ii). According to the Draft EIS, the cultural resources surveys for the proposed corridor began in early 2006, yet consultation with affected Native American tribes and THPOs was not initiated until August 2006. Research designs were submitted to State SHPOs and approved in early 2007, yet efforts were not made to do the same with the appropriate THPOs. The DOS must initiate consultation on the archaeology conducted by Metcalf, Inc.	DOS has distributed survey reports, transcripts from consultation meetings, and held numerous meetings between the consulting parties. DOS has provided numerous opportunities for THPOs to participate in these meetings and phone calls. DOS, as the lead federal agency for Section 106 of NHPA has approved of the survey methodology utilized by the applicant and their consultants within the APE. DOS has initiated consultation on archaeology.
336	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL02	3.11, paragraph #7 states that the guidelines used to assess cultural resources was developed by FERC, and that Keystone assisted DOS in complying with Section 106. This indicates that the DOS has delegated its responsibilities to the very company that they are supposed to be evaluating. This assistance shows a clear conflict of interest on the part of Keystone, who cannot be expected to provide unbiased information and analyses for a survey that may determine the outcome of their application for a federal permit. Also, the FERC guidelines provide for the input and guidance of relevant THPOs in evaluating the significance of any cultural resources found (page 13). The DEIS indicates that evaluations were made only by the contracted group selected by Keystone to perform the required assessments. This action doesn't fulfill the requirements of Section 106 of NHPA.	Application of FERC guidelines and implementing and review of Keystone data by DOS and other consulting parties will be reworded in FEIS to clarify these aspects.

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337	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL02	3.11, paragraph #8 defines Traditional Cultural Properties (TCPs) as in Bulletin #38 of the National Register, and "traditional" is an identified category of cultural resources for the analysis. Neither the Class I nor the Class II survey conducted identified any resources that fell into this category. This is most probably due to a lack of consultation with appropriate THPOs during the survey process. How will DOS address this?	DOS has acknowledged the lack of TCP survey in the background documents prepared by the applicant. DOS has discussed the possibility of inclusion of a survey of cultural and religious properties including TCPs with the consulting parties and offered to fund this survey for the consulting tribes. This issue is being addressed through ongoing consultation between Tribes and DOS and is included within the Programmatic Agreement.
338	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL04	The Standing Rock Sioux Tribe is particularly concerned about those types of sites that archaeologists describe as "archaeological sites" rather than "historic" or "architectural sites." Occupation of the project area by ancestral Sioux bands is most likely reflected by pre-contact, archaeological sites.	Comment acknowledged, no change to DEIS.
339	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	In the 388 sections included in the Class I inventory of the North Dakota segment by MAC inventory there is a total of only 18 pre-contact sites. Obviously, a sample limited to 18 sites over a distance of approximately 216.9 miles is not statistically valid and does not provide a large enough data base to formulate a predictive model.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
340	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	For the remaining 215 miles of pipeline corridor there are only nine recorded archaeological sites. Clearly, this small number reflects a lack of inventories rather than a low site density.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
341	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	The number of previous inventories is also not sufficient to formulate a predictive model. Of the 388 sections in the Class I inventory, 210 are listed as "no sites/no surveys." To this number can be added an additional 17 sections where there is a recorded historic site or site lead but no survey has been conducted. This data indicates that of the 388 sections, 58.5% of the sections have received no archaeological surveys.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
342	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	Taken cumulatively, there is no data or only biased data on 276 sections. There is no data or inadequate inventory data for over 70% of the project corridor in North Dakota.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
343	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	As with the North Dakota segment, MAC's South Dakota sampling strategy assumes either (1) that there are sufficient numbers of previously recorded sites to predict the types of landforms on which sites most frequently occur or (2) that there are sufficient numbers of previous surveys to predict where sites occur. Neither assumption is valid.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
344	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	In the 736 sections included in the Class I inventory of the South Dakota segment there is a total of only 10 pre-contact sites. Obviously, a sample limited to 10 sites over a distance of approximately 218.9 miles is not statistically valid and does not provide a large enough data base to formulate a predictive model.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
345	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	The cultural resources summaries of the North and South Dakota segments in the EIS must be rejected because the modeling underpinning the Class II inventories is fatally flawed. Class III inventories must be conducted along both the North and South Dakota segments.	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
346	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL03	Paragraph #3 addresses the development of a PA to establish protocol for "unanticipated discoveries, future cultural resources identification and avoidance commitments and measures, and the process for future consultation." However, 3.11.4 shows that an Unanticipated Discoveries Plan has already been established, without considering the interests of affected Native American tribes.	The PA process has included sending the Unanticipated discovery plans to Native American Tribes. DOS has offered to consult on this issue.
347	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL03	Tables for identified cultural resources show that determinations regarding NRHP eligibility have been made for many sites. These determinations were made without the knowledge or input from any Native American tribes who may know of their significance, contrary to the FERC guidelines that were supposedly followed.	Tribes were offered opportunity to review all technical report data and to comment on those reports and all subsequent determinations of NRHP eligibility.
348	Tim Mentz THPO - SRST	61	9/19/2007	letter	CUL01	"Cultural resources inventory and geoarcheological studies will be completed and reported to DOS by April 2008." 2.2.4, Construction Schedule and Workforce anticipates construction to begin in April 2008. This assumes that the DOS will approve the project (a decision is expected in "early 2008") without a completed 100% Class III survey. Approval of a major undertaking while such important information has not been compiled is unacceptable.	After the FEIS is submitted additional agency evaluation and consultation is required before construction is allowed. PA also addresses this topic
349	Tim Mentz THPO - SRST	61	9/19/2007	letter	UNA	As forty-five days is an insufficient amount of time to review and comment on the entire Draft EIS.	Under the requirements of NEPA, a 45-day comment period is considered to be sufficient.
350	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	WAT	Our organization is totally opposed to the building of the TransCanada-Keystone Crude Oil pipeline as proposed... Our facilities location is 40plus west from the point that this pipeline crosses the aquifer in Marshall County that supplies our only source of potable water through the Brown-Day-Marshal (BDM) Rural Water System.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
351	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	OIL	The extreme high pressure the crude oil pipeline will be operated at (1,700 per square inch) will result in line ruptures, and pipe leaks that will destroy the aquifer and could easily damage the plastic pipes that deliver water to our facility and the surrounding community. This issue needs to be addresses in the Environmental impact statement.	The proposed Keystone pipeline has a MAOP of 1440 psi. PHMSA issued a waiver allowing a small change in the SMYS for the pipeline, thus effectively allowing a very small decrease in pipe wall thickness in certain circumstances. In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
352	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	LIA	The EIS should address proof from the promoters and developers of the project that they have funds in place to pay damages if leaks happen and if they can't correct the damage that their project causes.	The key regulation for pipeline spill response is 49 CFR Part 194 – "Response Plans for Onshore Oil Pipelines". Under Part 194.115, Response Resources, Operators must submit a plan, and must certify that they have response resources sufficient to respond to the worst case oil spill. Ensuring the necessary resources are available "by contract or other approved means" provides equivalent or better protection than bonding. Bonding just covers the finances, that does not mean that the needed resources are actually trained and available. Under this rule they need to "ensure" actual resources in a given time frame.
353	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	MIT	Keystone must explain how they will mitigate the loss of our water supply	Construction and normal operation of the Keystone pipeline would not impact the local water supply. Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
354	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	PIP	I'm appalled that the Federal officials have given a waiver to TransCanada Pipeline for use of a thinner walled lighter gauge pipe through the rural areas an the prairie lands of the Dakotas near the homes and aquifers and populated areas	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
355	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	RUR	Would those who work at the State Department want something like that in their back yard? Please explain how it is in the national interest place our rural communities at risk, while oil companies pile up untold profits on $80 a barrel oil and $3.00 per gallon gas.	As noted in Section 1.2, "Purpose and Need for the Project," the purpose of the project is to meet growing demand by refineries and markets in the U.S. The need for the project is dictated by, among other factors, increasing crude oil demand and decreasing crude supply in the U.S., and the opportunity to reduce foreign oil dependence. No change to DEIS.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
356	John Sieh Granary Rural Cultural Center (NGO)	62	10/4/2007	letter	RUR	It is in the national interest to protect rich farm land of the Dakota Plains that have helped feed the country since statehood	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone intends to repair or restore drain tiles, fences, and land productivity as these may be damaged during construction. After construction, all but 140 acres of agricultural land can revert to its previous use. In addition, Keystone will compensate landowners for actual crop losses resulting from removal of standing crops, disruption of planned seeding activity, disruption of general farming activities, or other losses resulting from construction.
357	Dianne Desrosiers THPO - SWO	63	9/27/2007	letter	CUL01	I am re-iterating our position on the DEIS, and that is the Tribal Historic Preservation Office of the Sisseton Wahpeton Oyate rejects the draft EIS. Due to the amount of area which was not surveyed, we can not in good conscience make a comment on the draft.	Comment acknowledged; no change to DEIS.
358	Dianne Desrosiers THPO - SWO	63	9/27/2007	letter	CUL01	The tribes had requested at the last two meetings that a 100% archeological survey and a 100% traditional cultural property survey be performed on this project, (the entire length of the corridor in North Dakota and South Dakota). At this writing we have not received a reply on either of the requests. It is our position that until our requests are responded to, we are not willing to rubber stamp this DEIS	Section 3.11 is being rewritten to justify the acceptance of sampling strategies by SHPOs and the DOS as an accepted survey methodology for the states of South and North Dakota.. Funding for a TCP survey has been offered by DOS. TCP studies are also addressed in the Programmatic Agreement.
359	Dianne Desrosiers THPO - SWO	63	9/27/2007	letter	CUL01	The inconsistencies with the archeological survey; (lack of access to project corridors, poor visibility due to mature crops in the field and tall grassy areas) the timing of the survey was less than ideal, as visibility through out the majority of the project corridor was less than adequate for a thorough survey	Any areas that were to be surveyed as part of the methodology approved by DOS that were not surveyed due to poor visibility or limited property access, will be surveyed prior to construction as outlined in the PA.
360	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	GBW	We do not think that granting a permit for the proposed TransCanada Keystone pipeline is in the national interest. Contrary to our national interest, we believe that this proposed pipeline will increase U.S. reliance on fuels from sources such as the Canadian tar or oil sands that are environmentally destructive and that increase damage from global warming.	Please refer to Section 1.2, Purpose and Need.
361	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	CME02	The proposal makes it clear that the pipeline is being built, primarily to increase imports of synthetic crude oil from the Canadian tar sands region. Canada's tar sands region, located within the Western Canadian Sedimentary Basin, is a leading example of the type of development underway in this rush to develop unconventional oil. More importantly, the proposed TransCanada Keystone Pipeline is integral in this effort to expand exploitation of tar sands oil resources in Northern Alberta.	The DEIS addresses the reasonably foreseeable environmental impacts of the construction and operation of the proposed Keystone Pipeline within the United States and is limited to the pipeline which is a transportation system. The scope of the EIS is necessarily limited to the scope of the proposed project and does not extend to the supply of crude oil to the transportation system or the operation of refineries that are supplied by it. Further, as provided in Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions, " Jan. 4, 1979, a federal agency is directed to consider extra-territorial environmental impacts only in limited circumstances not applicable here. Possible impacts of the construction or operation of the Keystone Pipeline in Canada are properly the subject of review by appropriate Canadian governmental entities.
362	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	GBW	Tar sands oil extraction, production and refining contributes almost three times more greenhouse gas emissions even than conventional oil production. Tar sands oil is dirtier to refine – increasing local pollution around refineries. Finally tar sands oil extraction causes several environmental and public health impacts damaging water quality and quantity; forests, wetlands and species such as migratory birds; and air quality. The analysis of national interest does not consider the security risks from energy sources that increase our contributions to global warming pollution.	The scope of the DOS Keystone EIS is restricted to potential environmental impacts resulting from pipeline construction and operation from the international border southward into the lands of the United States. Development of tar sands in Alberta are addressed under relevant Canadian and provincial laws and regulations.
363	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	ENR	The pipeline is being proposed in order to fill a perceived future gap in fuel and energy in the United States. The pipeline is not the only alternative for filling this gap: other alternatives include energy efficiency, renewable energy, clean technologies, and demand-side management. The draft EIS does not adequately address alternatives to expanding U.S. capacity to import tar sands oil. The analysis of national interest only looks at one aspect of how to meet our energy needs. It does not consider that unconventional oil is not the only alternative for our energy future.	The alternatives recommended by NRDC for examination here are appropriately considered in the broader context of federal energy policy where all of these techniques are likely to be needed to address the country's future energy needs. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
364	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	PUR	The Environmental Report submission for a Presidential Permit notes the existing crude oil pipeline export capacity from this region is insufficient to accommodate the forecasted crude oil supply growth and therefore the Keystone Pipeline project is proposed to address this gap, with the possibility of incrementally increasing its capacity.	Comment acknowledged.
365	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	CON	The draft EIS does not consider many of the potential consequences of moving forward with this pipeline. Specifically it does not consider the environmental impacts of refinery expansions to refine the expanded amount of tar sands oil that will be imported into the United States. The Keystone pipeline proposal already is catalyzing expansion at several refineries in the U.S. and as a consequence will cause additional local pollution in the United States. However, the linkage between these proposed refinery expansions and the Keystone pipeline is not addressed in the draft EIS as part of its cumulative impacts assessment.	The EIS states that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the refinery upgrade on air in Section 3.12 and on water in Section 3.3. The identity of other refineries where Keystone crude oil would be sent varies depending on market conditions, availability of imports from other countries, weather conditions, etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2% of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.
366	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	GBW	Refining heavy sour (sulfurous) crude oil extracted from tar sands, which requires substantially greater energy inputs that refining conventional light sweet crude oil, yields significant increases in conventional air pollutants (in particular sulfur dioxide and carbon monoxide) and carbon dioxide	See Section 3.12.1.3 of the DEIS for impacts related to the retrofit and expansion of the Wood River Refinery. Other refineries that would receive oil from the Keystone pipeline would be held to air emissions requirements of their existing air quality permits.
367	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	WAT	Permits issued for refinery expansions also reflect significant increases in the discharge of water contaminants and the link of these increases to heavy crude refining needs to be further explored, as well as impacts to local waterbodies, including the Great Lakes.	An evaluation of the Wood River Refinery expansion (Illinois) and potential water resource impacts is included in Section 3.3.2.2 of the EIS.
368	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	AIR02	The draft EIS makes no mention that increases in air pollutants from upgrading tar sands crude are taken into consideration as part of the cumulative impacts. Similarly, upgrading crude oil is energy intensive.	The EIS states that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the refinery upgrade on air in Section 3.12 and on water in Section 3.3. The identity of other refineries where Keystone crude oil would be sent (from transportation hubs) varies depending on market conditions, availability of imports from other countries, weather conditions, etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2% of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.
369	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	CON	Lastly, the public health implications in local communities near the refineries being upgraded because of the pipeline is also omitted from the cumulative impacts analysis of the draft EIS. A key concern is to what extent these refinery expansions will increase local air and water pollution and increases in waste and other toxic releases.	The EIS states that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the refinery upgrade on air in Section 3.12 and on water in Section 3.3. The identity of other refineries where Keystone crude oil would be sent (from transportation hubs) varies depending on market conditions, availability of imports from other countries, weather conditions, etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2% of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.
370	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	AIR02	Similar expansions can be expected in other areas along the pipeline corridor and particularly in those areas with refineries identified as recipients of the pipeline's products, such as the Gulf Coast. And similar increases in pollution can therefore also be expected along the pipeline corridor due to increased refinery emissions and environmental impacts.	The EIS states that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the refinery upgrade on air in Section 3.12 and on water in Section 3.3. The identity of other refineries where Keystone crude oil would be sent (from transportation hubs) varies depending on market conditions, availability of imports from other countries, weather conditions, etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2% of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
371	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	WAT	The draft EIS does not adequately address the full range of consequences that would result from a catastrophic leak or spill along the pipeline that occurs over an underlying shallow aquifer.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
372	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	MIT	The draft EIS does not address what measures would be implemented to protect these aquifers during the operation lifetime of the pipeline. What, for example, would be the proposed mitigation measures if the sole available drinking water supply for several rural municipalities and surrounding farmsteads is contaminated by a spill from the pipeline?	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
373	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	MOR	What contaminants would be released into the groundwater in the event of such a spill? What would be the likely duration of such contamination?	Regulated compounds that could be released into the environment due to a spill or leak include benzene, toluene, ethylbenzene, and xylenes. Metals include nickel and vanadium. Other organic compounds include ethane, propane, butanes, pentanes, hexanes, octanes, nonanes, and decanes. Additional information can be found at www.crudemonitor.ca. The proposed pipeline is expected to transport heavy crude, similar to Western Canadian Select, and synthetic crude, similar to Suncor Synthetic A. The duration of persistent contamination in the environment would vary in each case. Keystone has Emergency Response Procedures in place that are described in Appendix C. By adapting these procedures and incorporating the appropriate remediation and mitigation procedures defined above, the contamination would be remediated in as timely a fashion as possible.
374	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	RTE03	If a spill from the pipeline could permanently contaminate a shallow aquifer that rural residents rely on for their potable water, is it appropriate to route the pipeline over such aquifers, or are there viable alternatives?	Route selection (Section 4), balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone is required to follow federal regulations defining design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Should a leak be detected, the pipeline would be shut down and the Spill Mitigation and Recovery Procedures would be implemented, as described in Appendix C. Appropriate remedial measures would be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of this oil reduces its ability to migrate vertically to underlying aquifers. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would be responsible for aquifer remediation and restoration of water supply to affected stakeholders.
375	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	WAT	The draft EIS does not address these issues, which are vital to the health and livelihood of the rural residents who depend on these aquifers as their sole source of potable water. The final EIS should more thoroughly examine the risk to shallow aquifers posed by the Keystone Pipeline Project.	Route selection (Section 4), balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Keystone is required to follow federal regulations defining design and safety standards for crude oil pipelines and related facilities. These regulations include pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Should a leak be detected, the pipeline would be shut down and the Spill Mitigation and Recovery Procedures would be implemented, as described in Appendix C. Appropriate remedial measures would be employed to restore the physical, chemical, and biological characteristics of the affected environment. Additionally, the high viscosity of this oil reduces its ability to migrate vertically to underlying aquifers. In the event that an underlying aquifer was contaminated by the construction or operation of the pipeline, Keystone would be responsible for aquifer remediation and restoration of water supply to affected stakeholders.
376	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	SOI	First, the draft EIS does not fully examine the issue of increased soil temperature caused by the pipeline, which is addressed at section 3.2.2.2. The draft EIS refers to data provided by TransCanada regarding projected temperature increases along the pipeline at various times of the year. Whether this information is accurate or not, it does not fully address the effects of even minor changes in soil temperature on moisture content and productivity.	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
377	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	SOI	in semi-arid climates along the pipeline such as in the eastern Dakotas, moisture content during the spring depends on the ground having frozen and retained snow cover during the previous winter. Will the temperature increases identified by TransCanada impact this aspect of soil climate? Can TransCanada provide data from other pipelines to demonstrate the impact that such increased temperature has actually had on the moisture and productivity of the surrounding soil? Merely providing hypothetical temperature ranges, without context or other relevant details, does not give a clear picture of what the likely impacts on agriculturally productive soils would be. The final EIS should address this concern in more concrete detail.	More detail on soil-temperature effects will be included in the final EIS. The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
378	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	OIL	However, the draft EIS does not address the risk to soil from catastrophic leaks and spills during the operation lifetime of the pipeline.	The EIS addresses risks to soil from leaks and spills during the operation lifetime of the pipeline in Section 3.13.5.2, Soils and Sediments. No change to EIS required.
379	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	SOI	the final EIS should address the likely extent and duration of soil contamination that would occur in the event of such a leak or spill during the lifetime of the pipeline. How much acreage would be affected? What clean-up measures could and should be used? Would there be any permanent contamination? Would effected land still be able to be used for agricultural production purposes?	The EIS addresses risks to soil from leaks and spills during the operation lifetime of the pipeline in Section 3.13.5.2, Soils and Sediments. No change to EIS required.
380	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	MOR	The draft EIS states simply that the type of construction method used depends on the type of stream crossing, and a list is provided of the various construction methods TransCanada intends to use at each stream crossing. This information in the draft EIS is provided uncritically without describing the various construction methods or explaining why a given method is appropriate to a given stream crossing. Apart from width, no characteristics of the various water crossings are provided.	Detailed information on Keystone's proposed methodology for water crossings and general mitigation planning is presented in Appendix D (Site-Specific Water Body Crossing Plans). Additional information is included in Appendix B (Keystone's Construction Mitigation and Reclamation Plan).
381	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	WAT	The draft EIS does not examine all the relevant features of the surface waters to be crossed by the pipeline, nor does it analyze what construction methods would be the most appropriate for each type of crossing.	The crossing method proposed at each individual water crossing would require approval by the USACE and relevant resource agencies prior to issuance of permits for the water crossings. While the EIS provides an overall evaluation of potential impacts of the proposed action, it does not obviate the need for Keystone to acquire the required permits from the permitting agencies. Permit applications would be evaluated and approved by USACE and relevant resource agencies, and required mitigations to reduce environmental impact at each specific water crossing would be added as conditions to permit approval.
382	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	ERO	The environmental risks, such as riverbank and riverbed erosion and overall stability of the pipeline at the site of the crossing, cannot be accurately predicted and mitigated with only the limited information provided in the draft EIS.	Comment acknowledged. The potential for riverbank and/or riverbed erosion at a given crossing will depend on the interaction between local conditions and the site-specific design. Keystone plans to have stream crossings designed by a qualified professional, and will comply with all applicable regulations, which will vary with location.
383	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	PIP	The draft EIS does not address environmental risks from the proposed pipeline operating at a higher maximum operating pressure than is mandated by federal regulations. The final EIS should evaluate the federal Pipeline and Hazardous Material Safety Administration's (PHSMA) decision to grant a waiver to TransCanada allowing them to operate at higher maximum operating pressure then allowed by federal regulation (80 percent of the minimum yield strength of the pipe, rather than 72 per cent currently required by federal law). Although, the waiver does not apply to 'high consequence areas' those areas within the waiver are at risk and these risks should be evaluated properly. PHMSA's exemption from the special permit for sensitive "high consequence areas" indicates that maximum safety is desired for those areas that would suffer the most severe impact from a pipeline leak or spill. However, significant environmental harms would flow from a leak or spill in those rural areas not labeled "high consequence" by PHMSA. Rural areas in the pipeline right-of-way not treated as "high consequence areas" in PHMSA's evaluation include shallow aquifers, prime farmland, wetlands and wild all along the proposed pipeline route through the eastern Dakotas and Nebraska.	Federal regulations do not set an upper limit on the MAOP. Rather, the regulations require that pipe strength and wall thickness be sufficient for the pipeline to safely operate at the proposed MAOP. In issuing the Special Permit, PHMSA found specifically that allowing Keystone to operate at 80 percent of SMYS is not inconsistent with pipeline safety and that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with, addressing areas such as steel properties, manufacturing standards, fracture control, quality control, puncture resistance, hydrostatic testing, pipe coating, overpressure control, welding procedures, depth of cover, SCADA, leak detection, pigging, corrosion monitoring, pipeline markers, in-line inspection, damage prevention program, reporting, and other areas. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve as

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384	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	PIP	A catastrophic leak or spill from the pipeline could harm wildlife habitats, irreparably damage valuable farmland or permanently contaminate a rural water system. Notably, this is the first such waiver that PHMSA has granted for this type of hazardous material pipeline, so there is no direct prior comparison for determining adverse consequences. The final EIS should consider how PHMSA's waiver augments these predictable environmental risks and whether such increased level of risk is appropriate or desirable.	Issuance of the Special Permit was based on PHMSA's determinations that the aggregate affect of Keystone's actions and PHMSA's conditions provide for more inspections and oversight than would occur on pipelines installed under the existing regulations, and that PHMSA's conditions require Keystone to more closely inspect and monitor its pipeline over its operational life than similar pipelines installed without a Special Permit. In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
385	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	CUL01	The draft EIS does not adequately address the potential adverse impacts of the Keystone Pipeline on historic cultural resources of Native American nations along the proposed pipeline route.	DOS is still in consultation with the consulting parties and PA is being developed to address these types of issues
386	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	CUL02	formal consultations with affected Native American nations and tribes were incomplete at the time the draft EIS was published. In order for all affected parties, including members of the general public, to adequately comment in this important issue, it is vital that the Department of State complete the required process of consultation with affected Native American nations and tribes prior to publishing a final EIS.	The DEIS section of Native American consultation is being updated for FEIS. DOS is still consulting with tribes and PA is being developed to address future consultation process.
387	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	GBW	Canada's tar sands are the single largest contributor to global warming pollution emissions growth in Canada. Further, tar sands oil production generates almost triple the global warming pollution as conventional oil production because of the massive amounts of energy needed to extract, upgrade, and refine the oil.	The scope of the DOS Keystone EIS is restricted to potential environmental impacts resulting from pipeline construction and operation from the international border southward into the lands of the United States. Development of tar sands in Alberta are addressed under relevant Canadian and provincial laws and regulations.
388	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CME02	The Keystone DEIS is woefully inadequate in evaluating the cumulative impacts from the construction of this pipeline While the DEIS addresses many localized impacts in the several states from the pipeline itself, it does not address cumulative impacts. There would be impacts to the planet, to the United States, to Canada, to the area(s) where the tar sands feedstock will be refined, and to the areas where the tar sands-derived fuel will be used. Those cumulative impacts must be evaluated.	The DEIS addresses the reasonably foreseeable environmental impacts of the construction and operation of the proposed Keystone Pipeline within the United States and is limited to the pipeline which is a transportation system. The scope of the EIS is necessarily limited to the scope of the proposed project and does not extend to the supply of crude oil to the transportation system or the operation of refineries that are supplied by it. Further, as provided in Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions, " Jan. 4, 1979, a federal agency is directed to consider extra-territorial environmental impacts only in limited circumstances not applicable here. Possible impacts of the construction or operation of the Keystone Pipeline in Canada are properly the subject of review by appropriate Canadian governmental entities.
389	Melani Nakagawa and others NRDC (NGO)	64	9/24/2007	letter	CME02	Mining and drilling operations for tar sands have major environmental impacts in Alberta. Open pit mines and intensive drilling are turning the boreal forest into a wasteland. The DEIS should consider the role of Keystone in catalyzing unnecessary expansion into the tar sands The additional impacts should be characterized as part of the cumulative impacts section.	The DEIS addresses the reasonably foreseeable environmental impacts of the construction and operation of the proposed Keystone Pipeline within the United States and is limited to the pipeline which is a transportation system. The scope of the EIS is necessarily limited to the scope of the proposed project and does not extend to the supply of crude oil to the transportation system or the operation of refineries that are supplied by it. Further, as provided in Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions, " Jan. 4, 1979, a federal agency is directed to consider extra-territorial environmental impacts only in limited circumstances not applicable here. Possible impacts of the construction or operation of the Keystone Pipeline in Canada are properly the subject of review by appropriate Canadian governmental entities.
390	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	GBW	The DEIS fails to consider the impacts to climate from the life-cycle of tar sands extraction and refining and the use of tar sands-derived fuel. Greenhouse gas pollution from tar sands will also triple or quintuple in proportion to the increase in production. Because of its key role in this alarming trend, the Keystone Pipeline Project DEIS must consider the cumulative impacts on global warming	The scope of the DOS Keystone EIS is restricted to potential environmental impacts resulting from pipeline construction and operation from the international border southward into the lands of the United States. Development of tar sands in Alberta are addressed under relevant Canadian and provincial laws and regulations.
391	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CON	the feedstock could be further transported from Patoka to additional refineries and that Keystone has increased the capacity of feedstock delivery capability from 435,000 to 590,000 barrels per day. These additional impacts must also be considered under cumulative impacts for the EIS.	The EIS states that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the refinery upgrade on air in Section 3.12 and on water in Section 3.3. The identity of other refineries where Keystone crude oil would be sent (from transportation hubs) varies depending on market conditions, availability of imports from other countries, weather conditions, etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2% of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.
392	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CME02	The impacts to the boreal forest and to the water, air and peoples of Canada have not been considered under cumulative impacts from the project.	The DEIS addresses the reasonably foreseeable environmental impacts of the construction and operation of the proposed Keystone Pipeline within the United States and is limited to the pipeline which is a transportation system. The scope of the EIS is necessarily limited to the scope of the proposed project and does not extend to the supply of crude oil to the transportation system or the operation of refineries that are supplied by it. Further, as provided in Executive Order 12114, "Environmental Effects Abroad of Major Federal Actions, " Jan. 4, 1979, a federal agency is directed to consider extra-territorial environmental impacts only in limited circumstances not applicable here. Possible impacts of the construction or operation of the Keystone Pipeline in Canada are properly the subject of review by appropriate Canadian governmental entities.
393	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	ENR	The Keystone DEIS does not consider energy alternatives. There are many alternatives to the massive switch to tar-sands derived fuel in this country, including energy efficiency (such as higher fuel economy standards), conservation, renewable energy and clean technologies. These alternatives have not been considered	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
394	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CON	The DEIS fails to consider the impacts from refining the tar sands feedstock on the air, water, land and peoples around the ConocoPhillips Wood River Refinery.	Impacts related to the upgrade and expansion of the Wood River Refinery are discussed in Chapters 3.3 (Water), 3.9 (Land Use), 3.10 (Socioeconomics), and 3.12 (Air and Noise).
395	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CON	ConocoPhillips' delayed coking processing of the feedstock from the dirtier tar sands will produce many thousands of tons of coke, which ConocoPhillips indicates it will sell as fuel for use in local power plants. That too will negatively impact our air quality.	The production and sale of refinery by-products by refineries supplied by the proposed project is not within the scope of the proposed project and thus not been included in the environmental impact analysis. Refinery by-product production and sale is a market driven decision in the purvue of the refinery owner. Any refinery changes required to produce coke or other by-products would likely require refinery permit revisions and environmental review under appropriate jurisdictional authority.
396	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CON	The DEIS fails to consider the impacts to air quality from the use of tar sands-derived fuel. tar sands or oil sands-derived fuel (OSDF) is higher in aromatics and cycloparaffins. While some oil sands-derived gasoline appears to be similar to conventional gasoline, in practice OSDF gasoline can perform differently. In one example, OSDF gasoline was observed to produce significantly higher particulate matter emissions—by a factor of 10—from direct injection (DI) gasoline engines. OSDF diesel tailpipe emissions are higher in NOx and CO as well as hydrocarbons. The use of tar sands-derived fuels has the potential to worsen air quality in areas that already fail to meet federal air quality standards and to add many new areas to the nonattainment list.	The production and sale of refinery by-products by refineries supplied by the proposed project is not within the scope of the proposed project and thus not been included in the environmental impact analysis. Refinery by-product production and sale is a market driven decision in the purvue of the refinery owner. Any refinery changes required to produce coke or other by-products would likely require refinery permit revisions and environmental review under appropriate jurisdictional authority.
397	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CON	Because all the major U.S. refineries appear to be moving toward the importation and refining of tar sands, it is essential that the impacts from the usage of OSDF be evaluated under cumulative impacts of the Keystone EIS	The production and sale of refinery by-products by refineries supplied by the proposed project is not within the scope of the proposed project and thus not been included in the environmental impact analysis. Refinery by-product production and sale is a market driven decision in the purvue of the refinery owner. Any refinery changes required to produce coke or other by-products would likely require refinery permit revisions and environmental review under appropriate jurisdictional authority.

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398	Kathy Andria Sierra Club - American Bottom Conservancy (NGO)	65	9/21/2007	email	CME01	we also think the DEIS is inadequate in that it did not consider alternatives to the size of the pipeline. If the project does move forward despite the alternatives available and the seriously destructive environmental and human health impacts from tar sands, the construction of a 30-inch pipeline (and 24-inch extension to Patoka) seems to guarantee shortages in the future. The decision to use the smaller diameter for the pipeline reinforces the widely held public view that bottlenecks and interruptions in supply are deliberately manipulated by oil companies in order to ensure higher prices at the gas pump. At the very least, a 36-inch or better still, a 42-inch pipeline would help to ensure the supply.	Information in Keystone's Filing #9 indicates that the Mainline pipeline will be constructed as a 30 inch diameter pipeline and the Cushing Extension will be a 36 inch diameter pipeline. The pipeline size was selected by Keystone in consideration of current and future market needs for importation of crude oil to meet domestic needs. Some portion of the pipeline capacity is expected to be available to meet future needs.
399	Robert Brooks OK - SHPO	66	8/23/2007	letter	CUL01	We have not had the opportunity to review the report generated by ARG documenting and assessing these cultural resources, we cannot concur with the findings presented in this draft. The additional 15.9 miles of right of-way where access was denied still requires survey and there is also the deep testing component of the field examination that has not been undertaken.	FEIS will require all remaining required portions of the project to be surveyed and reported to DOS / SHPO prior to construction
400	Robert Brooks Oklahoma Archaeological Survey	66	8/23/2007	letter	CUL04	in Section 6.11, cultural resources are equated with historic properties by definition. In fact, cultural resources is a more inclusive concept. All historic properties would be cultural resources whereas not all cultural resources are historic properties (only those eligible for or listed on the National Register). Second, it is Kay County rather than Kay(e) County Oklahoma,	Comment accepted. Definitions of historic and cultural properties have been rewritten for inclusion in the FEIS to clarify. The spelling of Kay County has been corrected.
401	Charles Wallis OK SHPO	67	8/13/2007	letter	CUL01	We have reviewed the recently submitted draft EIS for the above referenced undertaking. However, we are unable to concur with assessments of eligibility of the ten previously unrecorded archeological sites since we have not received adequate documentation concerning these sites for evaluation. Once we receive copies of survey findings with recommendations, we will review these documents and provide additional comments.	Comment acknowledged. The technical report was just recently received. DOS is sending letters requesting determinations of site eligibility.
402	Jennie Chinn KS SHPO	68	8/27/2007	letter	CUL05	We find the overall document to be acceptable. We remain satisfied with the cultural resource investigations conducted thus far on both the main line of the Keystone Pipeline, as well as on the Cushing Extension	Comment Acknowledged No change to DEIS
403	Jennie Chinn KS SHPO	68	8/27/2007	letter	EDT	In our view, its main limitation is that the Kansas cultural resources section (3.11.2 4) presents National Register eligibility recommendations in tabular form with no associated documentation Our office will therefore await review of the survey report (which has arrived) before commenting on specific sites	The Kansas technical report was only recently received. DOS is sending letters requesting determinations of site eligibility.
404	Jennie Chinn KS SHPO	68	8/27/2007	letter	EDT	the EIS presents site information using temporary numbers In all final reports, our office will require the use of Smithsonian trinomial site numbers, available from our records manager	The Kansas technical report was only recently received. DOS is sending letters requesting determinations of site eligibility with permanent numbers.
405	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL06	Pursuant to 36 CFR § 800.3(b), the ACHP's regulations endorse coordination between Section 106 and other reviews, such as NEPA. The federal agency should be clear in its discussions with consulting parties, however, about precisely how that coordination will be accomplished. The DEIS should describe how the DOS proposes to achieve that coordination. Accordingly, the DOS should be clear about how historic preservation issues addressed in the DEIS will factor into Section 106 review and how the views of the consulting parties will be considered as part of the DOS's analysis of alternatives and related information.	Comment accepted. DEIS test adjusted as suggested. Part of this issue will be resolved through the PA. Other aspects dependent upon the results of consultation with the Tribes.
406	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL04	the DEIS defines cultural resources as "any historic district, archaeological site, building, structures or object that is either listed or eligible for listing in the National Register of Historic Places." Such a definition means that the terms historic property and cultural resource may be used interchangeably in the DEIS. We do not support this usage because in standard practice in historic preservation there is no single agreed upon definition of cultural resource, while historic property is defined in statute and regulation.	Comment acknowledged. ACHP is in error as sentence referenced starts “A historic property is defined as”. However, DEIS text is amended to clarify the difference and for sites of religious and cultural significance and TCP issues.
407	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL04	Section 3.11-39 states that" 11 cultural resources were assessed as being ineligible for listing" in the National Register of Historic Places (NRHP). How can this be true if as defined in the DEIS a cultural resource is listed or eligible for listing in the NRHP? This contradictory manner of defining cultural resources is not only confusing, but detracts from the clarity and precision of the discussion in the DEIS.	Comment acknowledged. DEIS text is amended to clarify the difference between sites of religious and cultural significance and TCP issues.
408	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL04	There is also confusion in the DEIS about traditional cultural properties (TCP) and the requirements of the ACHP's regulations.	Comment acknowledged. DEIS text is amended to clarify the difference between sites of religious and cultural significance and TCP issues.
409	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL02	consultation with Indian tribes should be designed to determine if TCPs and historic properties of religious and cultural significance to Indian tribes are affected by the referenced undertaking. The issue for purposes of Section 106, therefore, is whether the DOS has made a reasonable and good faith effort to identify and evaluate properties of religious and cultural significance to Indian tribes.	DEIS text is updated to list all meetings, and communications with Tribes. DOS is making a reasonable good faith effort to identify and evaluate properties of religious and cultural significance to Indian tribes.
410	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL04	the sometimes careless manner in which the DEIS refers to Indian tribes. Federally recognized Indian tribes are considered sovereign nations and, as such, never should be identified as tribal or Native American groups or "other public groups.	Comment accepted; DEIS text amended as suggested.
411	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL07	Because the federal government has a unique legal relationship with Indian tribes, consultation with a federally recognized Indian tribe must recognize the government-to-government relationship between that tribe and the federal government. Accordingly, Section 3.11-62 of the EIS should be revised because the DOS has a responsibility to consult directly with tribes in a government-to-government manner, a responsibility that is not optional on the part of the DOS.	DEIS is being updated to list all communications with Indian tribes.
412	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL02	The DOS should carefully review the DEIS to ensure that other aspects of tribal consultation are correctly and accurately presented. For example, Section 101(d)(2) of NHPA establishes that a tribe may assume all or part of the duties of a SHPO. This section does not, as asserted in the DEIS, require a federal agency to "consult with a wide variety of consulting parties." Furthermore, while the ACHP's regulations establish the designation of a lead federal agency and SHPO for the purposes of Section 106, there is no such formal opportunity for THPO. When several THPOs are consulting regarding a particular undertaking off tribal lands, they may agree to defer to one tribe for a particular issue or aspect of the review. However, establishment of a lead THPO is not formally addressed by the ACHP's regulations because Indian tribes are sovereign nations and culturally diverse.	Comment accepted; DEIS text amended as suggested.
413	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL02	The DOS should direct particular attention to Section 3.11 of the DEIS which addresses the role of the SHPO in Section 106 review. The DEIS states that the "SHPO in consultation with the lead federal agency....generates and approves methodologies for undertaking" cultural resources investigations. On the contrary, the federal agency, after seeking information from consulting parties, including Indian tribes and the SHPO, determines the level of effort and scope of work required for the identification and evaluation of historic properties. In addition, the DEIS should explain why the DOS has elected to use a Programmatic Agreement to conclude Section 106 review.	Comment accepted; DEIS text amended as suggested.
414	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL02	The DEIS specifies the role played by the SHPO in the identification and evaluation of historic properties. It is unclear, however, how the views of other consulting parties regarding this effort will be considered. We are particularly concerned about this matter because in a September 12, 2007 letter to the DOS the Standing Rock Sioux Tribe assessed the cultural resource inventories from North and South Dakota as insufficient. According to the tribe, the use of predictive modeling cannot be supported because the background information and studies on which to base such models is not adequate. How will the DOS address this concern in the DEIS?	DEIS wording will be updated – however, exact statement /resolution is dependent upon the results of ongoing consultation with the Dakota tribes and SHPO.

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415	Charlene Vaughn ACHP	69	9/26/2007	letter	CUL02	Finally, the relationship between the referenced undertaking and the two "connected actions" identified in the DEIS is unclear. It appears that neither of these connected actions - development of transmission corridors and substations, and Coker and Refinery Expansion project - would be implemented but for construction of the Keystone pipeline. While the DOS has determined that construction of the Keystone pipeline is an undertaking that requires compliance with Section 106, it is unclear in the DEIS whether the scope of that undertaking includes these "connected actions."	The roles of RUS and WAPA have been recently clarified. The RUS and WAPA will be conducting connected actions that require Section 106 compliance. RUS is a consulting party in the Section 106 process and will be signing the PA. WAPA will not be signing the PA and will be responsible for complying with Section 106 when those actions occur within their own process.
416	Charlene Vaughn ACHP	69	9/26/2007	letter	MIT	Section 3.11.28 of the DEIS does propose "mitigation measures" that the Western Area Power Administration (WAPA) would implement for "modifying or constructing transmission line substations." However, it is not clear what is being mitigated or why the transmission corridors have been omitted from consideration. Furthermore, what alternatives are available that might avoid adverse effects to historic properties? What happens if adverse effect cannot be avoided?	WAPA will be conducting connected actions that require Section 106 compliance. WAPA will be responsible for their own Section 106 process for those actions
417	USACE	70	9/25/2007	letter	WAT	Page 2-25. In the first paragraph, it indicates that heavy equipment would likely operate within the channel. Best management practices and permit conditions would require that any heavy equipment working in wetlands, streams or mudflats must be placed on mats, or other measures taken to minimize soil disturbance. To the maximum extent practicable, stream flows must be maintained during construction.	The crossing method proposed at each individual water crossing would require approval by the USACE and relevant resource agencies prior to issuance of permits for the water crossings. While the EIS provides an overall evaluation of potential impacts of the proposed action, it does not obviate the need for Keystone to acquire the required permits from the permitting agencies. Permit applications would be evaluated and approved by USACE and relevant resource agencies, and required mitigations to reduce environmental impact at each specific water crossing would be added as conditions to permit approval.
418	USACE	70	9/25/2007	letter	WAT	Page 3.3-15. South Dakota, Water Bodies Crossed. A narrative should to be added that properly describes the portion of the Missouri River where the crossing is proposed. This crossing is within the Missouri National Recreational River and is managed by the Dept. of Interior, National Park Service. Any crossing proposed should be coordinated with the National Park Service to insure not to degrade the values of the National Recreational River Designation.	Comment acknowledged. A description of the Missouri River at the proposed crossing has been added to the EIS.
419	USACE	70	9/25/2007	letter	WAT	3.3.26. Indicates that the Pembina River will not be horizontally directionally drilled (HDD) but will be crossed using the open-cut wet crossing method. However in the preconstruction notification packet received from ENSR, Corp., dated September 2007 it is indicated that the Pembina River will be crossed using the HDD method. What method will be used to cross the Pembina River?	As per comments from Keystone, the Pembina River crossing will be HDD and text has been amended
420	USACE	70	9/25/2007	letter	WAT	Additionally, other major rivers in North Dakota that will be crossed are the Tongue River, Sheyenne River, Park River, North Branch of the Park River, Goose River, North and Middle Branches of the Forest River, and the North Branch of the Turtle River. These are not scheduled to be crossed using HDD method. Why not? An HDD crossing does not involve direct contact with the surface water body, stream channel bed, or stream channel banks. When permitting projects impacting waters of the U.S., the least damaging practicable alternative should be considered.	The HDD crossing method is not technically feasible at all surface water crossings. While HDD does not involve direct contact with the surface water body, HDD is logistically complicated, increases construction time, and can cause additional environmental damage due to increased construction activity. The minimum drilled length for any crossing using HDD is 1000 feet. Keystone would require a permit from the USACE for water crossings on a site specific basis. Permitting involves comment from relevant resource agencies, and the relative merits and technical feasibility of other crossing methods would be evaluated during the permitting process.
421	USACE	70	9/25/2007	letter	WAT	Page 3.3-27. 4th paragraph: 404 notification involving deposition of dredge or fill material into waters of the U.S., even temporarily, will be required from all states, not just Missouri. USACE Comment: A Department of the Army Permit under Section 10 of the Rivers and Harbors Act will be required for work in or affecting a navigable water. A Department of the Army permit will also be required for the discharge of dredge or fill material into waters of the United States.	Comment acknowledged.
422	USACE	70	9/25/2007	letter	EDT	Page 3.4-1. Environmental Setting – last sentence of last paragraph – should read Section 401 (not 410)	Comment accepted; text changed as requested.
423	USACE	70	9/25/2007	letter	EDT	Page 3.4-13. 3rd paragraph, last line – remove Patsy Crooke's name from the citation. Patsy works in the North Dakota Regulatory Office in Bismarck, North Dakota and is not familiar with the USACE River Management Area.	Comment accepted; text changed as requested.
424	USACE	70	9/25/2007	letter	WET	Page 3.4-15 Fifth bullet indicates that success of wetland revegetation is defined as less than 80 percent cover by herbaceous or woody vegetation of the type, density, and distribution in undisturbed adjacent wetland areas within 3 years; It should read "at least 80 percent cover."	Revised text as suggested in Section 3.4.3 page 3.4-15.
425	USACE	70	9/25/2007	letter	T&E	8. Page 3.8-46. Bottom of page. Topeka Shiner Streams in South Dakota. The local Pierre, SD office of the US FWS should be consulted in regard to "measures where Topeka Shiner streams cannot be bored". The current measures recommended appear to assume that a "Take Statement" has been issued. This may not always be appropriate for all cases in SD. Recommend that the Local US FWS office in Pierre be consulted for their input on options for measures/conditions appropriate for Topeka Shiner streams in SD.	Keystone will continue to coordinate with federal and state resource agencies concerning designated critical habitats for the Topeka Shiner. Section 3.8 was revised to include information from 2007 surveys and continued coordination with USFWS and state agencies.
426	USACE	70	9/25/2007	letter	REC	Page 3.14-3. Paragraph 3.14.3.3 Water Resources, Surface Water & Paragraph 3.14.3.9 Land Use, Recreation and Special Interest Areas, and Visual Resources. A narrative should be added that properly describes the portion of the Missouri River where the crossing is proposed. This crossing is within the Missouri National Recreational River and is managed by the Dept. of Interior, National Park Service. Any crossing proposed should be coordinated with the National Park Service to insure not to degrade the values of the National Recreational River Designation	A description of the Missouri National Recreation River designation and National Park Service management of the area is included in Section 3.09, Land Use, Recreation and Visual Resources. Section 3.14 describes cumulative impacts, defined in that section as "the incremental impacts on the environment resulting from adding the proposed action to other past, present, and reasonably foreseeable future actions." Potential impacts to the Missouri River crossing point are addressed in Sections 3.03 (Water Resources), 3.07 (Fisheries), Section 3.09 (Land Use, Recreation, and Visual Resources), and 3.13 (Reliability and Safety). No additional comment has been added to Section 3.14, as the Missouri River Crossing is not a cumulative impact issue.
427	USACE	70	9/25/2007	letter	WET	Suggest there should be a table in the EIS that outlines the wetland and waterbody crossings that are impacted that includes the temporary and permanent impacts, the name of the waterbody, location, and crossing method. (A preliminary preconstruction notification packet, dated September 2007, was received from ENSR following the DEIS. This type of table was included in that packet). However, those wetlands included were assumed to have jurisdictional authority by the U.S. Army USACE of Engineers, when that may not be the case. It is also not clear what parameters were used to determine if those impacts needed preconstruction notification.	Section 3.4.3 provides summaries of wetland impacts and Section 3.3.3 provides information on waterbody crossings. The table mentioned in this comment letter was not transmitted to the DOS for inclusion in the EIS. We assume that the total wetland impacts estimated in the DEIS are all wetlands, not just jurisdictional wetlands. We also assume that the data tables submitted to DOS for inclusion in an appendix for wetland and waterbody crossings includes both jurisdictional and non-jurisdictional wetlands.
428	USACE	70	9/25/2007	letter	WET	Generally speaking, all wetland impacts should be included in the document, broken down by state. Jurisdictional determinations should be left up to the respective U.S. Army USACE of Engineers Regulatory offices to make final jurisdictional determinations on wetlands and other potential waters of the U.S. Those offices will ultimately determine the appropriate level of authorization and mitigation.	To the best of our knowledge the wetland impacts disclosed in Section 3.4 include impacts to all wetlands both jurisdictional and non-jurisdictional. Added clarification concerning compensatory mitigation to Section 3.4 just before the measure to prepare a plan to compensate for permanent wetland losses on page 3.4-15.
429	Division of Homeland Security	71	9/24/2007	letter	SAF	From a Homeland Security perspective..., the document acknowledges that pipeline security issues were raised during the EIS scoping process. Therefore, security has been identified as an environmental issue/concern..., but the extent of discussion on security issues is rather vague.	Security issues associated with the pipeline and spill response will be discussed in detail in Keystone's Final Emergency response Plan. A draft version of this plan is provided as appendix C. The ERP will be finalized by Keystone and approved by appropriate agencies prior to pipeline operations.
430	Division of Homeland Security	71	9/24/2007	letter	SAF	TSA currently has a security program that is directly applicable to the DEIS..., namely the program specifically addresses the development of "Pipeline Cross-Border Security Vulnerability Assessments"..., AND the partnership specifically include Canada's natural resource agency. Canada and TSA plan on having a joint conference this coming October to further develop vulnerability assessments for cross border pipelines. So...., it is recommended that TSA's pipeline section be asked to review the document and the Dept. of State permit application. TSA POC is: Jack Fox, General Manager Pipeline Security Section.	Comment acknowledged. Review of the FEIS and Presidential Permit can occur as suggested.
431	Division of Homeland Security	71	9/24/2007	letter	SAF	Chapter 3.13 (Sec. 3.13.2.1) of the DEIS discusses "Reliability and Safety" and purports to provide risk assessments..., but there is only the following which seems to understate what is currently happening in pipeline cross border vulnerability assessments and security measures. The DEIS, without a more detailed discussion and understanding of the governmental/private sector security programs that have been developed and are being developed (and the industry's security best practices) it is possible that there are environmental impacts (e.g., fencing, security patrols) that are not sufficiently discussed in this document. The FEIS may need to include more details on these matters.	Security issues associated with the pipeline and spill response will be discussed in detail in Keystone's Final Emergency response Plan. A draft version of this plan is provided as appendix C. The ERP will be finalized by Keystone and approved by appropriate agencies prior to pipeline operations.
432	Matthew Ponish Farm Service Agency	72	10/1/2007	letter	EDT	Please add on page 3.9-14, under Conservation Reserve Program Lands, 1st paragraph: "Those CRP acres that are directly crossed by the corridor…….would be required to pay liquidated damages equal to 25 percent…."	Comment accepted. Language incorporated into the EIS as suggested.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
433	Matthew Ponish Farm Service Agency	72	10/1/2007	letter	EDT	Please add on page 3.9-15, under Farmable Wetland Program Lands and Other FSA Programs, 1st paragraph: "The FWP is a voluntary program…..improving the land's hydrology and vegetation on no more than 100,000 acres per state.	Comment accepted. Language incorporated into the FEIS as suggested.
434	Frank Pierce Kansas City District USACE	73	9/19/2007	email	FAV	I do not foresee problems within the Kansas City District USACE as to issues on the pipeline	Comment acknowledged; no change to DEIS.
435	Liz Crane NRCS	74	9/21/2007	letter	EDT	On page ES-23 the document states that "Keystone would address impacts to WRP with landowners on a case-by-case basis". Please note that with WRP warranty deeds, NRCS is also a landowner therefore we recommend changing this statement to "Keystone would address impacts to WRP with NRCS and landowners on a case-by-case basis to ensure conservation values are mitigated".	Comment accepted. Language incorporated into Executive Summary as suggested.
436	Liz Crane NRCS	74	9/21/2007	letter	EDT	On page 3.9-2 Keystone states that the route as proposed would cross 3 NRCS easements: one each in South Dakota, Missouri, and Oklahoma. Keystone will avoid all but the WRP easement in Missouri. Keystone determined potential environmental impacts were greater to re-route than to cross this easement. NRCS has agreed to this finding with caveats, which are then described fully in agricultural land use section. To clarify these caveats, we suggest the following changes on page 3.9-16: Keystone will mitigate impacts to NRCS WRP easement lands to the greatest extent possible, according to a subordination agreement and the accompanying site restoration plan developed by NRCS. Ecological site conditions (including vegetation, hydrology etc.) are to be re-established to the "future with no action condition" for all affected areas outside of the area to be maintained. Restoration of the site may take up to 5 years. Maintenance of vegetation would be specified in the maintenance plan developed with NRCS over the full width of permanent ROW.	Mitigation measure revised to include language. Measure now reads: "Keystone should utilize the state-specific NRCS Field Office Technical Guide (Appendix M) for mitigation and revegetation of areas damaged by construction. Keystone will mitigate impacts to NRCS WRP easement lands to the greatest extent possible, according to a subordination agreement and the accompanying site restoration plan developed by NRCS. Ecological site conditions (including vegetation, hydrology etc.) are to be re-established to the "future with no action condition" for all affected areas outside of the area to be maintained. Restoration of the site may take up to 5 years. Maintenance of vegetation would be specified in the maintenance plan developed with NRCS over the full width of permanent ROW. Keystone should consult with the local NRCS representatives to determine the adequacy of Keystone's Mitigation Plan and supplement the plan as needed."
437	Liz Crane NRCS	74	9/21/2007	letter	WET	Table 3.4.3-4 on page 3.4-10 needs to include the Missouri WRP easement.	Revised Table 3.4.3-4 to include a WRP easement .
438	Doyle F. Brown MO DNR	75	9/24/2007	letter	ACK	MDC has provided biological and natural resource information, along with recommendations, throughout the environmental documentation process and most of our concerns have been adequately addressed in the DEIS.	Comment acknowledged; no change to DEIS.
439	Doyle F. Brown MO DNR	75	9/24/2007	letter	WET	MDC does believe the impact to intact and functioning natural communities, particularly forested wetlands in Missouri, may be more significant than the DEIS portrays. Appropriate compensatory mitigation should be sought for the loss of these important habitats.	Wetland and land cover impacts were calculated by Keystone and transmitted to DOS for inclusion in the DEIS. MDC's recommendation for compensatory mitigation for the loss of forested wetlands was included on page 3.4-16 of the DEIS.
440	Doyle F. Brown MO DNR	75	9/24/2007	letter	WAT	MDC remains concerned regarding the proposal to use open-cut trench method to cross the Grand River (~220 ft.). MDC would recommend Keystone evaluate the use of a HDD method at the proposed crossing. If the open-cut method were still pursued, MDC would appreciate the opportunity to review and comment on the site-specific plans.	The Grand River crossing is collocated with the REX pipeline crossing which was open cut. The proposed Keystone crossing falls within areas just disturbed by REX.
441	Doyle F. Brown MO DNR	75	9/24/2007	letter	WAT	Open-cut methods in alluvial streams and rivers can lead to stream gradient changes and bank instability, if timing of construction experiences an unexpected flood event or if best management practices and techniques are inadequate. Backfilling the trench with large rock or riprap and keying the rock into the banks will make the crossings more stable, both short and long term. All resulting grade control structures should ensure aquatic organism passage, including at low flow conditions.	Individual river crossing designs would be evaluated during the USACE permitting process. The use of rip rap and other hard structural components to stabilize river banks is not always appropriate and can lead to additional environmental consequences. The need for bank stabilization would be addressed on a site specific basis, and may include consideration of other stabilization techniques more compatible with the geomorphologic setting of the individual water crossing.
442	Doyle F. Brown MO DNR	75	9/24/2007	letter	REC	The DEIS makes reference to the presence of COAs in Missouri affected by the pipeline route. The Mississippi/Missouri River Confluence COA is located on the floodplain of Missouri and Mississippi Rivers in St. Charles and Lincoln Counties. The COA is important to a large array of fish, wildlife, plants, and a major migratory pathway for birds. The COA has been designated as an Important Bird Area by the Audubon Society and many other federal, state, and local partners are involved in habitat restoration projects on both public- and privately-owned areas within this COA. Timing of construction to avoid conflicts with hunters and peak fall and spring migrations should be incorporated into the DEIS.	Comment acknowledged. The Mainline Project would not cross the Missouri/Mississippi River Confluence COA, but it would cross other COAs in the vicinity. These include the following COAs: St Charles/ Lincoln Alluvial Plain, Mairas Temp Clair Alluvial Plain, West Allan Alton Alluvial Plain, St Louis County Prairie/Savannah Dissected Karst Plain. The FEIS currently contains mitigation measures recommending consultation with public agencies and COA landowners to develop construction schedules so as to minimize potential impact to recreation activities, including hunting.
443	Doyle F. Brown MO DNR	75	9/24/2007	letter	OIL	Concerning the potential of an oil spill, MDC would recommend the entire floodplain and confluence area of Lincoln and St. Charles County be classified as a high consequence area as defined in the DEIS and would recommend a Integrity Management Plan be developed by Keystone.	The identification of High Consequence Areas (HCA) for oil pipelines is part of the Pipeline Integrity Management program required under 49 CFR Part 195 (65 FR 75378 et seq) that Keystone would need to prepare and submit to OPS prior to the initiation of pipeline operations. HCAs are not a requirement of NEPA.
444	Doyle F. Brown MO DNR	75	9/24/2007	letter	SOI	Throughout the construction and re-vegetation phases of the Keystone project, it cannot be overstressed the need to manage and control soil erosion and keep sediment from entering streams and rivers. To minimize impact and damage to natural resources, MDC supports the recommendation of having an Environmental Inspector on every span to monitor construction activities, with the authority to direct the contractor throughout the operation.	Comment acknowledged.
445	Doyle F. Brown MO DNR	75	9/24/2007	letter	MIT	Best management practices to address, control, and prevent the introduction and spread of non-native invasive plant and aquatic organisms (e.g. zebra mussels and veligers) must be implemented and practiced throughout all phases of the project. Re-vegetation of the permanent easement areas, wherever possible, with locally available wildlife friendly native grass seed mixes and forbs, would be a preference of MDC.	Keystone has committed to return water used in hydrostatic testing to the same location from which it was withdrawn; which would prevent the introduction and spread of invasive aquatic organisms (See Section 3.7). The introduction and spread of invasive plants and noxious weeds is addressed in Section 3.5.4 with mitigation measures described in Section 3.5.5.4 on pages 3.5-34 and 3.5-35. Keystone has also committed to the development of a project-wide general noxious weed management plan as added to the FEIS in section 3.5.5.4.
446	Tom Battenhorst MO DOT	76	9/24/2007	email	RDS	The proposed installation procedure, of boring under our facilities and maintaining a minimum of 4' below the lowest point in our roadway ditch, should be sufficient to avoid impacts to our roadways.	Comment acknowledged.
447	Tom Battenhorst MO DOT	76	9/24/2007	email	ACK	Southeast of Mexico there is a registered hazardous waste site on the old AP Green property containing cyanide and explosives, also the former superfund site at the Shenandoah Stables is located on Route 61 near Troy in Lincoln County.	Hazards associated with the AP Green and Shenandoah Stables properties will be addressed in the Final EIS.
448	Carey Grell NGPC	77	10/3/2007	email	WAT	In the comments that we previously provided on the Preliminary Draft EIS, we recommended that site specific construction and mitigation plans also be completed for the West Fork of the Big Blue River and Turkey Creek, both in Saline County, however the Draft EIS does not reflect this. Our recommendation was made because of the important fishery resource also found in these streams, and the concern for potential impacts on the fishery resource and riparian community dependent upon the crossing method used.	The recommendation has been added to the text. Actual site specific construction and mitigation plans for these stream crossings would be addressed during the USACE permitting process.
449	Carey Grell NGPC	77	10/3/2007	email	T&E	NGPC concurs with the information and conservation measures for the western Massasauga in Nebraska that are provided in the Draft EIS in Section 3.8.1 -- Federally listed threatened and endangered species. However, we believe this information should be placed under Section 3.8.2 -- State listed threatened and endangered species, to clearly represent that this species is only state-listed, not federally listed, in Nebraska.	Revised Section 3.8.1 to remove statements concerning the Mississauga in Nebraska. These elements were inserted into Section 3.8.2.3 State-Protected Amphibians and Reptiles along with measure 2 specific to survey requirements for this species in Nebraska.
450	Rodney Weiher NOAA	78	8/30/2007	letter	FAV	Upon these reviews, the Department of Commerce. National Oceanic and Atmospheric Administration has no objection	DOS has notified Keystone of this requirement as requested.
451	Christopher Harm NGS	79	9/13/2007	letter	ACK	If there are any planned activities which will disturb or destroy geodetic control monuments, NGS requires notification not less than 90 days in advance of such activities in order to plan for their relocation	DOS has informed Keystone of this recommendation.
452	Christopher Harm NGS	79	9/13/2007	letter	LIA	NOS recommends that funding for this project includes the cost of any required geodedic monument relocation(s).	Comment acknowledged.
453	Richard Fristik USDA	80	9/10/2007	email	ELE	Do you know if any other coops intend to provide electric service to the pipeline (i.e., the 'TBDs' listed in the DEIS)?	Local Utilites, as known at the time of FEIS publication, are identified in Table 2.2.4
454	Richard Fristik USDA	80	9/10/2007	email	ELE	When does electrical service need to be in place to service the pipeline? Prior to or after construction?	Electrical service needs to be in place prior to pipeline operation.
455	Richard Fristik USDA	80	9/10/2007	email	ELE	The DEIS should include impact assessment of the transmission lines	Comment acknowledged. The FEIS will have additional information on access roads, temporary work areas, powerlines and transformer stations.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
456	Dwight Tillotson NWO USACE	81	9/25/2007	email	RTE01	My only concern is the potential impact on the City of Seward's water well field in case of a pipeline rupture. TransCanada needs to conduct a thorough risk assessment, determine the impacts of a pipeline break on the city's well field, and decide whether to adopt the Seward alternative.	Keystone's proposed route would pass beneath four water lines associated with the city of Seward. These pipelines are composed of PVC and ductile iron pipe. At a minimum, the Keystone pipeline would cross 12 inches below these water lines consistent with the utility crossing agreement. Keystone conducted an evaluation of the probability of the proposed pipeline negatively impacting Seward's water main utility lines. According to the AWWA research cited in Keystone's SCPRC rationale (Gaunt et al. 2006), permeation of water mains by petroleum hydrocarbons is rare (one per 14,000 miles of mains). No permeation incidents involving ductile iron were reported, regardless of the types of gaskets used. PVC pipe is highly resistant to permeation of benzene and toluene and can be used safely in soils contaminated with gasoline, regardless of the level of contamination (Gaunt et al. 2006). Since the concentration of benzene and toluene in Keystone's crude oil is 50 to 100 times less than in gasoline, the risk of a crude oil spill permeating PVC or ductile iron near Seward was determined to be highly improbable.
457	Robert E Robert USEPA	82	10/9/2007	letter	MIT	We recommend that Keystone implement the "recommended measures" listed on the following pages, or provide a discussion in the FEIS as to why they are not appropriate or feasible: Water Resources (p. 3.3-27 through 3.3-28); Terrestrial Vegetation (p. 3.5-31 through 3.5-35); Fisheries (p. 3.7-9 through 3.7-11); Threatened and Endangered Species (p. 3.8-24 through 3.8-89); and reliability and Safety (p. 3.13-31 through 3.13-32, except for bullets #1 and #8).	Noted in appropriate sections that the appropriate additional measures were recommended for inclusion in the Keystone project by USEPA. Each individual permitting agency would determine what recommendations should be included as conditions to permits if a determination to issue the permit is made.
458	Robert E Robert USEPA	82	10/9/2007	letter	WET	We also recommend that Keystone implement the Wetlands "recommended measures" (3.4-15 through 3.4-16). However, we recognize there is some overlap among these measures.	Added "These additional measures are recommended for implementation for the Keystone project by the USEPA (Robert E. Robert, USEPA, October 9, 2007)" to Section 3.4 page 3.4-16.
459	Robert E Robert USEPA	82	10/9/2007	letter	ACK	We recommend that DOS convene a meeting with the resource agencies and Keystone to discuss the recommended wetland mitigation measures in more detail to develop an appropriate set of measures.	DOS has discussed agency comments with Keystone, and as a result Keystone has committed to some additional mitigation measures and would amend its CMR Plan prior to construction to incorporate these changes. Relative to jurisdictional wetlands, Keystone recognizes that permits may include additional conditions including those recommended by agencies with jurisdiction. As part of the USACE 404(b) permitting process resource agencies would be involved in determining the nature and extent of required wetland mitigation consistent with the comments provided on the DEIS.
460	Robert E Robert USEPA	82	10/9/2007	letter	WET	The DEIS identifies more than 1,300 acres of wetlands that would be affected by pipeline construction and operations. EPA recommends the FEIS include additional information in the proposed wetland mitigation plan to demonstrate if the plan will adequately replace lost wetland values and functions.	DOS has discussed this with Keystone. For jurisdictional wetlands, Keystone understands that the degree of required wetlands mitigation will be determined as part of the permitting process and that the comments of the relevant resource agencies as documented in the DEIS will be taken into account in those discussions. It is Keystone's position that wetlands disrupted by pipeline construction would be restored such that there would be no loss of wetlands. A final determination of the degree of required mitigation would occur in the final permitting negotiations.
461	Robert E Robert USEPA	82	10/9/2007	letter	WET	We recommend Appendix B of the FEIS, "Construction, Mitigation and Reclamation Plans," contain more detailed actions or commitments to replace those wetland functions impacted or lost by the pipeline construction and long-term modification of high quality vegetation communities.	DOS has added this recommendation to additional measures in Section 3.4.3 on page 3.4-15. Additional measures agreed to by Keystone as a result of the NEPA process would be included in an amended CMR Plan prior to construction. For jurisdictional wetlands, Keystone understands that the degree of required wetlands mitigation will be determined as part of the permitting process and that the comments of the relevant resource agencies as documented in the DEIS will be taken into account in those discussions. It is Keystone's position that wetland habitats and functions would be restored by following their plan. A final determination of the degree of required mitigation would occur in the final permitting negotiations.
462	Robert E Robert USEPA	82	10/9/2007	letter	WET	EPA recommends the FEIS include a conceptual wetland monitoring plan that will, throughout a period of time, normally 5 years, direct field evaluations of those wetlands crossed by the pipeline to assure wetland functions and values are recovering.	DOS added this recommendation for development of a wetland monitoring plan to additional measures in Section 3.4.3 on page 3.4-15. For jurisdictional wetlands, Keystone understands that the degree of required wetlands mitigation and monitoring would be determined as part of the permitting process and that the comments of the relevant resource agencies as documented in the DEIS will be taken into account in those discussions.
463	Robert E Robert USEPA	82	10/9/2007	letter	WET	The monitoring plan should also include the compensation sites. EPA prefers wetland mitigation take place in areas adjacent or continuous to the project site. If on-site wetland mitigation is not practicable, we recommend off-site wetland mitigation be undertaken in the same geographic area if practicable (i.e., in close proximity and, to the extent possible; the same watershed).	DOS added this recommendation for development of a wetland monitoring plan to additional measures in Section 3.4.3 on page 3.4-15. For jurisdictional wetlands, Keystone understands that the degree of required wetlands mitigation and monitoring and compensation sites if any are needed would be determined as part of the permitting process and that the comments of the relevant resource agencies as documented in the DEIS will be taken into account in those discussions.
464	Robert E Robert USEPA	82	10/9/2007	letter	WAT	The DEIS identifies the open-cut wet method as the applicant's preferred method for crossing rivers, streams and wetlands. Based on available information, EPA understand that the open-cut wet method has the greatest potential for water quality impacts compared to the other three' methods identified in the DEIS. EPA recommends the FEIS further evaluate potential impacts to water quality, aquatic species, riparian and wetland habitat from the various water crossing methods to determine which method would be both practicable and environmentally preferable.	The crossing method proposed at each individual water crossing would require approval by the USACE and relevant resource agencies prior to issuance of permits for the water crossings. While the EIS provides an overall evaluation of potential impacts of the proposed action, it does not obviate the need for Keystone to acquire the required permits from the permitting agencies. Permit applications would be evaluated and approved by USACE and relevant resource agencies, and required mitigations to reduce environmental impact at each specific water crossing would be added as conditions to permit approval.
465	Robert E Robert USEPA	82	10/9/2007	letter	MOR	Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the Keystone Pipeline DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). This rating is based on EPA's concerns about Project impacts and additional information and analysis EPA believes is needed regarding potential wetland, water quality and air quality impacts	Additional information acquired after the publication of the DEIS, including information gathered as a result of comments received on the DEIS, is included in the FEIS.
466	Robert E Robert USEPA	82	10/9/2007	letter	MOR	EPA also believes additional information is needed to fully assess and consider mitigation for the potential impacts of the proposed action.	Additional information supplied by Keystone and additional analysis by DOS has been incorporated into the FEIS.
467	Robert E Robert USEPA	82	10/9/2007	letter	HYD	In Appendix B, Section 8.0 "Hydrostatic Testing," Table I and Table 2 should be revised to include additional information on how to protect these source waters and discharge points from potential releases of non-native and invasive species that could survive the pressures that are developed in hydrostatic testing. To improve the utility of these tables, EPA recommends adding two columns: one column that would provide information about the existence (or absence) of non-native and invasive species residing in the source waterbody and one column that would provide specific instructions for mitigating the impact of transferring waters with contaminants of concern (example below). Consult the following website for information regarding the presence or absence of non-native and invasive species - www://nas.er.usgs.gov/queries/StateSearch.asp.	DOS has relayed the comment to Keystone for consideration when finalizing the Hydrostatic Test Plan. The final HTP would be reviewed by applicable state and federal permitting agencies and would incorporate any applicable permit requirements for NPDES or temporary water use. Discharge of hydrostatic test water would not occur until these permits are in place.
468	Robert E Robert USEPA	82	10/9/2007	letter	HYD	EPA also recommends that the sample analysis instruction at Appendix B, Section 8.2, 3'd paragraph, be revised as follows: The analysis shall determine the ph value and Total Suspended Solids, as well as those specific analytes for which the source waterbody has been listed "impaired."	DOS has relayed the comment to Keystone for consideration when finalizing the Hydrostatic Test Plan. The final HTP would be reviewed by applicable state and federal permitting agencies and would incorporate any applicable permit requirements for NPDES or temporary water use. Discharge of hydrostatic test water would not occur until these permits are in place.
469	Robert E Robert USEPA	82	10/9/2007	letter	AIR01	Construction Impacts - We recommend that Keystone pursue opportunities to use clean diesel equipment, vehicles and fuels in construction of the project, especially in the nonattainment areas (i.e. Madison County, Illinois and St. Charles, Missouri).	Keystone has agreed to maintain all fossil-fueled construction equipment in accordance with manufacturer's recommendations to minimize construction-related emissions. In addition, Keystone will utilize gasoline and low sulfur and/or ultra low sulfur diesel engines that complies with the EPA mobile source regulations in 40 CFR Part 86 for on-road engines and 40 CFR Part 89 for non-road engines; these regulations are designed to minimize emissions. See Section 3.12.1.3.
470	Robert E Robert USEPA	82	10/9/2007	letter	CON	The DEIS does not identify the other refineries in the Midwest that would receive the remaining Keystone Pipeline crude oil for processing. We recommend that DOS identify in the Keystone FEIS:(1) the other refineries that may ultimately receive and process the Keystone Pipeline crude oil, (2) the existing and/or new pipeline route/s that could be used to deliver Keystone crude oil to these refineries, (3) whether or not these refineries may need to be upgraded, and (4) any impacts associated with these pipeline routes and/or refineries and associated facilities.	The EIS states that the Wood River Refinery would receive TransCanada crude oil and analyzes the impacts of the refinery upgrade on air in Section 3.12 and on water in Section 3.3. The identity of other refineries where Keystone crude oil would be sent (from transportation hubs) varies depending on market conditions, availability of imports from other countries, weather conditions, etc. U.S. West Coast refineries would not be likely to receive Keystone crude oil, but any other refinery could be a long-term or short-term recipient, depending on decisions made by the shippers and/or the refinery. Some of these refineries may elect to install upgrades similar to those approved for Wood River but they are speculative at this time. The capacity of the Keystone Pipeline represents only about 2% of daily domestic oil consumption; thus the impacts associated with delivery of Keystone crude oil to refineries other than Wood River would be extremely difficult to quantify. It is purely speculative to identify any refinery other than Wood River that is reasonably certain to process Keystone crude oil.
471	Robert E Robert USEPA	82	10/9/2007	letter	WAT	The DEIS recommends (page 3.3-29): "Crossing-related cover depths should be maintained for at least 15 feet beyond the channel migration zone, as determined by a qualified fluvial geomorphologist ". We recommend that Keystone implement this recommended measure and include it in the mitigation plan. However, we also recommend that the fluvial geomorphologist consult with each U.S. Army USACE of Engineers (USACE) office that has jurisdiction and with state resource agencies prior to making these determinations.	Keystone has agreed to having a qualified professional identify the channel migration zone for each crossing. Keystone would require a USACE permit for each crossing, and therefore the determination of the channel migration zone would require consultation with USACE and the relevant resource agencies prior to issuing a water crossing permit.
472	Robert E Robert USEPA	82	10/9/2007	letter	WAT	Illinois Water Bodies Crossed - The DEIS (page 3.3-21) states that, Appendix J presents 74 water body crossings proposed for the Mainline Project in Illinois. We note that Appendix J only lists 48 water body crossings. Please reconcile this discrepancy in the FEIS.	Appendix J has been updated. The discrepancies have been corrected.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
473	Robert E Robert USEPA	82	10/9/2007	letter	WAT	Appendix K, Impaired Water Bodies in the Vicinity of the Keystone Pipeline Project DEIS - We recommend Appendix K of the FEIS include information on impaired water bodies in South Dakota, which can be found in "The 2006 South Dakota Integrated Report for Surface Water Quality" prepared by the South Dakota Department of Environment and Natural Resources.	Appendix K has been updated to include information regarding impaired water bodies in South Dakota. This information is also summarized in Section 3.3.1.2 of the DEIS.
474	Robert E Robert USEPA	82	10/9/2007	letter	WAT	Wood River Refinery - Waste Water Treatment System - The DEIS identifies the upgrade of the Wood River Refinery as a connected action. The Wood River Refinery upgrade necessitates an upgrade in the refinery's wastewater treatment system. We recommend the FEIS include a discussion of any potential water quality impacts due to these upgrades.	The analysis is included in the FEIS in section 3.3.2.2.
475	Robert E Robert USEPA	82	10/9/2007	letter	OIL	In the Reliability and Safety section of the DEIS (p. 3.1-31 through 3.13-32), we recommend that Keystone implement the "recommended measures" listed in bullets #1 and #8 as revised below: For all locations subject to Clean Water Act Section 311, Keystone should prepare a. site-specific oil Spill Prevention, Control, and Countermeasure (SPCC) Plan that contains all requirements of 40 CFR Part 112 for every location used for staging fuel or oil storage tanks and for every location used for fuel or oil transfer. Each SPCC Plan is to be prepared prior to introducing the subject fuel, oil, or hazardous material to the subject location.	Comment accepted. Section 3.13.6 has been amended as suggested.
476	Robert E Robert USEPA	82	10/9/2007	letter	OIL	Oil and other hazardous materials stored in 55-gallon drums or larger containers should be staged or stored in areas with a secondary means of containment.	Comment acknowledged. Section 2.0 amended as requested.
477	Robert E Robert USEPA	82	10/9/2007	letter	KAR	As the right-of -way (ROW) for the pipeline will also cross into Illinois, we recommend Keystone consult with the Illinois State Geological Survey for the most up-to-date karst related information. We recommend that the FEIS include the results of this consultation, including subsidence hazard risk in Illinois. If karst features (i.e. sink holes, springs) are identified in or near the proposed pipeline' ROW, we recommend the FEIS identify any potential impacts to these resources and the avoidance, minimization and compensation mitigation measures that may be undertaken to reduce the impacts.	Keystone has agreed to consult with the respective state geological survey departments to identify the most up-to-date sources of data on karst-related subsidence hazards along the proposed route.
478	Robert E Robert USEPA	82	10/9/2007	letter	MIT	In addition to the recommended measures in section 3.5, we recommend all construction equipment be completely washed down when transferring from one potential source of noxious weed contamination into another area.	Comment acknowledged. Section 2.0 now includes this information.
479	Robert E Robert USEPA	82	10/9/2007	letter	CME01	we recommend the FEIS be updated, as necessary, to describe the purpose and location of these Enbridge expansion projects.	The four expansion project proposed by Enbridge are discussed in Section 4.2.2. Table 4.2.1 compares these projects to the proposed Keystone Project.
480	Robert E Robert USEPA	82	10/9/2007	letter	FIG	We recommend the Project Overview Figures in Appendix Q (i.e., Figure 2.2-1, Figures 2.1-10 through 15, and Figures 2.1-18 and 2.1-19) include identifying mile post (MP) numbers, refinery numbers and locations, pump station numbers existing utility ROW type/name, and ROW collocation areas in relation to MP numbers.	Comment acknowledged. These items will be included on the figures to the extent that the scale and coverage of the figure allows.
481	Robert E Robert USEPA	82	10/9/2007	letter	ALT	We recommend clarifying the relationship between the Proposed Alternative and the Route Variations identified in Section 4.4.We also recommend the FEIS identify where the various components of these route variations identified in Section 4.4 are located in the landscape in relation to the project's designated MP numbers found in DEIS Tables 2.1-1 and 2.1-2 (pages 2-1 and 2-3 through 2-4) and Project Overview Figures in Appendix Q	Comment accepted. Text will be clarified in the FEIS.
482	Robert E Robert USEPA	82	10/9/2007	letter	ALT	We recommend adding additional information to Table 4.4-1 (Proposed Mainline Project Route Variations for the Keystone Project) on page 4-12 to include route variation information associated with MP 571.5 through MP 1077.9.	Comment accepted. Table has been revised to include route variations incorporated into the proposed alternative from MP 571.5 to MP 1077.9
483	Robert E Robert USEPA	82	10/9/2007	letter	ALT	Clarify whether or not an approximately 0.8 mile lateral pipeline would need to be constructed from the Keystone Mainline pipeline to deliver the crude oil to the Wood River Terminal as stated on page 2-6 or to the Wood River Refinery. If a lateral pipeline needs to be constructed, we recommend Figure 4.5-3 (Appendix Q) be amended to depict the proposed location of the lateral and clearly identify which of the two alternatives- is the proposed Keystone Mainline alternative in this area	Due to recent routing changes, Keystone has determined that no lateral pipleines will be required.
484	Robert E Robert USEPA	82	10/9/2007	letter	CME01	In addition, we recommend that the DEIS explain in more detail which portions of the 1,078 miles of new pipe for the Keystone Mainline Project would collocate and/or abut the 467 miles of existing utility ROW) mentioned on page 2-1. In this regard, it would be helpful to specifically identify by MP numbers those segments that will be collocated or abutting existing utility ROWs. We also recommend the FEIS include additional information to explain why existing utility corridors were not utilized for approximately 6l0 miles.	See changes and additional discussion in Section 3.14 (Cumulative Impacts) and Section 4.0 (Alternatives).
485	Donald Hunt Sunnyvale Farms	83	9/20/2007	letter	RTE05	The pipeline would cross a newly developed area for a center point irrigation system. To avoid the system we would prefer a route that runs to the east of an old abandoned railroad line that runs N-S through the section.	Keystone would work with individual landowners to find the best route though their property within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
486	Donald Hunt Sunnyvale Farms	83	9/20/2007	letter	VAL	The route through the irrigation system would cause considerable economic loss during the irrigation season when the need for water is very important to the survival of the crops.	As noted in section 3.9.3.2, "Agricultural Land," Keystone would implement a Mitigation Plan to minimize adverse effects on agricultural activities. Measures include, among others, those which will allow for irrigation to continue during construction when feasible and mutually agreeable to Keystone and landowners; avoiding initial disruption of surface drainage, installation of trench breakers on slopes at regular intervals to prevent water movement and erosion, and allowance for continued operation of waterlines during construction. If interruption of waterline services leads to agricultural resource damage, Keystone would provide reasonable compensation to landowners for lost productivity.
487	Donald Hunt Sunnyvale Farms	83	9/20/2007	letter	SOI	Disturbance of the subsoil will cause the tower wheels to become stuck when the cross the depth of the new pipeline.	Keystone has stated that "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." If productivity suffers due to interference with irrigation systems, that productivity loss should be compensated for, assuming that such a provision is written into the easement agreements.
488	Richard Starke	84	10/10/2007	email	NOI02	Have you considered the noise that a pipeline across my land would do to the hearing of farmers who passed over the pipe?	Material traveling through a buried pipeline would not emit audible noise above the surface or perceptible level of vibration. Updated text in Section 3.12.2.3.
489	Richard Starke	84	10/10/2007	email	WAT	Have you considered the impact loads of heavy trucks and their causing the pipe to be squashed so that it leaks large amounts of oil that flows down the slope and destroys Valley City and pollutes the Sheyenne river and lake Ashtabula?	The pipeline excavation will be backfilled and compacted according to engineering specifications designed to support vehicular traffic. Beneath roadways, pits would be excavated on each side of the crossing to seat boring equipment. A hole equal to at least the diameter of the pipe then would be bored under the feature, and a pre-fabricated pipe section would be pulled through the bored hole. For longer crossings, pipe sections would be welded prior to the pull beneath the crossing. The integrity of the existing roadway would not be impacted. See response to comment 39 for additional information.
490	Yvonne Lee	85	9/19/2007	letter	NOI02	Because a 55 dB noise level is over 1000 times more intense than the 35 dB background noise, the noise mitigation measures need to be lowered at least 10 decibels. I am also concerned about monitoring these levels.	Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels. See Section 3.12.2.3.
491	Yvonne Lee	85	9/19/2007	letter	REG	I am also concerned about monitoring these levels. Who will assure that TransCanada complies with the recommendations in the EIS	Individual jurisdictions along the pipeline corridor would be responsible for monitoring compliance with local noise ordinances. Some potential mitigation measures discussed in the DEIS have been accepted by the Applicant and will be included in a revised CMR prior to issuance of the Presidential Permit. These mitigation measures would be applied on all construction spreads along the pipeline corridor. Other potential mitigation measures discussed in the EIS may be included as conditions to individual permits issued by regulatory authorities with jurisdiction at various locales along the proposed corridor. The Applicant has committed to an Environmental Inspector to ensure compliance with the CMR during construction. Permitting agencies would also provide monitoring during construction and operation in their specific jurisdictions.
492	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL04	the terminology is inconsistent with 36 CFR part 800. For example, historic property is specifically defined by the regulations while cultural resources are not.	Comment acknowledged. DEIS text is amended to clarify the difference between sites of religious and cultural significance and TCP issues.
493	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL04	The document refers to Indian tribes as tribes, Native American tribes and tribal groups. Only Indian tribe is specifically defined by the regulations. The term potentially eligible is not defined in the regulations; sites may be eligible, not eligible or unevaluated for listing on the National Register of Historic Places.	Comment acknowledged. DEIS text has been amended to address concern.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
494	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL04	The roles and responsibilities of each party are not clearly defined. For example, the SHPO is not responsible to provide the ACHP with an assessment of the level of projected impacts on historic properties.	Comment acknowledged. DEIS text has been amended to address concern.
495	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL04	The DEIS indicates that within a two mile wide corridor, the record search identified 30 cultural resources; the text further indicates that a total of 243 historic structures and buildings were also identified within the two miles corridor. It is unclear what the difference is between the 30 cultural resources and the 243 historic structures and buildings.	Comment accepted. DEIS text has been adjusted to reflect design changes since research design was submitted
496	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL01	the research design indicates that the Level III and Level II inventory lengths are "not finale as the recommended geomorphologic reconnaissance will probably identify additional areas with moderate to high site potential and segments within the areas recommended for Level II inventory will ultimately be investigated to Level III standards." Based on this statement it was our understanding that further on the ground survey would be conducted in addition to the proposed 38.5 miles.	Comment acknowledged; no change to DEIS. SHPO met with applicant and resolved concern.
497	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL01	The DEIS fails to adequately explain efforts to identify traditional cultural properties.	Comment accepted; DEIS text will be updated to reflect post-DEIS tribal consultation – however, exact statement / resolution is dependent upon the results of ongoing consultation with the Dakota tribes and SHPO
498	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL01	We do not concur with the assessment made by Metcalf Archaeological Consultants, Inc. that historic features and standing structures located within the project APE at five locations are non-contributing elements to unevaluated sites. The SD SHPO has previously outlines concerns regarding this issue in correspondence dated March 23, 2007 (comments concerning December 2006 Metcalf Archaeological Consultants, Inc. report) and April 24, 2007 (comments concerning the DEIS).	Comment acknowledged. SHPO met with applicant and resolved concern. There will be a change in the FEIS to reflect this additional information.
499	Paige Hoskinson SD SHPO	86	10/4/2007	letter	CUL01	In addition, according to SD SHPO records, 7 sites have been identified as unevaluated, 8 sites have been determined eligible and 2 isolated finds have been determined to be not eligible for listing on the National Register of Historic Places. This is not consistent with the information provided in the DEIS.	Comment accepted. Data in FEIS has been adjusted to take into account new surveys conducted since DEIS.
500	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	pg xix - NPDES, "Permit" should be "Pollutant"	Comment accepted; text changed as requested.
501	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	ES-1 Last bullet of first set "Utility" should be "Utilities"	Comment accepted; text changed as requested.
502	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	ES-2 3rd paragraph First sentence does not appear necessary.	Comment accepted; text changed as requested.
503	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	HYD	ES-15 Proposed fisheries mitigation Nothing is mentioned here or in Appendix B regarding measures to avoid transfer of invasive/exotic species.	Appendix B was produced by Keystone and direct changes not be possible. Keystone has committed to returning hydrostatic test water to the same source or within the same general vicinity, which would prevent the introduction and spread of invasive aquatic organisms. Information regarding the potential spread of invasive species and mitigation measures added to Section 3.7.3 of DEIS.
504	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	ES-27 2nd paragraph, 1st line "can be expected" seems tentative or uncertain; re-write to say "would" or "is expected" - ?	Comment accepted; text changed as requested.
505	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	CME03	ES-28 Section ES.6.15.2 There are no other large corridor projects that need to be considered, e.g., transmission lines, railroads, major highways?	Section 3.14 considers existing linear project and identified future additional reasonably foreseeable pipeline projects.
506	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	HYD	1-8 Section 1.3.2.2, 1st para., last line Is hydrostatic test water being classified as a storm water discharge? Do not necessarily disagree, but the way it is worded here is awkward.	Comment accepted and text changed in DEIS.
507	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	1-11 1.3.2.9, Heading "Utility" should be "Utilities"	Comment accepted. The text has been edited as suggested.
508	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	1-13 Last para., 2nd line Insert "RUS" after "FSA"	Comment accepted. The text has been edited as suggested.
509	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	1-14 Sec. 1.7, 1st para., 2nd line Suggest changing "contracted to" to "constructed by"	Comment accepted. The text has been edited as suggested.
510	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ELE	2-6 3rd paragraph Transmission line data do not appear to match those found in table 2.2-3: table indicates 22 new lines on the Mainline; 7 are 69-kV, 8 are 115-kV, and none are 161kV.	Comment accepted. Totals have been updated. See Section 2.1.1.2, 2.1.2.2, and 2.2.3.4.
511	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ELE	2-14 3rd paragraph, 3rd sentence Table 2.2-3 indicates total of 12.3 miles of new transmission line	Comment accepted Totals have updated. See Section 2.1.1.2, 2.1.2.2, and 2.2.3.4.
512	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	2-31 Table 2.2-3 The following changes should be made: Pump station #15, the 25-mile line upgrade is not longer necessary, so should be deleted; Pump station #17, 12 miles of new 69kV, 18 miles of existing 69kV upgrade; Pump station # 18, local utility is Cass County Electric Cooperative, Inc., 14 miles of new 115kV line, and transformer is 15 MVA; Pump station # 19, local utility is Central Power Electric Cooperative, 23 miles of new 115kV line, substation would be 20/26/30 MVA.	Section 2.0 incorporates information provided in November 2007 by Keystone in filing #9. This information differs from the comment, but describes the project as provided by the applicant at the time of FEIS publication. See Sections 2.1.1.2, 2.1.2.2, and 2.2.3.4 - as well as Table 2.2-3.
513	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	2-34 2nd para., 1st line Change 18 to 22.	Construction is only 18 months for the Mainline - construction for the Cushing Extension is 6 months as stated in the next sentence. No change to DEIS.
514	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ELE	2-34 3rd para., 2nd sentence The text regarding no new substations seems to contradict what was stated in the previous paragraph.	Totals have updated. See Section 2.1.1.2, 2.1.2.2, and 2.2.3.4.
515	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	3.3-29 2nd bullet under Connected Action "wasted' should be "washed"	The text has been corrected in the EIS.

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516	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	3.5-22 4th bullet in 3.5.5 “plant” instead of “plan”	Comment accepted; text changed as requested
517	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	3.5-27 Table 3.5.5-4 To match text, and for clarity, suggest changing “Number” to “Number Crossed”	Comment accepted; text changed as requested
518	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	3.5-35 Lead sentence under 3.5.5.5 Place a period after “Vegetation” and insert the following: “measures marked with an * would be implemented by servicing electric cooperatives or their contractors in the modification or construction of transmission lines”	Comment unclear - no measures were marked with an *. Assumed commenter was referring to bulleted items. Added text as provided but replaced "marked with an *" with "listed below".
519	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	3.6-16 Heading sentence for bullets Replace “if electrical service providers agree to” with “by”, and change “implement” to “implementation of”. Also insert after the bulleted list this sentence: “Electrical service providers, and where applicable the USDA Rural Utilities Service, would coordinate with the appropriate state and federal resource agencies to identify specific locations for flight deterrents or other avoid/minimize measures.”	Reworded and added sentence as requested. Revised "avoid/minimize measures" to "avoidance or minimization measures".
520	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	T&E	Section 3.8 Throughout section, text regarding bald eagle needs revision based on recent de-listing and related (heightened) protections under the Bald and Golden Eagle Protection Act. Also, in the appropriate location in this section, there should be some further explanation as to why a Biological Assessment (BA) was not prepared, if one will be prepared, or if it has been integrated into the DEIS.	Section 3.8.1.1 was revised to describe the de-listed status of the bald eagle. Added the following sentence to Section 3.8, "A separate Biological Assessment, which addresses federally listed endangered, threatened and candidate species was prepared by Keystone and submitted to the USFWS.
521	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	3.8-24 First sentence under table if electrical service providers agree to” with “by”, and change “implement” to “implementation of	Comment accepted; text revised as suggested.
522	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	LNU	3.9-3 to 3.9-5 Table 3.9.3-2 and related text Material needs to be added to the effect that servicing power lines will be constructed in existing ROWs and thus potential impacts to land resources are expected to be negligible.	Information added supplying available data on powerlines. This includes length and construction information. No information for powerlines has been added to Table 3.9.3-2 or 3.9.4-2, which catalogue acreage requirements. Analysis determined both the land use and visual impacts of powerlines to be permanent, but minor.
523	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	LNU	3.9-35 Last paragraph before section 3.9.4. Add another brief section here regarding servicing power lines, and that visual impacts would be minimal due to the relatively short length of any given line, and that in many cases they will be connecting to existing lines.	Information added supplying available data on powerlines. This includes length and construction information. No information for powerlines has been added to Table 3.9.3-2 or 3.9.4-2, which catalogue acreage requirements. Analysis determined both the land use and visual impacts of powerlines to be permanent, but minor.
524	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ELE	3.11-62 Sec. 3.11.2.8 After the bulleted list, add text indicating that in coordination with the SHPOs, appropriate surveys would be conducted for transmission line corridors as necessary (could also be included in Section 3.11.5.8).	The surveys of transmission line corridors will be taking place after the FEIS, but prior to construction. The methods, responsible parties and timeline for these surveys will be defined in the PA.
525	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ELE	3.11-77 Sec. 3.11.4 Will these plans apply only to the pipeline/ROW itself, or the pipeline and all appurtenant facilities, including substations and transmission lines?	The Section 106 process for the project does not include DOE and WAPA as consulting parties. These agencies would deal with Section 106 compliance on their own based on recent discussions with them. All other agencies are consulting parties, and the unanticipated discovery plans for each state are incorporated into the Programmatic Agreement that will apply to Section 106 compliance for those agencies.
526	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ELE	3.14-1 Sec. 3.14.2 The section also should include transmission lines, at least those that are of high voltage and/or length.	Comment acknowledged. Large transmission lines that are within the project area will be included in the cumulative effects analysis.
527	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	ALT	General, Recommend making the alternatives analysis Chapter 2.	DOS has generally followed the standard FERC EIS outline that includes the alternatives analysis as Chapter 4. This decision was made to reduce confusion from stakeholders familiar with the FERC outline from other pipeline corridors in the general project area that have recently published EISs (e.g. REX). No change to EIS
528	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	MIT	29 5-6 5.5.2(3) Maybe I missed it in Chapter 3, but why does vehicle washing only apply to the Kansas/Oklahoma crossing, but not other state boundary crossings.	Comment acknowledged. Oklahoma is the only state that requires vehicle washing when crossing the border. However, wording to indicate that vehicle washing will be routinely conducted has been added to section 2.0.
529	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	T&E	5-9 5.8.2(3) Suggest “gray bats” instead of “gray bat individuals”.	Comment accepted ; text revised as suggested.
530	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	T&E	5-9 5.8.2(4), 5th line Should it be “maternity or roost trees”?	No change to text. Recommendations are specific for identified potential roost trees (which may include maternity roost trees as well as non-maternity roost trees) and for any identified maternity roost tree. Wording was retained as it appeared in USFWS correspondence.
531	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	EDT	5-14 2nd paragraph, 4th line Should the second figure be $7.45B?	Comment accepted; text changed as requested.
532	Mark Plank USDA Rural Development, Utilities Programs	87	10/10/2007	letter	FIG	Figure 2.1-10 The power line route for PS 19 (Sargent County, ND) should be corrected to show the line going west, then south	Comment acknowledged. The figure for PS 9 reflects the most recent information filed by Keystone in filing #9 dated September 10, 2007.
533	Robert E Robert USEPA	82	10/9/2007	letter	HYD	EPA recommends the FEIS include additional information concerning hydrostatic pipeline testing and its associated impacts. We recommend the FEIS include additional information about the occurrence of invasive or exotic species residing in probable source waters, and a discussion of mitigation measures to address the potential impact of transferring waters containing contaminants of concern.	Keystone has committed to returning hydrostatic test water to the same source or within the same general vicinity, which would prevent the introduction and spread of invasive aquatic organisms. Information regarding the occurrence and potential spread of invasive species and mitigation measures added to Section 3.7.3 of DEIS. To ensure compliance with water quality standards set for the project and permits, Keystone will take water samples prior to the discharge after testing is complete.
534	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	TransCanada, has been working closely with the Missouri National Recreation River to take into account the effects of the horizontal directional drill (HDD) method proposed for the crossing of the Missouri River near Yankton, South Dakota. The Department believes the proposed mitigation plans have addressed our concerns with this method of crossing and we will not comment further on that issue at this time.	Comment acknowledged.
535	Willie R. Taylor USFWS	88	10/11/2007	letter	REC	The North Country National Scenic Trail links scenic, natural, historic, and cultural areas in seven northern states, including North Dakota. The approximately 4,000-mile-long trail, when completed, will become the longest continuous hiking trail in the United States. The Keystone project appears to cross the trail route in Ransom County, near Fort Ransom State Park, though the trail has not been established on the ground in this area. The maps contained in the EIS show the Keystone project to be west of Fort Ransom State Park and east of Valley City. The Department requests that the trail route be restored after construction, the trail not be used as access during construction, and that access to the trail remain open during construction, as much as possible	The North Country Trail has not been specifically addressed in the FEIS because it is not an established or certified recreational route where it intersects the proposed ROW. For trails in general, Keystone will restore any that cross the construction and permanent ROWs, and pipeline operation would not be expected to affect recreation on trails crossing the pipeline ROW. Construction period impacts include limited access within and across the ROW, increased dust and noise, and visual construction activity. These impacts would be limited to the construction period, and would be temporary and minor. Keystone would provide access to public lands and to landowners, as practicable. Access for construction vehicles during the construction period would be via the construction ROW itself from existing intersecting public roads, and in some cases temporary access roads. Intersecting trails would not be used for access. The NCT appears to follow a road named alternatively Sheyenne River Road/Hjelle Parkway/CR-3715/Valley Road in this vicinity.

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536	Willie R. Taylor USFWS	88	10/11/2007	letter	REC	We also request that no pumping stations be located near the trail route; we note that pump station 18 is located in Ransom County but seems well away from the trail.	PS-18 would be planned adjacent to the intersection of 119th and 57th in Ransom County, ND. This appears to be well west of the North Country Trail Route, which follows the Sheyenne River Valley.
537	Willie R. Taylor USFWS	88	10/11/2007	letter	REC	Finally, we request that any electric-line construction avoid impacts to the trail route, and that after construction, the project does not permit or encourage motorized vehicle access to the trail. In addition, the North Country Trail staff may be willing to discuss the possibility of collocating the trail on a portion of the Keystone project right-of-way.	Electric utilities would be permitted and constructed by local utilities and would follow existing county road ROWs, with short service drops to pipeline facilities as needed. Most service drops would connect to existing powerlines. A 115-kV powerline would be constructed by Cass County Electric Cooperative east-west along 57th St. SE/CR-136 in Ransom County, ND, which would cross Hjelle Parkway/CR-3715 and the Sheyenne River. The North Country Trail appears to follow Hjelle Parkway at this point. Based on the transmission voltage, the wood or metal poles for this line would be expected to be 55 to 65 feet tall and 9 to 11 feet wide, with wire conductors strung between. These facilities would be a permanent, but minor visual impact on the landscape. Section 3.9 addresses trespassing by vehicles and persons via the ROW, and recommends fencing and other access prevention on a case-by-case basis with individual landowners. Construction vehicle access would be via the ROW itself. Keystone is developing ROW easements with individual landowners, which would allow use of land for pipeline operation and ROW maintenance.
538	Willie R. Taylor USFWS	88	10/11/2007	letter	REC	Following the Missouri and Columbia Rivers, the Lewis and Clark National Historic Trail stretches through 11 States. The Lewis and Clark Trail staff expressed some concerns with the Keystone project where it intersects the trail. The HDD crossing of the Missouri River between Doniphan County, Kansas and Buchanan County, Missouri, shown in Appendix D, Figure HDD-1.14-Rev-1, is near the Jentell Brees Fishing Access, owned by the Missouri Department of Conservation. An existing Platte Pipeline already crosses this property, running through the access road at the parking area, and the proposed path for the Keystone project would run south of the existing pipeline and visitor access areas. Removing vegetation for construction and maintaining the right-of-way to keep woody growth out may have both long- and short-term negative impacts on the riverbank habitat at this access.	The Mainline Project will cross the Jentell Brees Fishing Access area at MP 751.0 and continue through Missouri Department of Conservation land for approximately 0.1 mile. The HDD crossing of the river at this point is not expected to affect fishing or other water recreation activities. Maintenance of woody vegetation would cause permanent and significant impacts to both recreation and visual resources within the permanent ROW, and long-term and significant impacts within the construction ROW. The FEIS recommends mitigation to route the proposed Mainline Project as closely to existing ROWs as possible, to lessen the cumulative footprint of the affected area. Keystone provides several measures in its Mitigation Plan (Appendix B) to decrease impacts in forested areas.
539	Willie R. Taylor USFWS	88	10/11/2007	letter	CUL03	The proposed path of the Keystone project from this crossing will pass within 1,600 feet of the Lewis and Clark Expedition campsite of September 13, 1806, as determined by Dr. Robert Bergantino, of Montana Tech of the University of Montana System. Due to meandering of the Missouri River, this campsite now lies in an agricultural field on presumably private lands. It is unlikely any cultural material associated with the use of the campsite remain. However, TransCanada should be aware that altering the path of the pipeline to the south after crossing the Missouri River into Buchanan County, Missouri, has the potential for affecting this campsite location.	No change to DEIS necessary. Applicant is being made aware of this issue to ensure it is not a conflict.
540	Willie R. Taylor USFWS	88	10/11/2007	letter	REC	The final 1.2 miles of proposed pipeline in St. Charles County, Missouri, crosses through the Jones-Confluence State Park, and may impact floodplain habitat, endangered species, and visitor use in the park. The MO DNR acquired land for this park in 2001, with the goal of restoring the floodplain ecosystem by promoting growth of native trees and other vegetation. This is particularly important because of the location within a major metropolitan area where few natural conditions remain. The construction of the pipeline and requirement to keep woody vegetation from the right-of-way will hinder the ability to reach this goal of restoration. Several maintained rights-of-way in this area will result in a patchwork of habitats that cannot reflect the natural condition of the floodplain.	Keystone has re-routed the pipeline within the Park to avoid recently planted hardwood trees and decurrent false aster. Keystone has also created a site-specific crossing plan for the area. The project still crosses the Park, but the current route will minimize disruptions to the public during construction and will avoid known resource areas. Clearance of woody vegetation and maintenance of the permanent ROW in an open condition will result in permanent, but localized impacts to recreation and visual resources within the Park. This will have long-term impacts to recreation and visual resources. But, non-woody vegetation types would be allowed to regenerate over the full width of the ROW. Keystone has agreed that vegetation maintenance will not be conducted over the full width of the ROW in wetland areas.
541	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	The federally protected decurrent false aster occurs in the Pat Jones-Confluence State Park. TransCanada should implement the recommendations of the U.S. Fish and Wildlife Service (FWS) to protect this species in this park. In addition, potential habitat for the endangered eastern Massasauga rattlesnake has been identified within the park, particularly in the area of the proposed HDD entry point. TransCanada should implement the FWS recommendations to protect this species within the park.	Removed measure at bottom of page 3.8-50 "If the decurrent false aster. . ." and added "Keystone has developed a small route variation in consultation with the USFWS and the Missouri Department of Natural Resources through the Confluence State Park to avoid an area of recently planted hardwood trees and an area where decurrent false asters are located. Table 3.8.1-10 was updated with survey information received from Keystone in September 2007.
542	Willie R. Taylor USFWS	88	10/11/2007	letter	REC	The proposed HDD entry point and project right-of-way is less than 1,000 feet from the parking lot and kiosk for the confluence of the Missouri and Mississippi Rivers. This is a significant point on the Lewis and Clark Trail since it demarcates the beginning of the journey west. This location attracts not only Lewis and Clark enthusiasts, but also many other visitors unaware of this connection. The installation of the HDD crossing will impact visitor enjoyment by preventing or limiting access for a time, and by increasing dust, noise, and construction activity in an area that is generally removed from these types of distractions. The linear right-of-way clear of vegetation will result in a long-term impact.	Keystone has rerouted the pipeline in the vicinity of the Confluence State Park. The pipeline does not avoid MO DNR land entirely, but the new HDD entry point on the Missouri side will be located several hundred feet north of the parking area. and will lessen the potential impact, although it will not eliminate the conflict entirely. Construction within the area will result in short term limited access, dust, noise, and construction activity. Cleared grasslands and wetlands could regenerate within both the construction and permanent ROW, but may take five or more years to regenerate fully. Woody vegetation and trees would be cleared from both the construction and permanent ROW. These impacts would be long-term, but localized for the construction ROW and permanent, but localized for the permanent ROW, where such vegetation would not be allowed to regenerate during the life of the project. This will result in permanent, but localized impacts to visual resources and recreationists' enjoyment of this section of Confluence State Park.
543	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	TransCanada should follow the recommendations for increasing the distance of sedimentation barriers to water bodies from 10-to-50 feet minimum, and 100 feet where practical, to help preserve water quality in all streams, not only the major riverways	The extra workspace areas associated with water crossings are used for the storage and assembly of pipe, other materials and spoil from the water crossing excavation. Placement of spoil 50 feet or more from the water body necessitates additional equipment to move spoil. This would dramatically increase traffic through the work area. No hazardous materials would be stored within these areas. No refueling of equipment will be allowed within 100 feet of these resources except in certain extraordinary circumstances as approved by the environmental inspector.
544	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	FWS previously provided the project consultant, ENSR, with information regarding fish and wildlife resources that could occur or be impacted by the proposed pipeline on April 28, 2006. FWS also provided the DOS with comments and recommendations on the proposed pipeline project in letters dated December 1, 2006, and June 6, 2007. We have not reiterated our previous comments and recommendations in this letter, however they are still applicable.	Received these letters on November 5, 2007. A previous draft version of the USFWS comments on the preliminary DEIS had been received and corrections had been included in revisions to Sections 3.8. These letters were reviewed again and corrections made to the DEIS where appropriate.
545	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	We recommend that the DOS review the June 6, 2007, letter because several issues and recommendations were not addressed in the DEIS and still remain incorrect or unresolved.	We had received a draft version of this letter with USFWS comments on the preliminary DIES and corrections had been included in revisions to Section 3.8 where appropriate. Some USFWS issues were not addressed because DOS cannot require Keystone to comply with the recommendations.
546	Willie R. Taylor USFWS	88	10/11/2007	letter	REG	Throughout the DEIS, in Bold Type the DOS makes recommendations for Keystone to follow. The FWS strongly recommends that DOS make these recommendations conditions of the Presidential Permit (Permit) and FEIS for the construction and operation of the proposed pipeline projects to assure avoidance and minimization of the adverse impact to natural resources. This action would be analogous to the Federal Energy Regulatory Commission (FERC) process of making recommendations conditions of their pipeline permit approval process.	The Presidential Permit issued by DOS applies to the first 1000 feet from the border crossing with Canada. Conditioning the Presidential Permit will have little practical effect on the over 1300 remaining miles of the pipeline ROW. The recommendations in bold throughout the DEIS were presented to all cooperating agencies, including USFWS. DOS has discussed these recommendations with the cooperating agencies and with the Applicant. Where the Applicant has agreed with the recommendations, they will be included in a revised CMR prior to issuance of the Presidential Permit. Recommendations that have not been accepted by the Applicant may still become conditions of individual permits issued by applicable regulatory agencies at the Federal, State, or local level prior to construction. Section 1.0 has been amended to include this information.
547	Willie R. Taylor USFWS	88	10/11/2007	letter	REG	The DEIS states in numerous sections that native grasslands disturbed by the project will be replanted with native grass seeds. However, in other sections, the DEIS states that native seeds or plants will be utilized when agreed upon by the landowner. While FWS prefers and strongly recommends restoration utilizing native species, we recognize that the landowner has the right to decide which species to utilize during restoration planting. Because of the negative impacts that many non-native plants can have on native grasslands, we recommend that Keystone encourage landowners to utilize native seeds during restoration.	On federal lands and federal conservation easements native grasslands would be replanted with native grassland seed as recommended. Additionally, Keystone would encourage landowners to replant native grasslands with native grassland seed as recommended. However, the landowner makes the final decision.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
548	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	The Mississippi/Missouri River Confluence Conservation Opportunity Area (COA) is located on the floodplain of Missouri and Mississippi Rivers in St. Charles and Lincoln Counties. The COA is important to a large array of fish, wildlife, plants and a major migratory pathway for birds. During peak migration, ducks, geese, shorebirds, large wading birds, raptors, warblers and other songbirds utilize habitats along the Confluence and the river corridor to rest, refuel and nest. Noted fish and wildlife natural areas in the COA area include Ellis, Dresser, and Maple Islands on the Mississippi River, Pelican and Cora Island on the Missouri River, the Missouri Department of Conservation's Marais Temps Clair Conservation Area, the USACE Environmental Demonstration Area, the Missouri Department of Natural Resource's Confluence Park and numerous wetland and open water areas associated with duck clubs and county parks. Construction within the COA should not occur during fall and spring migration. Please contact the Missouri Department of Conservation for more detailed date information.	Added Mississippi/Missouri "River Confluence Conservation Opportunity Area to Table 3.6.5.1. Added description of wildlife use of this area to page 3.6-13. Added recommended measure to page 3.6-15.
549	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	The DEIS states that along the Cushing Extension, disturbed acreage would be restored and returned to its previous aboveground use after construction, except for approximately 17 acres in aboveground facilities. This is not an entirely accurate statement. In reality, 1,807 acres of permanent ROW will be maintained in herbaceous vegetation. Further, Keystone is obligated to plant the vegetative species desired by the landowner. If an area of once native tallgrass prairie is disturbed by Keystone and the private landowners request Bermuda be planted by Keystone during restoration, then Keystone is obligated to do that. This will allow for the returned above ground use by domestic livestock but not for native wildlife. This Bermuda monoculture will not support the same diversity of species as the native tallgrass prairie ecosystem. Therefore, in these situations, the previous use by wildlife will not return.	Could not locate this statement within the Vegetation or Wildlife sections. Alerted Land Use section author that this should be revised if it occurs within Land Use. Added this statement to Section 3.6.5, "However, during restoration Keystone would be obligated to reseed the area as directed by the land owner, such that areas of native vegetation could be converted to non-native species. Such conversion would reduce the value of the area as habitat for wildlife."
550	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Maps and location data of the biological surveys should be provided to the appropriate FWS Ecological Services (ES) field offices. Copies of all information should also be sent to the Nebraska Field Office, which is serving as the FWS' main point of contact for this pipeline project. This will provide the FWS with essential data for our records for this project and future recovery efforts.	Comment acknowledged
551	Willie R. Taylor USFWS	88	10/11/2007	letter	LND	The FWS recommends defining "small total area" and "available habitat." These terminologies appear subjective. Scale of impacts can vary widely depending on the type of ecosystem, species, habitat edge, and numerous other variables. Further, a linear shaped project does not necessarily lessen the impacts to wildlife and their habitats. We recommend including citations of published studies that addressed the impacts to wildlife and their habitat from similar linear type projects to support the DOS' determinations.	Calculated "available habitat" by state using a 5 mile corridor on either side of the pipeline from available land cover mapping. Reviewed mapping for large areas of uninterrupted land cover types such as grasslands (prairie) and forests to evaluate potential habitat fragmentation. Added citation for references describing habitat impacts from linear projects. To be finished
552	Willie R. Taylor USFWS	88	10/11/2007	letter	MIT	Pursuant to the Fish and Wildlife Coordination Act (488 Stat. 401; 16 U.S.C. 661 et seq.), the FWS recommends that all unavoidable impacts to fish and wildlife habitats be mitigated in accordance with guidelines provided by the FWS ES field offices and State Fish and Wildlife agencies	Text in Section 3.6 has been amended to say "USFWS will recommend to permitting agencies that unavoidable impacts to fish and wildlife habitats be mitigated in accordance with guidelines provided by the USFWS Environmental Services Field Offices and state fish and wildlife agencies."
553	Willie R. Taylor USFWS	88	10/11/2007	letter	ERP	The Draft Emergency Response Plan (Appendix C) is not completed so the FWS is unable to provide comments on this section.	The Draft Emergency Response Plan will be finalized by Keystone prior to pipeline operation as per 49 CFR Part 194.119 and submitted to USDOT/OPS for review and acceptance.
554	Willie R. Taylor USFWS	88	10/11/2007	letter	ALT	The FWS does not believe that the proposed alternatives were described in sufficient detail for evaluation. We also do not believe that the evaluation of these alternatives nor the impacts to or lack of impacts to environmental resources was sufficiently evaluated. We recommend further analysis of the proposed alternatives to allow for equal comparison between Keystone's preferred alternative and other proposed alternatives.	The level of detail in the alternatives analysis is consistent with that typically included in FERC EIS analysis for natural gas pipelines. DOS is following a general FERC approach to the EIS process. The FERC model has been successfully used to assess natural gas pipelines of similar length and is considered sufficient for the Keystone EIS. No change to DEIS.
555	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page ES-29, Section ES.6.15.3, Cumulative Impacts-Terrestrial Vegetation and Wildlife: The DEIS states, "The total amount of vegetation that may be affected by all of the reasonable foreseeable projects, including the Keystone Project, is relatively small compared to the abundance of similar habitat in the Project area." Please see the FWS' comments identified as Page 3.14-9, Section 3.14.4, Summary of Cumulative Impacts: Terrestrial Vegetation and Wildlife below.	Comment accepted; text revised Section 6.15 page ES-30 to correct statements.
556	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 1-3, Section 1.1 Table 1.1-2 Ownership of Land Crossed by the Keystone Project: Please identify in the FEIS the State land in Oklahoma that would be crossed. In addition, we recommend this table list all public lands that the proposed project will cross in the DEIS.	Land ownership is further discussed in more depth in Section 3.9, Land Use. Section 3.9 does not include a table with ownership of all public lands along the project route. This information is not currently available. Section 3.9 includes a table summarizing ownership of line miles and acres for federal, state, and privately-owned lands. Keystone has confirmed that 3.6 miles of state owned land is crossed in Oklahoma. This is Oklahoma state school land, and the definition has been added to Section 3.9.4.1.
557	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 1-9, Section 1.3.2.5, Introduction – US Fish and Wildlife Service: As recommended in the Preliminary DEIS, please add the following in the FEIS: The FWS's Division of Refuges is responsible for managing lands of the National Wildlife Refuge system, including easements, along the proposed route in North and South Dakota. Easements are protected under the National Wildlife Refuge Systems Administration Act (16 U.S.C. 668dd(c)).	Land ownership is further discussed in more depth in Section 3.9, Land Use. Section 3.9 does not include a table with ownership of all public lands along the project route. This information is not currently available. Keystone has confirmed that 3.6 miles of state owned land is crossed in Oklahoma. This is discussed in Section 3.9.4.1.
558	Willie R. Taylor USFWS	88	10/11/2007	letter	EDT	Section 1 lists the authorities that each agency is commenting under. The list of FWS authorities listed in the DEIS should include the Migratory Bird Treaty Act (MBTA) in the FEIS.	Comment accepted. Section 1.3.2.5 has been revised as suggested.
559	Willie R. Taylor USFWS	88	10/11/2007	letter	PER	Page 1-17, Section 1.6, Permits, Approvals, and Regulatory Requirements-Table 1.6-1: Although Page 1-14, 1st paragraph states that Table 1.6-1 lists the permits, licenses, approvals, consultation requirements for federal agencies that are not cooperating agencies and for State and local agencies, it would be less confusing to have a table that lists all the federal, State, and local agencies, their authorities, and permits, licenses, approvals, and consultation requirements all in one table.	Comment acknowledged. The permits, licenses, approvals, and consultation requirements for federal cooperating agencies are described in detail in Sections 1.3.2. which precedes Table 1.6-1.
560	Willie R. Taylor USFWS	88	10/11/2007	letter	ELE	Page 2-14, Section 2.1.2.2, Aboveground Facilities: recommend the FEIS identify the time-frame for determining when new substations will or will not be needed.	The EIS identifies the new substations in Table 2.2-3 - eight currently identified. The need for additional substations, if any, would be decided prior to operation of the pipeline system.
561	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Page 2-14, Section 2.1.2.3, Ancillary Facilities: The DEIS states, "Specific locations of these workspaces would be modified…" Please clarify in the FEIS whether this means preliminary locations have been selected. If known, identify where the proposed routes of the lateral pipelines, additional temporary workspace areas, pipe storage, contractor yards, and access roads will be located.	The FEIS provides the updated locations of ancillary pipelines work areas and facilities.
562	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Page 2-14, Section 2.1.2.3, Ancillary Facilities: The DEIS states, "The temporary roads and upgrades to existing roads would disturb approximately 90.5 acres along the entire Mainline Project ROW." Please note in the FEIS whether this includes the Cushing Extension. If so please identify the acreage of access roads in the states within the Cushing Extension project area	Section 2.1.2.3 has been updated to include the Cushing Extension.
563	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Page 2-14, Section 2.1.2.3, Ancillary Facilities: How many short permanent access roads would be constructed per State along the Keystone and Cushing Extension, and what would be the total acreage and miles?	Section 2.1.2.3 has been updated using information provided by Keystone prior to the time of FEIS publication.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
564	Willie R. Taylor USFWS	88	10/11/2007	letter	MIT	Page 2-20, Section 2.2, Construction Procedures: The DEIS states, "Mitigation and other measures identified would constitute the basic construction design applicability to all land disturbed by the Keystone Project. This approach would enable construction to proceed with a single set of specifications, irrespective of the ownership of the land being crossed. On private land, this basic design may be modified to accommodate specific landowner requests and preferences." The last sentence contradicts the rest of the paragraph. In addition, Keystone's Construction Mitigation and Reclamation Plan do not make this clear. The FWS prefers and strongly recommends that restoration activities utilize native species. However, we also want the FEIS to realistically analyze the use of natives versus non-natives during restoration.	Added statement clarifying that landowners may request restoration with non-native species and added recommendation that Keystone recommend to landowners restoration using native vegetation in Section 3.5. Edited statements in Section 2.2 to remove conflict.
565	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page ES-29, Section ES.6.15.3, Cumulative Impacts-Wetlands: The DEIS states, "None of the wetlands crossed by the Keystone Project would be permanently filled or drained. Therefore, the contribution of the Keystone Project on cumulative effect to wetlands would be minor." The FWS doesn't agree with that assessment, especially since impacts to forest and scrub-shrub wetlands are anticipated. Temporal and long-term impact to these wetlands would be significant and should be mitigated at a rate of at least 3:1 up to 10:1, depending on the quality. Best management practices should be used in all wetland areas to minimize impacts	Comment accepted; revised Section 6.15 page ES-29 to correct statements.
566	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Page 2-21, Section 2.2.1.3, Trenching: Please identify in the FEIS the proposed length intervals between hard and soft plugs designed to allow animal crossings.	Hard and soft plugs will be installed in consultation with the landowner.
567	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Page 2-22, Section 2.2.1.5, Installing and Backfilling: Please identify in the FEIS where extracted water from trench dewatering would be disposed.	Water would be pumped to an adjacent upland area.
568	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page 2-23, Section 2.2.1.8, Cleanup and Restoration: This section has contradictory statements in regard to the use of native species for restoration and specification of landowners. The FWS recommends the FEIS clearly encourage the use of native species during restoration but recognizes landowners have the final decision with the exception of federally and state recognized invasive species.	Addressed in Section 3.4, 3.5 and 3.6 added recommendation that Keystone encourage landowners to allow Keystone to use native vegetation for restoration. Revised statement in Section 2.2.1.8 to "To stabilize soils, reduce erosion, and reestablish vegetation cover, disturbed work areas in non-cultivated fields would be seeded as soon as practicable, and would be subject to the prescribed dates and seed mixes specified by the landowners or regulatory agencies.
569	Willie R. Taylor USFWS	88	10/11/2007	letter	MOR	Page 2-23, Section 2.2.1.8, Cleanup and Restoration: Please identify in the FEIS the time-frame required to complete a specific length of pipeline (i.e. 1,500 feet or 1 mile) from clearing and grading to cleanup and restoration.	At any given location construction would be completed in 8-12weeks
570	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 2-24, Section 2.2.2.3, Water Body Crossings: The FWS strongly discourages the construction of temporary bridges across rivers that are to be directionally drilled. This would negate the effort of directional drilling, which is basically to eliminate impacts to the river system.	Any temporary bridges would need USACE Approval. It is Keystone's intent to limit the use of temporary bridges but it may not be possible to eliminate them entirely.
571	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 2-24, Section 2.2.2.3, Water Body Crossings: Please identify in the FEIS the maximum width of streams where the open-cut trench method will be implemented.	In general, the Dry stream crossing methods (dam & pump and flume crossing methods) are not feasible on streams greater than about 30 feet wide, due to the limitations on the volume of water that can effectively be transferred around the work area through flumes or by pumps, as well as a limitation on distance trenching equipment can reach under flume pipes for excavating/backfilling the trench. For this reason, the open cut trenching method is identified for all of the larger streams that are not HDD. Keystone is preparing site-specific plans detailing the open cut crossing methods for the larger waterbodies being crossed, in order to ensure the crossing is completed as quickly as possible to limit construction disturbances.
572	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 2-25, Section 2.2.2.3, Water Body Crossings: The DEIS states that the setup for Horizontal Directional Drilling (HDD) would require clearing and disruption of several acres on the entrance and exit side of the boring. The ROW between the boring point of entry and exit would not be cleared or graded. The FWS recommends providing an acreage estimate for work areas utilized during HDD and the minimum buffer distance between the rivers edge and the work area.	Workspaces for the HDDs are included in the overall project workspace disturbance acreages provided in the recent project filings. Additional text has been added to section 2.0 to describe the methods for clearing in HDD work areas.
573	Willie R. Taylor USFWS	88	10/11/2007	letter	ERO	Page 2-26, Section 2.2.2.3, Water Body Crossings: The FWS discourages the use of rock riprap or gabion baskets as erosion control measures.	Any erosion control measures in streams would need USACE Approval. It is Keystone's intent to limit the use of gabions and rock rip rap but it may not be possible to eliminate them entirely.
574	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page 2-26, Section 2.2.2.3, Water Body Crossings: The DEIS states, "Other stream banks would be seeded with native grasses and mulched…." Please clarify in the FEIS whether this means all other stream or river banks not receiving structural erosion control would receive native vegetation replanting. Again we also recommend that private landowners be encouraged to plant native vegetation while recognizing they make the final decision with the exception of federally and state recognized invasive species.	Addressed in Section 3.4, 3.5 and 3.6 added recommendation that Keystone encourage landowners to allow Keystone to use native vegetation for restoration. Revised Section 2.2.2.3 to address comment.
575	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 2-26, Section 2.2.2.4, Wetland Crossing: Please provide an estimate in the FEIS of the total number of wetlands crossed by the Mainline and Cushing Extension, and the total number within each State. This estimate would provide the information required to adequately analyze the impacts of the proposed pipeline project on wetlands.	The number of wetlands crossed in each state by the Mainline and Cushing Extension were added to Table 3.3.3-1, 3.4.3-2 and 3.4.3-3. No change to Section 2, data belong in Section 3.4.
576	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 2-26, Section 2.2.2.4, Wetland Crossing: The FWS recommends a minimum 50 foot buffer to protect wetlands, instead of a 10 foot buffer. A 50 foot buffer would be consistent with the "Wetland and Waterbody Construction and Mitigation Procedures" utilized by FERC for construction of natural gas pipelines.	Buffers will be required on both sides of the ROW where it crosses wetlands. Minimum buffer widths will be determined in the USACE permit process and may extend from a minimum of 10 ft up to 50 ft. Revised Section 2.2.2.4 to 50 foot buffer recommendation.
577	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page 2-26, Section 2.2.2.4, Wetland Crossing: Again, the FWS recommends that Keystone replant all disturbed areas with native vegetation and work with private landowners to achieve this goal.	Revised Section 2.2.2.4 as suggested.
578	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page 2-30, Section 2.2.2.8, Forestlands: We strongly encourage Keystone to recommend that private landowners replant the temporary ROW with native woody species and the permanent ROW with native herbaceous species.	Revised Section 2.2.2.8 as suggested.
579	Willie R. Taylor USFWS	88	10/11/2007	letter	SOI	Page 3.2-8, Section 3.2.2.1, Potential Impacts and Mitigation-Construction Impacts: We recommend the Wet Weather Construction Plan (WWCP) address construction practices in all habitat types, not just agricultural areas.	Comment acknowledged. Section 2.18 of Keystone's Construction Mitigation & Reclamation Plan (CMR Plan) addresses the methodology to be utilized to determine when to restrict or stop work for wet weather and methods to mitigate impacts of construction activities in wet conditions. Section 2.18 takes into account the depth of rutting by reference to whether rutting may cause mixing of topsoil and subsoil, on a location-specific basis. Stop work authority will be designated to the Chief Inspector but will be implemented when recommended by the Environmental Inspector. Section 2.18 of the CMR Plan also addresses construction procedures and mitigative measures to minimize compaction in wet conditions. These methods will be applied to all agricultural and non-agricultural areas.
580	Willie R. Taylor USFWS	88	10/11/2007	letter	SOI	Page 3.2-9, Section 3.2.2.1, Potential Impacts and Mitigation-Construction Impacts: The DEIS states, "…the impact should be mitigated in accordance with the recommended Agricultural Impact Evaluation and Compensation Plan. It is also possible that Keystone may discover previously contaminated soils during construction. … (See Keystone's Mitigation Plan, Appendix B)." The current status of Appendix C, the Draft Emergency Response Plan, is not sufficient for the FWS to provide specific comments. In addition, mitigation for irreparable damage to soil productivity is addressed only in the proposed Agricultural Mitigation Plan. Since this document is not yet available the FWS cannot assess the adequacy of soil mitigation.	Comment acknowledged. The Agricultural Mitigation Plan is only a requirement in Illinois. In all states, required mitigation for agricultural impacts during construction is included within individual landowner easement agreements.
581	Willie R. Taylor USFWS	88	10/11/2007	letter	SOI	Page 3.2-10, Section 3.2.2.2, Potential Impacts and Mitigation-Operation Impacts: The DEIS states, "…amend Mitigation Plan to include Post-Construction Soil Monitoring Plan…" The FWS recommends adding provisions for implementing appropriate remediation for various soil maintenance issues.	Comment acknowledged. The CMR states that "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices." Provisions for soil remediation would be addressed with applicable agencies as part of the permitting process, or with individual landowners as part of easement agreements.
582	Willie R. Taylor USFWS	88	10/11/2007	letter	SOI	Page 3.2-10, Section 3.2.2.2, Potential Impacts and Mitigation-Operation Impacts: Please define in the FEIS the meaning of "near-surface", "negligible", and "minimal effects" in regards to soil temperatures and effects on the environment. We recommend inclusion of actual effects of the soil temperature change on the micro- and macro habitat, species composition, soil moisture, nutrients, and other parameters. Please include citations referencing published literature related to this topic.	The effect of elevated soil temperatures on productivity adjacent to the pipeline cannot be known with any certainty, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.

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583	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-9, Section 3.3.1.1, Water Resources-Groundwater: The DEIS identifies that the Cushing Extension route in Nebraska and Oklahoma does not contain water-bearing zones less than 50 feet below ground surface. We recommend providing a citation for this statement.	The information was obtained from DR#1 - Water Resources: Item 1 (prepared by Scott Ellis). The data was presented in a table by milepost. There were no shallow aquifers included for mileposts contained in NE and OK, so the statement was made using this data table. References used to create this table will be provided in the FEIS when they are received from keystone.
584	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-13, Section 3.3.1.1, Water Resources-Groundwater: Please define the term "principal regional aquifers" in the FEIS.	These aquifers should be identified as "principal aquifers". The text in the DEIS is changed accordingly. As defined by USGS, a principal aquifer is a regionally extensive aquifer system that has the potential to be used as a source of potable water
585	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-13, Section 3.3.1.1, Water Resources-Groundwater: Please provide the depths of the Public Water Supply (PWS) wells in the FEIS	The information is not available at this time
586	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-13, Section 3.3.1.1, Water Resources-Groundwater: Please identify in the FEIS whether the private well data would be collected prior to the finalization of the EIS. If the data will be collected prior to the release of the FEIS, please address how the public will be able to comment.	An inventory all of the private wells in the vicinity of the project is outside of the scope of this EIS. Issues related to private wells would be discussed between Keystone and the landowners during negotiations. Landowners will be able to comment directly and work out potential compensation details to ensure that any damage to wells will be fixed by Keystone if it occurs.
587	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-14, Section 3.3.1.2, Water Resources-Surface Water: The DEIS states, "Surface water resources that would be crossed by the proposed pipeline are located within three water resource regions…" Please define in the FEIS "water resource region", better define their boundaries, and identify whether they are analogous to watersheds. Also we recommend including the water resource region in which the Oklahoma portion of the Cushing Pipeline is located.	The statement was taken from the ER - page 3.5-1. The statement from the ER cited Seaber et al, 1994. The full citation for Seber is: Seaber, P. R., F. P. Kapinos, and G. L. Knapp. 1994. Hydrologic Unit Maps. U.S. Geological Survey Water-Supply Paper 2294. Second printing, U.S. Government Printing Office, Washington, D.C. this will be added to the references for the section and the actual document will be added to the admin. record.
588	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-24, Section 3.3.2.1, Water Resources-Surface Water: The DEIS states, "Shallow groundwater aquifers generally recharge quickly because they have high hydraulic conductivities…." We recommend providing a citation(s) for this statement in the FEIS.	Comment acknowledged; the words "high hydraulic conductivities" have been deleted from the text. The main point is that shallow groundwater aquifers are receptive to recharge from precipitation and surface water flow.
589	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	The DEIS states on page 3.7-8 that the open-cut wet method is Keystone's preferred crossing method and is also the most invasive. Important riparian forested and emergent wetlands occur on the Grand River floodplain at the proposed crossing. On page 3.4-13, Keystone has committed to directionally drill large river crossings to minimize effects on streamside wetlands or floodplain. Therefore, we recommend that the HDD method be used at the Grand River. Avoid instream activities during the sensitive breeding periods for fish (Generally, April 1 through June 30).	The Grand River crossing is collocated with the REX pipeline crossing which was open cut. The proposed Keystone crossing falls within areas just disturbed by REX.
590	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.3-26/27, Section 3.3.2.2, Stream Crossings and In-stream Construction Activities: As a condition of the Permit, the FWS recommends that Keystone use the northern alternative at milepost 1020.6 in the confluence area and follow their recommendations on pages 3.8-24-25 to avoid impacts to the active bald eagle nest.	Revised Section 3.8.1.6 to include recommendation for routing ROW to avoid the bald eagle nest at the described location on page 3.8-25.
591	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-26/27, Section 3.3.2.2, Stream Crossings and In-stream Construction Activities: The DEIS identifies (at the bottom of page 3.3-26) that the Salt Fork Arkansas and the Cimarron Rivers would be crossed via HDD. However, the following paragraph (top of page 3.3-27 in bold print) states that to minimize impacts of crossings at larger water bodies where the HDD method is NOT proposed then a site-specific Construction Mitigation and Restoration Plan will be submitted by Keystone. Included in this list of water bodies to be crossed where the HDD method is NOT to be implemented is the Salt Fork Arkansas and the Cimarron Rivers. The FWS finds these two statements conflict with each other. We recommend these rivers be crossed via HDD	In the DEIS text, Salt Fork River is HDD.
592	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-26/27, Section 3.3.2.2, Stream Crossings and In-stream Construction Activities: The DEIS identifies that vegetation adjacent to water bodies that would be crossed by HDD would not be disturbed, except by hand clearing as necessary for drilling operations. To better evaluate the impacts of this technique on fish and wildlife resources the FWS requests the FEIS identify: 1) what this means in terms of actual on the ground disturbance; 2) whether the vegetation would be cleared up to the rivers edge; 3) how wide of an area will be cleared; 4) why this area would be cleared; and 5) what will occur in this cleared area.	Workspaces for the HDDs are included in the overall project workspace disturbance acreages provided in the recent project filings. Additional text has been added to section 2.2.2.3 to describe the methods for clearing in HDD work areas.
593	Willie R. Taylor USFWS	88	10/11/2007	letter	ERO	Page 3.3-26/27, Section 3.3.2.2, Stream Crossings and In-stream Construction Activities: The DEIS states, "Erosion control measures can themselves cause adverse environmental impacts." The FWS recommends that this statement be clarified in the FEIS to address how and what kind of erosion control measures can cause adverse environmental impacts.	Comment acknowledged. Rip-rap, for instance, is known to have adverse environmental effects in many applications, but is appropriate in some circumstances. The FEIS will address Keystone's plan to have stream crossings designed by qualified professionals. Actual stream crossing and erosion control measures would be approved and permitted by the USACE prior to construction.
594	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-27, Section 3.3.2.2, Stream Crossings and In-stream Construction Activities: The DEIS states, "Keystone's Mitigation Plan describes the use of buffer strips, drainage diversion structures…" The FWS is unable to locate any reference to "buffers" in the Mitigation Plan. We recommend that Keystone coordinate with each FWS ES field office and State Fish and Wildlife agency for recommended buffers and other Best Management Practices (BMPs), which will be based on the type of fish and wildlife resources that occur at the specific site and the type of protection needed. These measures should be included in the Mitigation Plan.	Buffers will be required on both sides of the ROW where it crosses streams. Minimum buffer widths will be determined in the USACE permit process and may extend from a minimum of 10 ft up to 50 ft. Revised Section 2.2.2.4 to 50 foot buffer recommendation.
595	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-27, Section 3.3.2.2, Stream Crossings and In-stream Construction Activities: A 10-foot buffer from the water's edge for work areas is not protective enough to avoid impacting waters and wetlands. The FWS recommends a minimum of 50 feet, but the project proponent should coordinate with each FWS ES field office to identify important waters and wetlands to fish and wildlife resources and to provide appropriate buffer guidelines.	Buffers will be required on both sides of the ROW where it crosses streams. Minimum buffer widths will be determined in the USACE permit process and may extend from a minimum of 10 ft up to 50 ft. Revised Section 2.2.2.4 to 50 foot buffer recommendation.
596	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.3-28, Section 3.3.2.2, Blasting: The FWS recommends blasting be avoided in areas with federally-listed species or their critical habitat. If blasting cannot be avoided in these areas then additional section 7 consultation per ESA with the FWS will be required prior to any irretrievable commitment of resources in these areas and total area to be impacted should be identified as well.	Coincidence of blasting locations and TES was presented in Section 3.8 and is part of the ongoing consultation under ESA between Keystone and the USFWS.
597	Willie R. Taylor USFWS	88	10/11/2007	letter	WAT	Page 3.3-29, Section 3.3.2.2, Operational Impacts: We recommend cover depth of 10 feet to prevent washing out and further stream disturbance in the form of channel incision, bank destabilization, and reburial of pipe at a later date.	Text to be revised as follows (see comment at end): As stated in Section 3.3.2.2, all water body crossings will be assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration. The level of assessment for each crossing will vary based on the professional judgment of the qualified design personnel. The pipeline will be installed as determined to be necessary to address any hazards identified by the assessment. The pipeline will be installed at the design crossing depth for at least 15 feet beyond the design lateral migration zone as determined by qualified personnel. The design of the crossings will also include the specification of appropriate stabilization and restoration measures.
598	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 3.4-3, Section 3.4.2, Wetlands of Special Concern or Value: We recommend the FEIS address wetlands protected by the FWS easement under 16 U.S.C. 668dd(c). We recommend the following language: The FWS will pursue any pipeline project activity that results in easement wetlands being filled or drained as an easement violation under 16 U.S.C. 668dd(c). The FWS' procedure with any cooperating entity such as Keystone is to restore the ponding capability of the wetland(s). If fill material remains in any easement wetland(s) after the pipeline is installed, the FWS will work with project personnel to remove the fill material from the basin. If a wetland(s) no longer ponds water after the pipeline is installed the FWS will work with project personnel to improve soil compaction and water retention capability in that wetland(s). If measures taken to restore the ponding capability of a wetland(s) are unsuccessful, the FWS will require Keystone to locate a similar wetland and execute an exchange for a replacement wetland(s) according to FWS guidance.	Comment accepted, suggested language added to Section 3.4.2.
599	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 3.4-3, Section 3.4.3, Potential Impacts and Mitigation: In general, non-jurisdictional wetland impacts under section 404 of the Clean Water Act would not require mitigation. However, under NEPA, the DOS must evaluate the adverse impacts to both jurisdictional and non-jurisdictional wetlands. DOS can require mitigation for both jurisdictional and non-jurisdictional wetlands. The FWS recommends that all wetland impacts be mitigated. Also, the form and timing of mitigation should be specified. Monitoring should also be specified to document mitigation success, not only for noxious and invasive species, but for overall mitigation site success, with provisions for corrective measures where needed. Mitigation for wetland impacts should be a condition of the Presidential Permit and coordination and concurrence should be with each of the FWS ES field offices in the State where the impacts occur.	Impacts to jurisdictional and non-jurisdictional wetlands are considered in Section 3.4. DOS has no authority to require mitigation of non-jurisdictional wetlands

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
600	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Pages 3.4-8 and 9, Table 3.4.3-4, Wetlands of Special Interest or Conservation Concern for the Keystone Pipeline: There are two references to FWS Conservation or Federal Highway Administration (FHWA) Easements (Mileposts 183.2-183.4 in North Dakota and 310.5-311.0 in South Dakota). These are not FHWA easements; they are Farmers Home Administration (FmHA) conservation easement tracts administered by the Service. We recommend that all wetland impacts be mitigated, especially those indicated as wetlands of special interest of conservation concern in Table 3.4.3-4.	Due to a reroute the pipeline now crosses different easements reported as USFWS wetland easements; Corrected Table 3.4.3-4 with corrected data provided in Keystone's filing #9. USFWS in easement negotiations can require that all impacts be mitigated. For jurisdictional wetlands mitigation will be identified in the USACE permit. For non-jurisdictional, non easement wetlands, DOS does not have authority to require mitigation.
601	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	There are also references in the table to Conservation Reserve Wetlands with ownership listed as privately owned North Dakota Game and Fish easement. If these are Conservation Reserve Program (CRP) lands, the easements are with the Natural Resources Conservation Service (NRCS) not with the North Dakota Game and Fish Department.	Corrected Table 3.4.3-4 added footnote guiding reader to Section 3.9 for discussion of CRP lands.
602	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Further, the Table identifies that Mileposts 219.3-219.8 and 222.3-222.8 are listed as crossing FWS grassland easements. According to most recent route maps from Keystone dated April 2007 the route crosses FWS wetland easements at these two locations. Table 3.9.3-8 also lists these two sites as wetland easements. The names and ownerships in the table need to be checked to make sure the information is correct.	Tables with wetland and grassland information were revised based upon data submitted by Keystone in Filing #9. All USFWS easements crossed were identified as wetland easements.
603	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 3.4-13 and Page 3.4-14, Section 3.4.3, Potential Impacts and Mitigation: We recommend the addition of a bullet in the FEIS on both pages and in Keystone's Mitigation Plan in Appendix B that states that excavated spoil material will be stockpiled outside of the wetland basin	Material will only be placed next to the trench until it can be returned as the pipeline is covered. No long-term stockpiling will occur in wetland areas. Procedures in wetlands would be subject to USACE permitting requirements. USACE solicits comments from USFWS during that time. No change to Appendix B.
604	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 3.4-13, Section 3.4.3, Potential Impacts and Mitigation: We recommend the FEIS address the affect of the increase in water temperatures where the pipeline crosses through wetlands. If water temperature is 1 to 2 degrees F warmer this may result in wetlands that will freeze a day or two later than neighboring wetlands. We recommend the FEIS discuss this aspect of the warming in addition to soil impacts.	Added bullet to page 3.4-12 and discussion to page 3.4-13.
605	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 3.4-14, Section 3.4.3, Potential Impacts and Mitigation: We recommend the FEIS address measures that would be taken by Keystone to limit sediment from excavated soil being carried into dry easement wetlands. Easement wetlands are not less subject to sedimentation due to the fact that they may be dry at the time of construction. There aren't any planned measures to reduce sedimentation in dry easement wetlands as stated in the DEIS: "Sediment barriers would not be required across or along edges of the construction ROW." Regardless of the cultivation status of dry wetlands, the FEIS should state allowance for topsoil and subsoil to be segregated in dry wetlands as specified for adjacent uplands. This method of handling soil is not clear in the following statement: "If cultivated, topsoil would be stripped using trench and spoil side method at the same depth as the adjacent upland areas…." Section 6.5, "Dry" Wetland Crossing Method in the Appendix B Construction, Mitigation and Reclamation Plan does state that topsoil shall be segregated and does not stipulate that cultivation is a determining factor for this practice.	These measures originated from Keystone's construction and Mitigation Plan, Appendix B provided by Keystone. Revised "If cultivated topsoil would be stripped and segregated using trench and spoil side method at the same depth as adjacent upland areas" to "Topsoil would be stripped and segregated using trench and spoil side method at the same depth as adjacent upland areas" to more accurately reflect Keystone's intention of following the measures outlined for all wetlands on page 3.4-13. Removed measure "sediment barriers would not be required across or along the edges of the construction ROW". The use of sediment barriers in jurisdictional wetlands will be negotiated as part of the permitting process.
606	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 3.4-15, Section 3.4.3, Potential Impacts and Mitigation: We recommend the FEIS describe specifically what measures would be taken by TransCanada to prevent fill being deposited in easement wetlands and what measures will be taken by TransCanada to rectify these impacts should they occur. We recommend also the FEIS address how TransCanada will comply with the terms of the easement which specify that fill cannot be deposited in easement wetlands. These impacts could be limited by adopting the following recommendations as requirements. We recommend that the following statement be made a part of the mitigation plan and should be reworded to read: "In addition to the mitigation measures committed to by Keystone in the Mitigation Plan, wetland areas within conservation lands or easements will be restored to a level consistent with any additional criteria established by the relevant managing agency."	Revised sentence on page 3.4-15 identified by USFWS to say "would" instead of "should" as Keystone has indicated that all criteria set by managing agencies would be followed.
607	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	We recommend also that the recommended measures beginning on page 3.4-15 be required.	Added request for requirement of measures to page 3.4-16 after listing of additional measures.
608	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Within this section (3.4.3) of measures currently recommended in the DEIS, we recommend that under the 3rd bullet the first sub-bullet be changed to read: "In shallow farmed easement wetlands, FWS recommends that a gap be left in the spoil so that no fill material is left in the wetlands the spoil be piled outside the wetland basin so there is a gap in the fill and no material is piled in the wetlands" or; "FWS requires that Keystone restore all easement wetlands where spoil must be piled, including dry farmed wetlands, to plus or minus 1 inch to reduce the possibility of filling shallow wetlands."	Revised sub-bullets on page 3.4-15 as suggested. Final mitigation measures in easement wetlands will be negotiated between Keystone and USFWS.
609	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-1, Section 3.6, Wildlife: Please see General Comment #5 which recommends providing data from biological surveys to FWS ES field offices. The FWS also recommends that construction maps identify sensitive habitats as well as fish and wildlife species information, especially seasonal restrictions and special construction restrictions so that contractors will be informed and take the necessary precautions to protect these natural resources.	Added recommendations to Section 3.6.5 page 3.6-15. "Keystone will provide construction maps that identify seasonal restrictions and special construction restrictions to contractors, so that contractors will be informed and take the necessary precautions to protect natural resources during construction."
610	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-1, Section 3.6, Wildlife: The introduction refers to snakes, lizards, turtles, and various amphibians, and short-, mixed- and tall grass prairies, forests, woodlands, wetlands, riparian areas, and shrublands. However, the description and potential impacts and mitigation do not address all of these topics. We recommend a more comprehensive description and impact and mitigation of the wildlife and habitat sections in the FEIS. Further, the description organization and the impact and mitigation organization should be consistent.	Revised section organization to address comment.
611	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-11, Section 3.6.4, Raptors and Other Migratory Birds: The FWS recommends including indirect mortality from stress, avoidance of feeding, and similar effects due to construction and operation activities as potential impacts to wildlife.	Added bullet "indirect mortality due to stress or avoidance of feeding from exposure to construction and operations noise, and from increased human activity" to Section 3.6.5.
612	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-11, Section 3.6.4, Raptors and Other Migratory Birds: While a hunting season is set for ducks, geese, sandhill crane, and mourning doves, they are not small game animals. These species are migratory birds protected under the MBTA. We recommend separating small game mammals, game birds, and migratory birds with hunting seasons into different sections in the FEIS.	Separated discussions of waterfowl and game birds from other migratory birds as suggested in Section 3.6.3 and 3.6.4.
613	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page 3.6-13, Section 3.6.5, Potential Impacts and Mitigation: We recommend that the FEIS address the acreage of wooded habitat that will be converted to herbaceous communities as a result of the pipeline by State, State important areas, and pipeline extensions.	The area of wooded habitats converted to herbaceous cover are listed as operational impacts in Section 3.5, Table 3.5.5-1. 3.5.5-2, and 3.5.5-3 by state and by pipeline extensions. Added sentence describing total wooded acreages converted to herbaceous cover to discussion of habitat losses. This information was not available broken down by important wildlife habitats.
614	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-13, Section 3.6.5, Potential Impacts and Mitigation: The DEIS states, "… these long-term habitat losses represent a small total area of available habitat and therefore are expected to have little impact on wildlife species." We recommend defining "small total area" and "available habitat" as these terminologies appear subjective. Scale of impacts can vary widely depending on the type of ecosystem, species, habitat edge, and numerous other variables. Further, a linear shaped project does not necessarily lessen the impacts to wildlife and their habitats. We recommend providing published literature reporting on the effects to wildlife and their habitat from similar linear type projects.	Revised Table 3.6.5-2 to include area of "available habitat" as total area by vegetation community classification within 5 miles of the pipeline ROW and including the proportion of habitat impacted to "available habitat". Discussion of linear aspect and habitat fragmentation added to Section 3.6.5 with respect to large areas of continuous habitat cover.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
615	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-14, Table 3.6.5-2, Potential Impacts and Mitigation: Please clarify whether this table includes the Cushing Extension. The total acreage does not agree with the previous acreages stated in the EIS for the Mainline (17,705 acres) or both the Mainline and Cushing Extension (21,898 acres).	Added clarification to Table title, and reviewed and revised numbers. Table does not include impacts to developed lands which are not considered wildlife habitat.
616	Willie R. Taylor USFWS	88	10/11/2007	letter	VEG	Page 3.6-15, Section 3.6.5, Potential Impacts and Mitigation: The DEIS states, "…qualified biologist to conduct a survey of sensitive species associated with native tall grass prairie." The FWS recommends all habitats in addition to native tall grass prairie be surveyed.	Section 3.6.5 includes Keystone's mitigation measure to survey breeding bird habitat within 330 feet of proposed surface disturbance activities that would occur during the breeding season. Surveys of all areas of wetlands, grasslands and habitats potentially occupied or suitable for TES species were surveyed as requested by state and federal regulatory agencies (see Section 3.4, 3.5, and 3.8)
617	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-15, Section 3.6.5, Potential Impacts and Mitigation: The DEIS identifies that 161 miles of new power lines would be strung across the states of North and South Dakota, Nebraska, Kansas, Missouri, and Illinois, and Oklahoma for both the Keystone and Cushing extension. No information is provided regarding the number of miles of existing power lines that would be used. This information should be provided to fully ascertain the cumulative impacts of the project on wildlife.	Total miles of electrical powerlines both new and converted necessary to support pump stations was included in this discussion on page 3.6-15.
618	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 3.6-16, Section 3.6.5, Potential Impacts and Mitigation: The DEIS identifies that Keystone has agreed to implement certain measures to prevent avian electrocution or collision with power lines. However, the DEIS does not evaluate the impacts of new transmission lines and the displacement of wildlife from areas where these new lines will be located. We define displacement as rendering a once suitable area to meet all or part of species life requirements no longer able to provide those life requisites. As the DEIS states, there are approximately 161 miles of new transmission lines that will be installed with the Keystone/Cushing Extension pipeline project. Many studies have shown that a whole suite of grassland nesting birds are negatively affected by vertical obstructions during at least a part of their life cycle on the breeding grounds. Birds either avoid these obstructions or are subject to either increased mortality through predation or decreased natality through nest parasitism (Minnesota Department of Natural Resources 2000).	Revised Section 3.6-5 to discuss habitats crossed by the power lines and potential predation and resulting reduced habitat suitability for grassland nesting birds.
619	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Further, the DEIS does not assess the impacts of new access roads on the displacement of wildlife. In order to fully evaluate the impact of the proposed project, the DOS must include the displacement of wildlife and habitat loss that will occur through not only the impact of the pipeline footprint, but all infrastructure faculties associated with the project. Further, for unavoidable impacts, the FWS strongly recommends that these habitat impacts be mitigated. After unavoidable impacts to all aspects of the project are ascertained, including power lines and access roads, the FWS recommends that DOS include those assessments in the FEIS and also condition the Presidential Permit to require the mitigation of such impacts. Recommended mitigation measures will need to be coordinated with each State FWS ES field office and State fish and wildlife agency to determine appropriate mitigation.	Most of the pipeline ROW will be accessed from existing roadways and Keystone does not intend to build any permanent access roads for pipeline construction. Footprints of these temporary access roads were included in total habitat disturbance. A few permanent access roads to pump stations would be limited to a few acres and are also included in the total habitat impact as operational impacts in Table 3.5.5-1, 3.3.5-2, and 3.5.5-3. Added recommendation that mitigation measures would need to be coordinated with each state FWS ES office and state fish and wildlife agency in Section 3.4 and 3.6.
620	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-1, Section 3.8, Threatened and Endangered Species The FWS received a draft biological assessment (BA) on August 7, 2007, and a revised BA on September 7, 2007. The FWS is currently reviewing the September, 2007 BA and will provide comments under separate letter. The FWS will continue to consult with DOS and Keystone relating to the project effect on federally listed species and designated critical habitat. The FWS recommends that DOS and Keystone continue coordination with federal and State resource agencies with the goal of impact avoidance, minimization, or mitigation to federal and State fish and wildlife resources.	USFWS comments on the draft Biological Assessment for the Keystone Project were received on November 5, 2007. These comments were reviewed for any applicable changes to the DEIS for Section 3.8.
621	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-2, Section 3.8.1.1, Federally Protected Birds, Bald Eagle: The bald eagle is no longer on the list of threatened and endangered species under ESA. However, they are still protected under the BGEPA. The BGEPA not only protects eagles, their young, eggs, and active nests, as the MBTA does, it also protects eagles from harm and harassment. Specifically take is defined as: pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. Consequently, bald and golden eagles are afforded more protection than birds protected solely under the MBTA.	Section 3.8.1.1 was revised to describe the de-listed status of the bald eagle. A description of the enhanced protection of the BGEPA over the MBTA was also added. However, discussion of Bald Eagles remains in section 3.8.
622	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-3, Table 3.8.1-1, Federally Protected Birds: The greater prairie chicken is neither a federally listed species nor an Oklahoma state listed species; however, we encourage the protection of these species as it has undergone significant decline and habitat loss. This species should be included in surveys conducted for sensitive wildlife species and appropriate protective measures implemented if located in Oklahoma. In addition, the sharp-tailed grouse, which resides in the Dakotas and Nebraska, is particularly vulnerable to displacement by roads and power lines. These species range over wide expanses of native grasslands and habitat fragmentation reduces their habitat. The FWS strongly recommends that DOS include the impacts of permanent wildlife displacement in its evaluation and require that the project proponent avoid placement of roads, power lines, and other project infrastructure in areas of grasslands that are void of human disturbance. Where this will not be possible, the FWS recommends that DOS condition the Presidential Permit to include the requirement for compensation of lost habitats.	Added description of native grassland loss and fragmentation and associated declines in the greater prairie chicken and sharp-tailed grouse to Section 3.6 because these birds are not currently protected by the Federal ESA and are also not protected under the MBTA because they are non-migratory. Keystone has already committed to avoidance and restoration of native prairie habitats and surveys of sensitive species in these habitats. Keystone has also committed to conducting breeding bird surveys within 330 feet of the proposed surface disturbance activities that would occur during the breeding season. We suggest that these commitments and protections as described in Section 3.6.3 would be applicable and would address USFWS concerns for the greater prairie chicken and the sharp-tailed grouse.
623	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-7, Section 3.8.1.1, Federally Protected Mammals-Indiana Bat: Habitat suitability evaluations were completed in Missouri and Illinois in 2006 and 2007 to identify potentially affected summer Indiana bat summer habitats. Seventy-three woodlots were identified as containing suitable habitat for Indiana bats (Table 3.8.1-9). According to the Draft BA (September, 2007), the number of acres lost due to the project is 280 instead of 273 (top of page 3.8-34). We recommend that the five recommendations on page 3.8-33 be included with the other measures on page 3.8-29 for which Keystone has committed to implement and make conditions of the Presidential Permit.	Revised 273 acres to 280 acres of potentially suitable habitat impacted on page 3.8-34 and page 3.8-29. Added USFWS's recommendation that the additional five measures on page 3.8-33 become conditions of all federal permits. stipulations.
624	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-7, Section 3.8.1.1, Federally Protected Mammals- Grey Wolf: The FWS announced on February 8, 2007, a final rule to change the endangered status of the gray wolf (Federal Register (72) 26: 6052-6103). The gray wolf, as of March 12, 2007, is delisted in the portion of North Dakota north and east of the Missouri River upstream to Lake Sakakawea and east of the centerline of Highway 83 from Lake Sakakawea to the Canadian border, and remains endangered in western North Dakota.	Revised section 3.8.1.2 and Table 3.8.1-2 to discuss the delisted status of the gray wolf in eastern North Dakota.
625	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-26, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Least Terns and Piping Plovers: Surveys for interior least terns prior to construction should include the Cimarron River in Oklahoma. Least terns have been documented nesting along the stretch of river where Keystone's proposed pipeline will cross. We also recommend that all other mitigation measures identified in the DEIS to protect the tern be implemented in Oklahoma along the Cimarron River.	Keystone agrees to this measure. Measure was added to page 3.8-26 and Cimarron River was added.
626	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-26, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Least Terns and Piping Plovers: The DEIS identifies that no construction would be allowed within 0.25-mile of any known active least tern or piping plover nest. The FWS further recommends that if pipeline crossing construction is initiated prior to the least tern/piping plover nesting season but continues into the nesting season that known areas annually utilized by least terns/piping plovers as nesting grounds be avoided or construction be implemented outside the nesting season.	Keystone agrees to this measure. Measure was added to page 3.8-26.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
627	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-26, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Whooping Crane: The DEIS addresses a critical period for water withdrawal for the Platte River in Nebraska, however, no mention is made as to whether effects of water withdrawal from other water sources have been evaluated. If not, we recommend potential effects be evaluated and that water withdrawal be coordinated with the appropriate State FWS ES field office when federally listed species inhabit or utilize the aquatic system.	Added clarification that Keystone would coordinate water withdrawal with the appropriate USFWS Environmental Services field office when federally listed species inhabit or use the aquatic system.
628	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-28, Section 3.81.6, Potential Impacts and Mitigation for Federally Listed Species-Indiana Bat: The DEIS states, "The Keystone Project would affect a total of 1,078 acres of upland and riparian forests, 147 acres of riverine or open waters, and 698 acres of emergent or scrub-shrub wetlands that could provide habitat for Indiana bats." We believe that this sentence greatly overestimates the amount of potential habitat for Indiana bats affected by the project. This appears to be the total amount of these habitats affected by the entire Keystone Mainline and Cushing Extension projects. Since Indiana bats are only known to occur in the Missouri and Illinois parts of the project area, we believe the potential habitat affected will be much less than projected here.	Revised this sentence to reflect amounts of these habitats affected by pipeline construction in Missouri and Illinois. "The Keystone Project would affect an estimated total of 713 acres of upland and riparian forests, 63 acres of riverine or open water, and 94 acres of emergent or scrub-shrub wetlands that could provide habitat for Indiana bats in Missouri and Illinois."
629	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	In Illinois, the FWS recommended that all forest crossings be assessed for value to Indiana bats. Information provided by the project consultants indicates that there are 120 such crossings, of which 66 (55 percent) were actually assessed. The remaining 45 percent of the sites were not accessible, mostly due to landowners denial. The last paragraph of the Indiana bat section (page 3.8-34) states that "a total of 273 acres of forested habitats suitable for Indiana bats would be lost due to construction of the Keystone Project." This is misleading. A total of 273 acres of "surveyed" forested habitats suitable for Indiana bats will be lost. The amount of not yet surveyed habitat needs to also be considered. Further, the FWS recommends that tree clearing be prohibited from April 1 to Sept 30. This does not mean that adverse effects are still not likely to occur, but at a minimum, direct take is not likely. The FWS will address this issue further through section 7 consultation of ESA.	This analysis was revised to estimate the number of acres of suitable habitat that would be expected within the unsurveyed habitats based on the proportion of suitable habitats found within surveyed habitats by county. Keystone's Biological Assessment provides a more comprehensive analysis as directed by the USFWS which includes a landscape-scale consideration of habitat availability. Text in this section was revised to indicate that a maximum total of 338 acres of surveyed and estimated forested habitats suitable for Indiana bats would be lost due to construction of the Keystone Project, encompassing a maximum total of 19 primary maternity roosts.
630	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-40, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Federally Protected Fish and Mollusks: The DEIS states, "… Keystone contractors shall maintain adequate flow rates to protect aquatic life and to prevent interruption of existing downstream users." The FWS recommends defining "adequate flow rates" and how this will be determined. Adequate flow rates can vary depending on what species is being managed.	Water withdrawals would require appropriate permits, and would be coordinated with each state. Keystone would comply with all permitting requirements. Revised statement to" Throughout construction, contractors shall maintain adequate flow rates, such that small streams are not dewatered, to protect aquatic life and to prevent the interruption of existing downstream uses." Added clarification that Keystone would coordinate water withdrawal with the appropriate USFWS Environmental Services field office when federally listed species inhabit or use the aquatic system.
631	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Pages 3.8-42/43, Table 3.8.1-12, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Federally Protected Fish and Mollusks-Topeka Shiner: This table has critical habitat federally designated for the Topeka shiner in Kansas. There is no federally designated critical habitat for the Topeka shiner in Kansas. In addition, Page 3.8-47 identifies critical habitat for the Topeka shiner in Kansas. This needs to also be corrected.	Corrected habitat designations in Table 3.8.1-12 from Federal Critical Habitat (FCH) to State Critical Habitat (SCH) as requested. Corrected text on page 3.8-47 from" federally designated critical habitats" to state designated critical habitats.
632	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-50/51, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Decurrent False Aster: We recommend that Keystone follow BMPs and measures developed by MDC and outlined on pages 3.8-50 and 51 to minimize potential impacts to the decurrent false aster. We agree with the assessment that the Keystone project is likely to adversely affect decurrent false aster. We also recommend that Keystone use the northern alternative at milepost 1020.6 in the confluence area to minimize potential impacts to the decurrent false aster.	Added requested measures for decurrent false aster to pages 3.8-50/51. Added mitigation proposed by Keystone "Keystone has developed a small route variation in consultation with the MDNR and USFWS through the Confluence Point State Park to avoid an area of recently planted of hardwood trees and an area where decurrent false aster were located.
633	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-55, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Running Buffalo Clover: We recommend that Keystone follow BMPs and measures developed by MDC and outlined on pages 3.8-55 to minimize potential impacts to the running buffalo clover. We agree with the assessment that the Keystone project may adversely affect running buffalo clover so we recommend that Keystone continue to work with state and federal agencies to minimize habitat impact, by avoidance or mitigation.	Added requested measures for running buffalo clover to page 3.8-55.
634	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-54, Section 3.8.1.6, Potential Impacts and Mitigation for Federally Listed Species-Western Prairie Fringed Orchid: The first paragraph refers to the eastern prairie fringed orchid in North and South Dakota and Nebraska. This needs to be changed to western prairie fringed orchid.	Corrected text on page 3.8-54 by changing "eastern prairie fringed orchid" to "western prairie fringed orchid".
635	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-78, Section 3.8.3, Species of Conservation Concern: The long tailed weasel is listed as a species of concern in Oklahoma by the Oklahoma Department of Wildlife Conservation and this is not noted in the DEIS. We recommend this be corrected.	Added designation as Species of Concern for the state of Oklahoma to Table 3.8.3-1 on page 3.8-79.
636	Willie R. Taylor USFWS	88	10/11/2007	letter	T&E	Page 3.8-88, Section 3.8.3.1, Potential Impacts and Mitigation for Species of Conservation Concern: The FWS recommends adding that disturbance to bald or golden eagles are prohibited under the BGEPA and MBTA.	Added text to Section 3.8.3.1 on page 3.8-88 "Disturbance to bald or golden eagles are prohibited under the BGEA and the MBTA."
637	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 3.9-27, Section 3.9.37, Recreation and Special Interest Areas-US. Fish and Wildlife Service Easements The FEIS should include the purpose of wetland easements as suggested in the following sentence change: Wetland easements are signed agreements with private landowners to permanently protect valuable wetlands as waterfowl production areas.	Comment accepted. Sentences has been added as suggested
638	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 3.9-28, Section 3.9.3.7, Recreation and Special Interest Areas: Table 3.9.3-8 U.S. Fish and Wildlife Service Wetland Easements Crossed by the Keystone Mainline Project There are two inconsistencies with this table and Table 3.4.3-4. The first line in the left column should probably read milepost 76-77 and line 5 in the right column should probably read milepost 310.5-311	Keystone has changed its route in several locations since the DEIS was published. The table in question will be checked against new information from Keystone.
639	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 3.9-39, Section 3.9.4.1, General Land Use: The FWS recommends further defining "rangeland." Please clarify in the FEIS whether this is improved pasture with all non-native species, a mix of non-natives and native species pasture used for livestock, all native species, or something else.	As used in the FEIS, the grassland/rangeland land use category refers to a mix of vegetation types, including tall grass prairie, mid-grass prairie, short grass prairie, sand prairie, non-native grassland, deciduous shrubland, mixed native and non-native grasslands and mixed prairie, improved and unimproved pasture, and lands that appear to be used for cattle or other livestock grazing. A footnote has been added to Table 3.9.4-3 to better define the term.
640	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 3.9-40, Section 3.9.4.1, General Land Use: Please identify in the FEIS the State managed land in Oklahoma that would be crossed by the pipeline.	Keystone has confirmed that 3.6 miles of state owned land (53 acres) would be crossed in Oklahoma (See Table 3.9.4-5). Keystone identified this as state school land. Text in section 3.9.4.1 has been amended.
641	Willie R. Taylor USFWS	88	10/11/2007	letter	LNU	Page 3.9-40, Section 3.9.4.1, General Land Use: Please clarify in the FEIS which of the acreages presented in Table 3.9.4-5, represent temporary ROW versus the permanent ROW acreages by habitat type.	All of the values for Table 3.9.4-5 (Ownership of Acres Crossed by the Keystone Cushing Extension) are for construction-related acreage. Keystone has not provided a breakdown of public and private ownership for the permanent ROW. No information is currently available to determine ownership of the construction or permanent ROW by land use type or habitat type.
642	Willie R. Taylor USFWS	88	10/11/2007	letter	SAF	Page 3.13-2, Section 3.13.1.1, U.S. Department of Transportation Standards: The FWS believes that the confluence area in St. Charles County could be classified as a high consequence as defined in (4). Therefore, we recommend that an Integrity Management Plan be developed by Keystone	As per USDOT requirements, Keystone is required to do an Integrity Management Plan prior to operation. The USDOT defines HCAs not Keystone.
643	Willie R. Taylor USFWS	88	10/11/2007	letter	CME01	Page 3.14-1, Section 3.14, Cumulative Impacts: Based on the National Pipeline Mapping System and the Oklahoma Corporation Commission data, the past and present linear projects in Oklahoma are not addressed adequately. We recommend further analysis of existing pipelines in Oklahoma, as well as other States. We would further recommend a map providing a visual analysis of the cumulative effects of pipelines and other linear projects.	Additional information on existing natural gas and oil pipeline systems has been added to the text of Section 3.14.2.

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644	Willie R. Taylor USFWS	88	10/11/2007	letter	CME01	Section 3.14.4, Terrestrial Vegetation and Wildlife: states, "The majority of cumulative impacts discussed above would be temporary and minor. Long-term cumulative impacts on vegetation and land uses could occur if the other reasonably foreseeable projects in Section 3.14.2 would be constructed and affect similar vegetation or land uses." FWS disagrees that the project will cumulatively have temporary and minor impacts. The DEIS does not identify or evaluate the effects of wind power and associated power lines that are likely to have an impact in the reasonably foreseeable future. Habitat fragmentation and wildlife displacement are a major concern. The DEIS does not analyze impacts due to the 161 miles of new transmission lines that are part of the Keystone project. Nor does the DEIS assure that permanent impacts to fish and wildlife resources will be mitigated. Loss of forested habitats, fragmentation of grassland and wetland habitat and displacement of wildlife that use these habitats, and loss of wetland habitats that are considered non-jurisdictional. The Presidential Permit should be conditioned to require compensation of lost habitat.	Impacts of the 161 miles of new transmission lines have been assessed in the FEIS. Text in Section 3.14.4 has been amended. The level of mitigation required for impacts to jurisdictional wetlands will be determined during the permitting process of the relevant jurisdictional agency. Text in Section 3.14.4 has been revised in light of cumulative impacts due to wind power projects and transmission lines.
645	Willie R. Taylor USFWS	88	10/11/2007	letter	WET	Page 5-5, Sections 5.4.1 and 5.4.3, Wetland Conclusions (5.4.1) and Wetland Recommendations (5.4.2):The FWS believes that the measures suggested to ensure that easement wetlands are not filled by pipeline construction should be made conditions of the Permit. The FEIS should address how the FWS will be able to determine that easement wetlands have very similar ponding capabilities pre-construction and post construction if fill will be placed in the basins.	Post-construction monitoring at restored wetlands was added to additional measures and was noted as recommended by USEPA and USFWS
646	Willie R. Taylor USFWS	88	10/11/2007	letter	WIL	Page 5-6, Section 5.5.2, Wildlife Recommendations, The FWS strongly supports the replacement or restoration of native prairie and forest. We recommend that habitat replacement occur in areas adjacent to existing large tracts of native habitat in order to consolidate habitat and reduce habitat fragmentation.	Added recommendation to Section 3.6.
647	Willie R. Taylor USFWS	88	10/11/2007	letter	MIT	The FWS will issue Keystone a permit and execute a ROW agreement for pipeline construction and subsequent maintenance through easement wetlands. These permits will stipulate that easement wetlands cannot contain added fill material and that wetlands must be capable of ponding water post construction, similar to pre-construction. The FEIS should describe the measures to be taken to prevent or rectify these impacts should they occur. The FEIS should address how Keystone will comply with the terms of the easement wetland permit and ROW agreement as described in Appendix B: Section 1.0 1st paragraph after bullets: "Keystone shall implement the construction, mitigation and reclamation actions contained in this Plan to the extant that they do not conflict with the requirements of any applicable federal, state and local rules and regulations and other permits and approvals that are obtained by Keystone for the Project. All work must be in compliance with federal, State and Local permits." Section 6.5 , 2nd sentence: "However, all work shall be conducted in accordance with applicable permits."	Conditions negotiated between USFWS and Keystone for crossing Easement Wetlands would apply in addition to or in lieu of any specific requirement of Appendix B. Conditions negotiated between other permitting agencies and Keystone for crossing lands under their jurisdiction would apply in addition to or in lieu of any specific requirement of Appendix B.
648	Willie R. Taylor USFWS	88	10/11/2007	letter	MIT	**Appendix B 6.5.1.1 "Dry" Wetland Crossing Procedures** As stated in the DEIS this appendix section states the: "Contractor shall not install barriers at wetlands designated as "dry" unless otherwise specified by Keystone." As stated for section 3.4-14 of the DEIS, this appendix should address what measures will be taken by Keystone to limit sediment from excavated soil being carried into dry easement wetlands.	Conditions negotiated between USFWS and Keystone for crossing Easement Wetlands would apply in addition to or in lieu of any specific requirement of Appendix B. Conditions negotiated between other permitting agencies and Keystone for crossing lands under their jurisdiction would apply in addition to or in lieu of any specific requirement of Appendix B.
649	Anne Haaker IL SHPO	89	10/4/2007	letter	CUL01	We cannot Concur with the determinations because no report of the results of the archaeological survey and subsequent NRHP evaluations of selected sites has been received by our office	The IL technical report was only recently received. DOS is sending letters requesting determinations of site eligibility with permanent numbers.
650	Anne Haaker IL SHPO	89	10/4/2007	letter	CUL05	We are in receipt of the Unanticipated Discovery Plans submitted to this office in your September 12, 2007 mailing. The Unanticipated Discovery Plan is adequate and is acceptable to this office.	Comment acknowledged. No change to DEIS.
651	Charles Wallis OK SHPO	90	10/3/207	letter	CUL01	As previously stated, we cannot concur with your opinion on eligibility of the ten archeological sites documented by American Resources Group (ARG) as we have not received a copy of the archeological report for review. Your "Attachment E" (List of Properties in Oklahoma) does not provide enough information for us to concur with your findings	The OK technical report was only recently received. DOS is sending letters requesting determinations of site eligibility with permanent numbers.
652	Charles Wallis OK SHPO	90	10/3/207	letter	CUL05	we have no problem with the draft "Unanticipated Discoveries Plan" with one exception, that being in regards to the ending comment for Section II, "If the human remains are determined to be Native American, they will be handled in accordance with NAGPAA." As I'm sure you are aware, NAGPAA only applies to human remains discovered on Federal or Indian lands. It does not apply to remains encountered on private property, the case for the entire Cushing Extension or Oklahoma segment. As defined elsewhere in the plan, Oklahoma status applies in this case, regardless of nationality.	DOS is being made aware of this issue and being asked to adjust the Plan accordingly
653	Jennie Chin	91	10/1/2007	letter	CUL05	In accordance with 36 CFR &00, the Kansas State Historic Preservation Office has reviewed a packet containing APE letters, APE maps, and a CD containing proposed geotechnical investigations, borehole maps, lists of properties evaluated for National<register eligibility, and unanticipated discovery plans. We find the documentation to be acceptable.	Comment acknowledged. No change to DEIS.
654	Jennie Chin	91	10/1/2007	letter	CUL04	The list of properties evaluated for NR eligibility is consistent with other material that we have already reviewed, although we find the continued use of temporary site numbers to be distracting To the best of our knowledge, all of those properties listed now have permanent numbers and we request that those be used in all future submissions	The KS technical report was only recently received. DOS is sending letters requesting determinations of site eligibility with permanent numbers.
655	Chris Hastings	92	9/10/2007	letter	ATT	First off, the crude oil transported through this pipeline will leave the soil temperature warmer than the surrounding soil, what will happen when every rodent and/or pest within a two mile radius of the warm pipeline decides to burro, dig and live near it?	Badgers, prairie dogs and burrowing rodents may be attracted by the warmth generated by the pipeline especially during winter months. The pipeline would generally not change soil temperatures more than a few degrees at a depth of 6 inches with soil temperatures at the surface generally unchanged. It is unlikely that the pipeline would alter distributions of badgers or rodents within a 2 mile radius from the pipeline. Landowners could report concerns relative to burrowing animal distribution through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. If burrowing animals attracted by pipeline operation impact crop productivity, Keystone has stated:: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation".
656	Chris Hastings	92	9/10/2007	letter	LIA	If the ground around the pipeline collapses during normal farming activities who is at fault?	Section 4.15 of keystone's CMR states that trench depressions on ditch line which may interfere with natural drainage, vegetation establishment or land use shall be repaired as expediently as practicable by Keystone or by compensation of the Landowner to repair the area.
657	Chris Hastings	92	9/10/2007	letter	LIA	If all of the rodents/pests are centered in one area, who is responsible for the crop damage they cause?	Badgers, prairie dogs and burrowing rodents may be attracted by the warmth generated by the pipeline especially during winter months. The pipeline would generally not change soil temperatures more than a few degrees at a depth of 6 inches with soil temperatures at the surface generally unchanged. It is unlikely that the pipeline would alter distributions of badgers or rodents within a 2 mile radius from the pipeline. Landowners could report concerns relative to burrowing animal distribution through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. If burrowing animals attracted by pipeline operation impact crop productivity, Keystone has stated:: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation".
658	Chris Hastings	92	9/10/2007	letter	RDS	The equipment that Trans-Canada has shown in there films is massive, much larger than any of the roads in our county can handle. We have also had a considerable amount of rainfall the last few years and once we have a sink hole, it stays a sink hole. Once Trans-Canada bores through the roadways, then drives their heavy equipment across it, they will be left in despair. It could take years to fix the spots they bore through for their pipe, possibly even having to rip the damaged spots up and starting over. If there equipment is too heavy and leaves hard pans that are rough and washboard, that is the only answer there will be.	Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads. As discussed in the section, To minimize the effects of large machinery and transport trucks on local roads, traffic flows, and related services, Keystone would use major highways as much as possible to transport slow-moving, heavy construction equipment to the spread areas. Damage to existing roads also would be minimized by following permit requirements for maximum vehicle loads and width limits. Any soil remaining on the road surface from construction equipment and activities would be removed, and any damage to roads would be repaired by Keystone to preexisting conditions or better, following construction.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
659	Chris Hastings	92	9/10/2007	letter	ATT	In our area, noxious weeds are a big problem. I spend many hours every year trying my best to control them and to keep them from becoming a much larger problem.	Weed control is discussed in Appendix B and in Section 3.5.5.4 of the DEIS. Keystone has committed to developing a project-wide control plan to prevent the spread of noxious weeds. In addition, Keystone's CMR includes the following mitigation measures: provide weed control on the construction ROW with Keystone surface jurisdiction; and reimburse landowners adjacent to aboveground facilities when they must control weeds determined to have spread from land with Keystone aboveground facilities. To prevent the introduction of noxious weeds Keystone mitigation includes: thoroughly cleaning all construction equipment prior to moving the equipment to the job site; mark all areas of the ROW containing noxious, invasive weeds or soil-borne pests; use best management practices for vegetation control; apply pre-construction treatments at sites identified to contain noxious weeds; apply herbicides within 1 week or as deemed necessary for optimum mortality prior to disturbing area by clearing, grading, trenching.
660	Chris Hastings	92	9/10/2007	letter	VEG	We also have a very sandy soil, which takes an adequate rainfall to produce lush green grass. In the areas in which Trans-Canada would put their pipe through areas of native grasses, I expect the ground will be left bare when they are finished. Even if they come back and replant the grasses, it will take a lot of moisture and monitoring to get the grasses back to where they were. I guarantee the first thing to grow back in those areas is our noxious weeds, and I doubt whether Trans-Canada will be around to keep this from happening.	Keystone's CMR Plan discusses measures to preserve native grasslands. In addition, Keystone will reclaim and monitor vegetated land using native seed mixes specified by state and federal agencies such that no net loss of native prairie habitat will occur; and that native species become established . Weed control is discussed in Keystone's CMR and in Section 3.5.5.4 of the DEIS. Keystone will develop a project-wide control plan to prevent the spread of noxious weeds. Keystone's CMR Plan includes: providing weed control on the construction ROW and reimbursing landowners adjacent to aboveground facilities when they must control weeds determined to have spread from land with Keystone aboveground facilities. To prevent the introduction of noxious weeds Keystone mitigation includes: thoroughly cleaning all construction equipment, prior to moving the equipment to the job site; mark all areas of the ROW containing noxious, invasive weeds or soil-borne pests; use best management practices for vegetation control; apply herbicides within 1 week prior to disturbing area by clearing, grading, trenching.
661	Chris Hastings	92	9/10/2007	letter	OIL	Pipes leak; in fact anything man made will eventually leak. Last I knew soil plus oil equals disaster. What is going to happen if our soil is contaminated with crude oil? I have no idea how many times I have asked this question and have not gotten a straight answer. I keep getting told that "Our pipes won't leak". That is not a good enough answer for me.	The EIS addresses risks to soil from leaks and spills during the operation lifetime of the pipeline in Section 3.13.5.2, Soils and Sediments. No change to EIS required.
662	Chris Hastings	92	9/10/2007	letter	PIP	Again, anything man made will eventually leak. To top it off just today as I am preparing this document, I read an article which appeared 9-9-07 in the Aberdeen American News that states Trans-Canada will be allowed to use a thinner pipe for the construction of there pipeline in rural areas. Does this make sense to anyone? Why on earth would you take something as dangerous as crude oil and decide to put in a thinner pipe? The only reason I can see is that Trans-Canada thought they needed to have a little more money in there back pocket.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
663	Chris Hastings	92	9/10/2007	letter	OIL	If the pipeline does break in my area, what is the next step? If a break occurs on the land that I operate and crude oil is shot everywhere, nothing will grow. I have highly erodeable soil in my area. If nothing will grow because of an oil spill, how will I stay in compliance with FSA regulations?	The EIS addresses risks to soil from leaks and spills during the operation lifetime of the pipeline in Section 3.13.5.2, Soils and Sediments. No change to EIS required.
664	Chris Hastings	92	9/10/2007	letter	VAL	How will my family generate an income off of dead land that we will still have to pay taxes on? Will Trans-Canada buy me more land so that I can continue my farming operations?	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
665	Chris Hastings	92	9/10/2007	letter	WAT	If an oil spill occurs on our land, it will also contaminate the aquifer that BDM Rural Water Systems relies on for their water. How do you suppose Trans-Canada will get water to the thousands of residents, not to mention the tens of thousands of cattle, that rely on BDM for their water everyday.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
666	Chris Hastings	92	9/10/2007	letter	SAF	Trans-Canada is also proposing a pumping station just to the north of our land. How does Trans-Canada propose to protect this area? What would a stray bullet from a hunter do to this area? Or possibly on purpose; have you ever seen what stop signs on some of our back roads look like?	Pump stations would be remotely operated and security would be provided by secure chain link fencing and video monitoring if necessary. The area would be posted with "No trespassing" signage and trespassers or vandals would be prosecuted to the full extent of the law.
667	Chris Hastings	92	9/10/2007	letter	RTE04	I am against any kind of crude oil pipeline running through South Dakota.	Comment acknowledged.
668	Anonymous 2	93	9/12/2007	letter	ENR	The pipeline is designed to deliver 435,000 bpd of heavy petroleum AKA sand oil to the Midwest USA in spite of the annual production of the 129 current plants' 6313 mm gallons per year plus the 68 plants under construction of 4974 mm gallons per year for (unintelligible) of 11, 287 mmg per year (unintelligible) that will satisfy the mandated commission to biofuels for the United States.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
669	Anonymous 2	93	9/12/2007	letter	UNE	President Bush's desire to reduce consumption by 2010 means that by 2017 we will be exporting (unintelligible) according to Charles Deura, Executive V.P. of the National Petrochemical and Refineries Association.	Comment acknowledged.
670	Delwin Hofer	94	9/12/2007	letter	VEG	We encourage planting shelterbelts and grass to prevent erosion. TransCanada has no value in shelterbelts, there is a shelterbelt west of Carpenter where the pipeline is going right through. As a conservationist, this will be a terrible sight. There is a shelterbelt right south of where the pumping station will be on Madsen's land and this will be ruined too.	Measures to protect shelterbelts during construction are discussed in Section 3.5.5.2 and Section 3. Keystone has committed to the following measure: •The construction ROW at timber shelterbelts in agricultural areas shall be reduced to the minimum necessary to construct the pipeline. Facility sitting may be adjusted to avoid disturbance to shelterbelts, however, it is estimated that approximately 1,110 acres of forested habitats would be removed by construction of the Keystone project.
671	Delwin Hofer	94	9/12/2007	letter	WET	They are also going to destroy trees in the wetlands and the wetlands too. A farmer does not have the right to dig in the wetlands or take trees out of wetlands according to the farm bill. How does TransCanada get by with it.	Keystone has indicated that wetlands would be restored so that there would be no permanent loss of wetlands. However, forested wetlands would be converted to emergent wetlands (See discussion Section 3.4-12 to 3.4-13). Several agencies have requested compensatory mitigation for wetland losses, including loss of forested wetlands (See Section 3.4-16). Keystone has indicated that compensatory mitigation would be addressed during the USACE Section 404 permitting process. Keystone must have a USACE permit in order to construct the pipeline through wetlands.
672	Delwin Hofer	94	9/12/2007	letter	VEG	Then there will be wetlands lost, virgin sod will be ripped up and destroyed	Impacts to wetland habitats are discussed in Section 3.4 and impacts to native prairie and prairie sod are discussed in Section 3.5.
673	Delwin Hofer	94	9/12/2007	letter	ERO	tons of topsoil will be lost to wind and water erosion.	Keystone has stated that "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices."
674	Delwin Hofer	94	9/12/2007	letter	VAL	what is the value of our trees, water and soil?	As noted in Section 3.9.3.2, "Agricultural Land," construction and operation of the Mainline Project facilities would affect about 11,210 acres of agricultural land. All land disturbed by the construction project would be restored. Keystone would compensate agricultural landowners for actual crop losses and restore land productivity such that crop yields on disturbed land would be restored to levels similar to adjacent undisturbed portions of the same field. Information on crop yields and prices would be obtained from the USDA. Supplemental property specific yield and price data would then be obtained from individual landowners and used during discussions between landowners and Keystone. The proposed project will not adversely affect the utilization of the land for alternative crops, as soil productivity will be restored to pre-project levels.
675	Delwin Hofer	94	9/12/2007	letter	ACK	Will the state conservation board be involved in the Environmental impact statement? If not , why not?	The State Conservation Board can comment on the FEIS as any other public or private entity can.
676	Delwin Hofer	94	9/12/2007	letter	MIT	Due to the loss of wetlands and trees, will there be mitigation?	Section 3.4 discloses Keystone project impacts to wetlands and discusses mitigation and restoration measures. Section 3.5 discloses Keystone project impacts to Vegetation Communities of Conservation Concern including Native Forests and describes measures to protect forested lands. Keystone measures which apply to landowner compensation for timber include: Consult with the landowner to determine whether any trees are of commercial or other value to the landowner; Salvage timber as requested by the landowner; and follow the landowner's desires in the easement agreement regarding the disposal of trees, brush, and stumps of no value to the landowner by burning, burial, or complete removal from any affected property. Keystone will negotiate monetary compensation with affected landowners.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
677	Delwin Hofer	94	9/12/2007	letter	PIP	Thinner pipe and more pressure means more leaks. Safety is not a concern for TransCanada	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
678	Delwin Hofer	94	9/12/2007	letter	OIL	Soil and water contamination is no concern for TransCanada	Please refer to Section 3.2, Soils and Sediments and Section 3.3, Water Resources for assessments of impacts to these resources.
679	Delwin Hofer	94	9/12/2007	letter	EXP	TransCanada does not have a pipeline like this one and they have no idea how many leaks they will have!	Keystone does not at present operate crude oil pipelines. The data used to analyze oil spill risk in the FEIS are based on leaks from al crude oil pipelines regardless of the owner/operator of the pipelines, l including many that have been in operation for years to decades. Older pipelines may not have been constructed to current standards, maintenance procedures may not have been as stringent as current ones, and therefore failure rates are more likely to occur in these older pipelines. The proposed Keystone pipeline would be built to current standards which have resulted in a steady decrease in the number and size of spills in the last few years (see Section 3.13 of EIS and Appendix L).
680	Delwin Hofer	94	9/12/2007	letter	LIA	What are TransCanada's liabilities? How much Liability insurance will TransCanada carry per acre of land that will be affected?	The key regulation for pipeline spill response is 49 CFR Part 194 – "Response Plans for Onshore Oil Pipelines". Under Part 194.115, Response Resources, Operators must submit a plan, and must certify that they have response resources sufficient to respond to the worst case oil spill. Ensuring the necessary resources are available "by contract or other approved means" provides equivalent or better protection than bonding. Bonding just covers the finances, that does not mean that the needed resources are actually trained and available. Under this rule they need to "ensure" actual resources in a given time frame.
681	Delwin Hofer	94	9/12/2007	letter	REG	Will there be state and federal inspectors at the site during construction?	The Applicant has committed to an Environmental Inspector to ensure compliance with the CMR during construction. State and Federal permitting agencies would provide monitoring during construction and operation in their specific jurisdictions.
682	Delwin Hofer	94	9/12/2007	letter	RDS	What will happen to our roads?	Comment acknowledged. Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads. As discussed in the section, To minimize the effects of large machinery and transport trucks on local roads, traffic flows, and related services, Keystone would use major highways as much as possible to transport slow-moving, heavy construction equipment to the spread areas. Damage to existing roads also would be minimized by following permit requirements for maximum vehicle loads and width limits. Any soil remaining on the road surface from construction equipment and activities would be removed, and any damage to roads would be repaired by Keystone to preexisting conditions or better, following construction. No change to DEIS.
683	Delwin Hofer	94	9/12/2007	letter	LND	Will we be able to get to our land to farm it?	During construction of the pipeline, landowners may be temporarily unable to access farmland for agricultural activities. Keystone proposes to inform landowners a minimum of 1 one day in advance of accessing their lands for construction purposes. In addition, Keystone would provide access during construction across the ROW, at locations requested by the landowners, if practicable. Construction impacts on farmland access would be temporary and minor, and Keystone would compensate landowners for any damage due to construction-related restriction of access. Operation of the pipeline would not affect access, as full access to the ROW would be restored to landowners following the construction period.
684	Delwin Hofer	94	9/12/2007	letter	ACK	I have been to five meetings with TransCanada there answers are different at each meeting.	Comment acknowledged; no change to DEIS.
685	Delwin Hofer	94	9/12/2007	letter	RTE04	I believe the people, wildlife, water, air, trees and soil are too precious to let this pipeline go across this state.	Comment acknowledged.
686	Frank Klouik	95	9/11/2007	letter	LIA	What happens if there is an oil spill and my land is affected. My land will be worthless and I will lose my livelihood. Will I be compensated?	Landowner compensation for damages would be covered in the easement agreement between the landowner and Keystone and is not issue addressed under NEPA.
687	Frank Klouik	95	9/11/2007	letter	OIL	What will be set in place to stop and oil spill from happening? What is set in place to clean up and protect the land in an oil spill?	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. .Keystone's Draft Emergency response Plan (Appendix C) provides details regarding spill prevention, detection, and response. The plan will be finalized and approved by all appropriate agencies prior to pipeline operations.
688	Frank Klouik	95	9/11/2007	letter	LNU	My land is in the CRP program. Will this affect the CRP program? Has the CRP program been notified and do they have input on this issue?	Section 3.9 discusses CRP lands. The FSA has agreed that Keystone may cross the CRP land, subject to an appropriate restoration agreement. The FSA has been party to discussions throughout the development of the proposed project. Keystone would facilitate landowners to provide local FSA offices with all appropriate information necessary to create a restoration agreement, which would ensure that CRP lands would remain in the program. In the event that any tracts of land were to exit the CRP, Keystone would compensate landowners for all demonstrable costs.
689	Frank Klouik	95	9/11/2007	letter	VAL	Will the pipeline running though CRP land affect the payments to the owner?	No change to DEIS. The FSA determined land ownership tracts along the proposed corridor totaling 16,648 acres which have some portion in the CRP program. FSA is unable to determine how many acres of actual CRP lands within these tracts are impacted by the proposed corridor. The CRP acres directly crossed by the corridor could be required to exit the program, and the landowners would be required to pay 25 percent of annual rent payment as well as federal cost-shares received, all annual rental payments, and interest. Keystone and FSA would determine which enrolled acres would be affected by site visits. Keystone would be responsible for covering all agricultural losses incurred because of pipeline construction and operation, and would restore the ROW to its original condition following construction. See Chapter 3.9.3.2, pp. 3.9-14 and 3.9-15.
690	John Davidson	96	9/11/2007	letter	RTE04	I am opposed to the routing and siting of the TransCanada-Keystone Pipeline because of the long range impacts it will have on the land, the people, the communities, the environment and the water resources of the region.	Comment acknowledged.
691	John Davidson	96	9/11/2007	letter	WAT	I am also concerned that the TransCanada-Keystone Pipeline crossing south of Yankton, South Dakota, will fail and have a catastrophic effect on the waters of the Missouri River south from Yankton, which are relied upon for drinking water (including the regional Lewis & Clark Regional Water System), recreation, wildlife habitat, irrigation, commerce and navigation.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
692	John Davidson	96	9/11/2007	letter	HYP	I am particularly concerned that the Hyperion Oil Refinery will destroy a vast acreage of prime farmland, upturn stable rural communities, destroy ground and surface waters, and pollute the air of a clean air region.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
693	John Davidson	96	9/11/2007	letter	UNA	The Executive Office has assigned to the Department of State (DOS) the duty to prepare an EIS on the proposed TransCanada-Keystone Pipeline, and that process is well underway, with a draft statement in circulation and hearings scheduled during the next several weeks. Most observers agree that this 'process is being pushed at a rate of speed unheard of with projects of such magnitude.	Comment acknowledged.
694	John Davidson	96	9/11/2007	letter	ACK	Every indication is that the analysis is superficial, most of it having been "farmed out" to a private consulting firm linked closely with the energy industry.	The FEIS is being prepared by a third-party contractor under the direction of DOS with input from the cooperating and assisting agencies.
695	John Davidson	96	9/11/2007	letter	ACK	Representatives of the DOS have even been quoted in regional newspapers to the effect that the approval has already agreed upon. As a result, I offer the observation that the agency is coming very close to mocking this important process which is intended to bring sound, balanced, planning, along with citizen participation, to major federal actions.	The DOS is following the requirements of NEPA in preparing the EIS. No permits have been issued for the proposed Keystone pipeline, and none will be prior to the publication of the FEIS and preparation of the Records of Decision by each of the cooperating agencies with permitting authority.
696	John Davidson	96	9/11/2007	letter	HYP	They have met publicly and privately with most local and state elected officials, always assuring that the project is an accomplished fact. This is in every way an action that is complete, and completely connected to TransCanada/Pipeline. I request, therefore, that the agency revise the scope of the EIS to include a full analysis of the Hyperion Oil Refinery and the pipeline that will connect TransCanada/Keystone to the refinery.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
697	Janet Schramm	97	10/4/2007	letter	WAT	My concern is the safety of the pipeline as it crosses the water lines and river.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
698	Janet Schramm	97	10/4/2007	letter	ACK	Most non-agricultural people here have no idea how this will affect their lives.	Comment acknowledged; no change to DEIS.
699	Janet Schramm	97	10/4/2007	letter	PIP	I'm also concerned about the waiver of material for the pipeline. The Hazardous Materials Safety Administration will allow cheaper, less safe material	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
700	Janet Schramm	97	10/4/2007	letter	RUR	Are we of South Dakota less valuable as citizens than other states?	The proposed Keystone pipeline crosses seven states in order to reach destinations at Wood River and Patoka Illinois and Cushing Oklahoma.
701	Janet Schramm	97	10/4/2007	letter	VAL	The offers being made for the property does not reflect the productive ability of the land for future years.	Comment acknowledged. No change to DEIS. Approximately 13,000 acres of agricultural land would be temporarily removed from production during portions of the 18-month construction period. The lost production values to individual landowners would be compensated by Keystone for pipeline easements, which would reflect lost production values and agricultural income. Construction-related displacement of most agricultural uses would be temporary, lasting only through the construction on period. See Chapter 3.10.2.1, page 3.10-45.
702	Janet Schramm	97	10/4/2007	letter	ACK	South Dakota has been a healthful beautiful place to live. Have you ever seen oil country? The odor, the destruction of the topography, the future contamination are also going to change that.	Comment acknowledged.
703	Kimberly Doffin	98	9/23/2007	letter	WAT	I am not against the pipeline. I am concerned for the safety of our aquifer and well water since it will be running through my 160 acre farm by Hoskins, Nebraska.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
704	Kimberly Doffin	98	9/23/2007	letter	RTE05	The way they surveyed the pipeline route will bring it right next to a creek on the Southeast part of my property. If they move it more In the West it gets closer to our well. There is also a large, old cottonwood tree in the pasture that may be in the way, I do not want it cut down. The hawks, owls, and area bald eagles use it to hunt from.	Keystone would work with individual landowners to find the best route though their property within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
705	Kimberly Doffin	98	9/23/2007	letter	RTE04	The pipeline will split my land in thirds and run diagonally, making a third of my land practically useless	Keystone would work with individual landowners to find the best route though their property within the constraints of the project design. Mitigation measures outlined in the CMR Plan (Appendix B) would also reduce impacts to these areas. The CMR Plan would be amended prior to construction through the addition of additional mitigation measures agreed to by Keystone through the NEPA process.
706	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	LND	First let me say that our group is opposed to the TransCanada Keystone Pipeline crossing South Dakota because of the potential damage it will do to farm land, ground water and our rural communities.	Comment acknowledged; no change to DEIS.
707	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	PER	IF the TransCanada-Keystone crude oil pipeline has to cross South Dakota, conditions should be set on the permit to place the least amount of impact on South Dakota.	Each individual permitting agency would determine what recommendations should be included as conditions to permits if a determination to issue the permit is made. The permitting agencies have contributed to the environmental analysis and have provided comments and recommendations as recorded herein.
708	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RTE03	We believe the best route is along the 1-29 corridor. TransCanada included an alternative route using the 1-29 corridor in the application they filed with the US State Department and with the Puck. We feel that the 1-29 Alternate Route would be the best possible route for the placement of this oil pipeline, and would have the least negative impact when taking into consideration all factors.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
709	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RTE03	The 1-29 route would: 1)place the impacts of the crude oil pipeline in the eastern part of the state where the benefit of the $8 billion oil refinery near Elk Point, SD will be realized. 2)take very little private farm land out of production, or lands for business development. 3)the governor could grant TransCanada most of the easement they will need and the state would get most of the easement payment. 4)the state would still get the $6.4 million in annual tax revenues they desire 5)the aquifer that 80M Rural Water relies on would be protected 6)the thousands of miles of buried PVC rural water pipelines would not be impacted, such as those used by WEB rural water, Clark rural water, Hanson rural water, TurnerMcCook rural water and B-Y rural water system. 7)avoid sensitive shallow aquifers and groundwater in the counties of Marshall, Day, Clark, Beadle, Hanson, Hutchinson, Ankton, McCook and Moody. 8) has properly equipped and trained fire departments of Watertown, Brookings and Sioux Falls available to contain oil spills and fight crude oil fires. These and other emergency responders would be ready and able to respond along the interstate highway system	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills. Keystone has committed to working with landowners to find the best route though their individuals properties, within the constraints of the designated corridor and project design, to avoid sensitive areas and recognize site constraints.
710	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	LND	TransCanada has proposed a pipeline across a quarter of our good farmland and land owned by our neighbors and friends in Marshall County. South Dakota. The pipeline will lie on or next to a piece of virgin sod that Raymond has protected for SO years.	Comment acknowledged; no change to DEIS. Keystone would practice topsoil segregation to ensure that high quality topsoil is not mixed with subsoils, and would employ measures to relieve ground compaction. Restoration of the ROW would be conducted in consultation with landowners the county soil and water conservation district. Areas of disturbance in native rangelands would be reseeded with a native seed mix after topsoil replacement, or would be seeded with a mix approved by the landowner.
711	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	PIP	Last Tuesday night the 11th , I was in Yankton and heard Mr. Winny state that the rural areas were approved for a pipe of lesser thickness. As I sat there, I began to wonder why. I asked him if he thought it would not be as big a disaster if one of my family or friends were injured or killed because of the pipeline as it would be if the pipeline caused problems in a city. Even if it did not harm a person, the land that the pipe is buried in would be ruined for my lifetime, if not for ever.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
712	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	ACK	The difference on farmland being destroyed and city houses being destroyed is huge. Most people who live in town are not adverse to selling their houses and moving to another. I think many plan that action when they buy their houses.	Comment acknowledged; no change to DEIS.
713	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	ACK	One gentleman, I believe he was with Ms. Orlando as an advisor, talked to me and stated that cities were always being dug up so that is why they wanted to stay away from them. I think most farmland is dug up many, many more times-like every year. And some years, the land is dug more than once. There is no cement or asphalt to protect any line on a farm. There is only dirt that may erode away leaving less cover.	Comment acknowledged.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
714	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	ATT	If animals such as badgers dig next to the line for a couple of years because they like to dig and because it is warm in the winter, they could cause the soil to collapse when machinery is driven across it.	Some badger burrows would likely be destroyed during construction if they occur within the construction ROW. Usually the approaching construction equipment would be sufficiently loud so that badgers would leave the area prior to the operation of equipment at their burrow sites. Badgers may be attracted by the warmth generated by the pipeline especially during winter months. It is unlikely that badgers would be able to damage the pipeline, although they may damage the pipeline coating. Keystone will conduct routine inspections of the pipeline ROW after construction. Should badgers appear to threaten pipeline integrity appropriate wildlife officials would be contacted and control measures would likely be implemented after appropriate permits were issued.
715	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	LIA	If animals such as badgers dig next to the line for a couple of years because they like to dig and because it is warm in the winter, they could cause the soil to collapse when machinery is driven across it. Who is going to be responsible for the cost of the machinery? Combines, combine heads, tractors, planters and any other machinery do not come cheap! If we are forced to allow TransCanada Keystone to cross our land, should they not have in their easements that they will be responsible? There is nothing in there that mentions such accidents. I know of a farmer that fell into a water line several years after the line was put in place and the water company paid for the repair of the machinery. What will TransCanada do for us besides laugh? If the animal digs without the pipeline, you might get stuck in the hole but you would not have the damage you will have it you hit the line.	Badgers, prairie dogs and burrowing rodents may be attracted by the warmth generated by the pipeline especially during winter months. The pipeline would generally not change soil temperatures more than a few degrees at a depth of 6 inches with soil temperatures at the surface generally unchanged. It is unlikely that the pipeline would alter distributions of badgers or rodents within a 2 mile region from the pipeline. Landowners could report concerns relative to burrowing animal distribution through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. If burrowing animals attracted by pipeline operation impact crop productivity, Keystone has stated:: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation".
716	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	SOI	What will be left of the top soil after this piece of ground has been dug up again and again. Nothing will ever grow there again. These actions will also destroy the temporary easement ground. You are allowing the potential of permanently destroying 6160 acres just in the state of South Dakota.	Digging will take place as part of pipeline construction, but not operations, so there will not be repeated excavation, at least not of Keystone's doing. The proposed methodology for soil handling to reduce damage to soil productivity is addressed in Appendix B, Construction Mitigation and Reclamation plan. Easement agreements can be negotiated to include provisions for compensation in the event of decreased productivity resulting from the pipeline's presence.
717	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	OPP	These meetings are coming at a terrible time for the farming communities. Many I have talked to could not attend because they are chopping silage. they did very little to accommodate the landowners. There should have been meetings in every county or at least every other one. They should also have the right to hear what is being said here.	DOS believes that an adequate number of meetings were held based on the length of the pipeline and interest expressed by the landowners. In addition, the public had the opportunity to receive a copy and comment on the DEIS through several other means including by website, email, regular mail and telephone. The meetings were timed to fall in the last third of the required 45-day comment period.
718	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	UNA	There has not been enough time to review this DEIS. She said it has been on the internet since last October. That was the first that I had heard that. There are many people who do not use the internet. Where were they to get this information?	Letters were sent to almost 6,000 landowners announcing the availability of the DEIS. The letter incorporated a card that if returned in a timely manner would ensure that a DEIS copy would be received. For non-landowners and other interested parties, copies of the DEIS were sent to libraries at reasonable intervals along the corridor. The Federal Register announced the availability of the DEIS on Aug 10, 2007. The DEIS was posted on the website in PDF format and the appendices were also provided in that format with the hard copy in order to support the paperwork reduction act and minimize the use of paper. PDF is a widely used format for disseminating documents to users of a wide variety of computer hardware. Acrobat Reader, used to open the PDF documents, is easily downloaded for free from the Adobe site. However, we will put a note in the CD with the FEIS directing the user on how to easily download Adobe Reader.
719	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	HYP	We all are very convinced that Elk Point Hyperion are very much attached. It doesn't take much thought to realize that when they need oil at Elk Point, some pipeline company will be back digging in our back yard.	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
720	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	OIL	TransCanada's own documents confirm that there will be oil leaks, every 5 to 12 years depending on which document you are looking at. Independent reports from the US Geological Service and other say the leaks could be more often and larger.	Please refer to the discussion of spill and leak frequency in section 3.13
721	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	WAT	Once the aquifer is damaged, there is no other water and there is no going back. We have several shallow wells on our farm-about 20 to 25 feet. They have served our farm and the surrounding community for years, since statehood. How long do you think it would take for an oil spill to go through 25 feet of sandy soil? At 1,400 psi to 1,700 psi of pressure, a crude oil leak will quickly contaminate and ruin the ground water aquifer that our farm and many others in our county and area rely on	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
722	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	NOT	Everyone should have been told what their rights were and they should have been given a warning of what was coming.	Individual landowner property rights relative to easements for pipeline construction are not within the scope of this EIS. DOS has provided notification of the proposed action through notice in the Federal Register, direct mailings to local newspapers and radio stations, thirteen scoping meetings, thirteen DEIS comment meetings, and a direct mailing list of approximately 6000 individuals, organizations, and stakeholders.
723	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RTE03	Conditions should place on their approval by requiring placement of the oil pipeline along 1-29 where the it could be placed in highway road ditch area. There would be no safety risks during construction because the pipe materials and construction crews could work off of private land easement secured along the edge of the highway ditch and when the work is completed and the pipe installation is completed, the temporary construction easement on private lands could be placed back into production. The 1-29 road ditches are wide enough to accommodate any future maintenance work that may be needed. The highway would offer great access for inspection and emergency response.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
724	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	WAT	"Why don't state and federal agencies treat TransCanada they same way they treat and regulate farmers and small business". Every government agency in Pierre and Washington is concerned with cattle waste and place more and more conditions on farmers and feedlot operators. Yet no one seems to care if oil permeates our soil and reaches our groundwater	Comment acknowledged. No change to DEIS.
725	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	ERP	Where is TransCanada's containment plan? The little guy has to provide containment, but big oil doesn't. So where is the fairness in that? When pressed for an answer to that question in Britton, they admitted that they did not have a plan. The fact is, state and federal government agencies regulate the little guy because they can, and don't regulate oil pipelines because they afraid of big oil.	Section 2.2 indicates that The Keystone Project would be designed, constructed, tested, and operated in accordance with all applicable requirements included in the DOT regulations at 49 CFR Part 195, "Transportation of Hazardous Liquids by Pipeline," and in other applicable federal and state regulations. These regulations are intended to prevent crude oil pipeline accidents and failures. Among other design standards, 40 CFR Part 195 specifies pipeline material and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion. The Draft Emergency Response Plan (Appendix C) includes procedures in the event of a spill. The draft plan will be finalized and approved by DOT prior to pipeline operations. The Final ERP will comply with 49 CFR Part 194 -Response Plans for Onshore Pipelines.
726	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RDS	The township where Raymond and I live and pay taxes can hardly handle snow removal and getting enough gravel on the roads for local travel, let alone heavy construction equipment and pump trucks that will need to come in and suck up the oil leaks. We have roads that are almost washed out on a regular basis.	Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads. As discussed in the section, To minimize the effects of large machinery and transport trucks on local roads, traffic flows, and related services, Keystone would use major highways as much as possible to transport slow-moving, heavy construction equipment to the spread areas. Damage to existing roads also would be minimized by following permit requirements for maximum vehicle loads and width limits. Any soil remaining on the road surface from construction equipment and activities would be removed, and any damage to roads would be repaired by Keystone to preexisting conditions or better, following construction.
727	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	LIA	Unless the PUC places conditions in any permit they issue, I doubt that TransCanada will be caring about any damage they cause to local roads.	Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
728	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RDS	How many township roads are not graveled but do what is needed by the farmers of the area? After they have cut a trench through them, they will never be the same. None of the annual tax revenue the Governor talks about collecting will go back to help the townships. They can sustain the traffic from the locals but not big equipment.	Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads. As discussed in the section, To minimize the effects of large machinery and transport trucks on local roads, traffic flows, and related services, Keystone would use major highways as much as possible to transport slow-moving, heavy construction equipment to the spread areas. Damage to existing roads also would be minimized by following permit requirements for maximum vehicle loads and width limits. Any soil remaining on the road surface from construction equipment and activities would be removed, and any damage to roads would be repaired by Keystone to preexisting conditions or better, following construction.
729	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	PER	The Association of Townships is working on putting together a state wide policy to protect all the townships. The PUC should include protection and maintenance of township roads as a condition for any permit approval.	Section 3.10.2.1 discusses construction impacts on local transportation systems and rural roads. Each individual permitting agency would determine what recommendations should be included as conditions to permits if a determination to issue the permit is made. The permitting agencies have contributed to the environmental analysis and have provided comments and recommendations as recorded herein.
730	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RES	Some local fire departments have less than 5 to 10 people at times. One grass fire that I know of, there were only three of the firemen available. I If they come to harm because of oil fumes or burns, who will pay for their treatments and time lost from their jobs? -they are not equipped to deal with big crude oil fires. If they can't pay an annual payment to the farmers, you know they aren't going to equip every fire department across SD.	Aside from pump stations and a few other permanent structures, the entire length of the pipeline will be underground. In addition, Keystone has developed an Emergency Response Plan in place, which, in the event of a spill or other event, closes upstream and downstream valves to isolate the subject section. Keystone will monitor the pipeline 24 hours per day, 7 days per week, using a system which will alert system monitors of possible spills or leaks. The Operations Control Center operator has complete authority to execute pipeline shutdowns in responding to abnormal pipeline conditions. The plan or an update of the plan will be included with the Environmental Impact Statement. No change to DEIS.
731	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	TAX02	TransCanada came through our communities and went to the town boards and possibly the commissioners. They promised big tax money. When asked how they came to that number, they admitted that they didn't know. They just decided that this might be how it could be. They also state in Britton that they would be asking for tax refunds. Anyone who has lived for long should know that if there are taxes to be handed out, they will go to the state and bigger cities first.	Comment acknowledged. No change to DEIS. The Keystone Pipeline project will generate new tax revenues for the counties through which it passes. The primary local impact would be increased property taxes, which are based on the assessed value of Keystone Project facilities, applicable tax rates, and the portion of the pipeline passing through a county. For North Dakota, the total increase is estimated at $5.3 million, with the greatest increase in Barnes County and the least in Cavalier County. For South Dakota, the total increase is estimated at $6.5 million, with the greatest increase in Clark County and the least in McCook County. See Table 3.10-1-6.
732	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	RUR	Is there something this remote rural area that we call home that we don't know about? Or are we picked for projects of this kind because of its remoteness because other parts of the state want the development dollars but don't want the impacts. If the eastern part of South Dakota wants an oil refinery then the eastern part of the state should have to host the crude oil pipeline. Don't push it off on to our rural area.	Comment acknowledged
733	Lillian Anderson Dakotans Concerned with the TransCanada Pipeline	99	9/13/2007	letter	LND	The one thing that we can not make any more of is good farm land. Once it is destroyed, we can not get it back. We must be good stewards of the land. In closing, remember once our water is contaminated and rich farm land is contaminated by a crude oil, it is gone and it is not coming back, not in our life time or the life times of our children. Oil doesn't make a very good substitute. Oil doesn't make a fertile valley. It makes a barren waste.	Comment acknowledged
734	Mary Hastings	100	9/13/2007	letter	ACK	I am very concerned about the TransCanada Keystone Pipeline	Comment acknowledged
735	Mary Hastings	100	9/13/2007	letter	PIP	An article in the Sept 9, 2007 Aberdeen American News state: TransCanada will be allowed to use "somewhat" thinner steel for this project. What is "somewhat thinner steel"? Why are they (TransCanada) being allowed to design and operate two new crude oil pipelines using a design factor and operating stress level of 80% of the steel pipes specified minimum yield strength?	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
736	Mary Hastings	100	9/13/2007	letter	RUR	Why is this just in rural areas? Is the rural population not as important as a more populated area such as a town or city?	Comment acknowledged
737	Mary Hastings	100	9/13/2007	letter	OIL	I am very worried about a leak. They say there won't be. How do they know this? They say in the event of a leak they will take care of the clean up and the land will be better than before the leak. I don't understand that.	Please refer to the discussion of spill and leak frequency in section 3.13 and see section 3.13.4.1 and Appendix C for Keystone's plans and procedures for ensuring the safety of people, infrastructure and the environment in the event of an oil spill.
738	Mary Hastings	100	9/13/2007	letter	SOI	We have a lot of moisture, which has caused bigger wetlands and potholes. Our soil is very sandy, in other words, no cover, it blows. The moisture has caused sink holes, how will they keep up with all of the problems caused by their digging?	Keystone has stated that "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices."
739	Mary Hastings	100	9/13/2007	letter	LIA	How fast will they respond to these issues?	Section 4.14.4 of Keystones' CMR (Appendix B) states that Landowners should first contact the construction spread office to express their concern over restoration and/or mitigation of environmental damages on their property. The Construction Manager, or his designated representative, shall respond to the Landowner within approximately 24 hours of receipt of the phone call.
740	Mary Hastings	100	9/13/2007	letter	RTE04	I don't want to push the pipeline off on someone else, but I didn't ask for it either. Maybe this route needs to be reconsidered.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.
741	Mary Hastings	100	9/13/2007	letter	LIA	If this pipeline does go through, no matter where, I ask whoever owns the pipeline be held accountable for any and all damages.	Keystone is obligated to respond to pipeline oil releases irrespective of the cause of the release (cite DOT???). Notwithstanding this obligation, individuals are not automatically protected from liability associated with negligent acts or willful misconduct leading to property destruction and environmental damage. Specific liability warrants and indemnifications are included within individual easement agreements and are not within the scope of the EIS.
742	Raymond Anderson	101	9/13/2007	letter	FLD	In most years and I believe every year since 1992, that piece of land has been flooded. Either in the spring we have runoff from the hills to the east of us or as a result of heavy rains later in the year. Any time there is runoff, it goes to the west to a low area that covers at least 7 miles.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
743	Raymond Anderson	101	9/13/2007	letter	WAT	It can also recede back to the east and take any contaminates back to the Crow Creek Water shelter. The Crow Creek then flows into the James River and on to the Missouri River. If there were to be a leak on this piece of land of any extent, I have no idea how much damage could be done to the rivers of South Dakota. And that in turn, damages the water systems to towns along the way.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
744	Raymond Anderson	101	9/13/2007	letter	VEG	On this piece of land, there are 30 acres of virgin prairie. I have protected that piece of ground for the almost 50 years that I have owned that quarter of land. As I am sure you all understand by now, once that virgin ground is disturbed, it is no longer virgin. There is very little virgin ground left in our area and there is getting to be less in the world all the time. It is something that needs to be protected at all costs. This pipeline lies next to this virgin prairie. If there were to be a leak of any kind, this virgin prairie would be destroyed-if not all, at least in part. How are you going to return it to its original state? Even if the pipeline goes to the quarters on either side of me, it could still be ruined because of the lay of the land.	Keystone's Construction Mitigation and Restoration Plan discusses measures that Keystone has agreed to take in order to preserve native grasslands. In addition, Keystone has committed to the following measures: Once construction is complete, disturbance in native prairie will be reclaimed to native prairie species, using native seed mixes specified by applicable state and federal agencies such that no net loss of native prairie habitat will occur; and Keystone will monitor restoration in native prairies to ensure that native species become established and to ensure no net loss of native prairie habitats.
745	Raymond Anderson	101	9/13/2007	letter	OIL	TransCanada Keystone states that they will never have a leak-or at least never until 900 or 9000 years. How is it then that there have been notices of leaks allover the world in the last few months? I am not saying that it has to be their fault. But a leak is a leak and when the damage is done, you can not fix what is unfixable. TransCanada is saying there won't be a leak for 900 or 9000 year. That is the same as my saying there won't be a lightning strike in my yard, in a box that I draw on the ground in 9000 years. It might not hit there in 900 years, but it will hit somewhere, someplace, and soon. No one knows for sure where it will happen, but it will happen!	Please refer to the discussion of spill and leak frequency in section 3.13 and see section 3.13.4.1 and Appendix C for Keystone's plans and procedures for ensuring the safety of people, infrastructure and the environment in the event of an oil spill.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
746	Raymond Anderson	101	9/13/2007	letter	ATT	I also know what animals like in South Dakota winters. They like it warm. If this pipeline is going to be 70-80 degrees all winter, the gophers are going to move there. That means the badgers are going to move there. Then the coyotes and other animals use the burrows. This pipeline will then be undermined by these burrowing animals. What happens when I run into these burrows with farm equipment after a couple of years of their digging? I can tell you what will happen. I will be either straddling the pipeline with my equipment or dug in beside it.	Some badger, prairie dog and rodent burrows occurring within the construction ROW would likely be destroyed. Badgers, prairie dogs and burrowing rodents may be attracted by the warmth generated by the pipeline especially during winter months. The heat generated by the pipeline will warm the soils within the proximity of the pipeline out to as much as 11 feet from the pipeline center at the maximum flow rate, but most changes in soil temperature would occur primarily during spring. The pipeline would generally not change soil temperatures more than a few degrees at a depth of 6 inches with soil temperatures at the surface generally unchanged. It is unlikely that the pipeline would alter distributions of rodents within a 2 mile region from the pipeline. Keystone would conduct routine inspections of the pipeline ROW after construction. Should badgers, prairie dogs or other rodents appear to be creating an unusual level of disturbance within the ROW, appropriate wildlife officials would be contacted and control measures would likely be implemented after appropriate permits were issued.
747	Raymond Anderson	101	9/13/2007	letter	LIA	Am I going to be blamed because of animals digging and a pipeline that I didn't want on my land is damaged by my doing my every day work? Who is going to repair the machinery or pay for new to replace what is no longer usable? Who is going to pay for the backhoe to dig me out? Who is going to be certain that the backhoe isn't going to accidentally hit the pipeline while getting me out? Is anyone with a backhoe going to try to help me because they could be responsible for any damage to the pipeline? If I am straddling the pipeline, a crane will have to be brought in to lift the machinery off the line. Again, who pays? Are you going to be able to make sure that TransCanada Keystone is going to get my machinery out and repaired in time for me to get my crops planted or harvested in time?	The pipeline would be buried a with a minimum depth of cover of 4 feet in most locations, thus reducing the chance of accidental pipeline damage through plowing. Keystone has stated that "In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting." These areas would then be repaired, reducing the chance of equipment getting stuck or damaged. Damage issues between the landowner and Keystone would be addressed in individual easement agreements and are not within the scope of the EIS. Liability for negligent acts or omissions would be addressed by the appropriate legal venue and are not within the scope of the EIS.
748	Raymond Anderson	101	9/13/2007	letter	SOI	These same animals that will be digging will also cause erosion when the water comes. The holes that they dig will be the spot where the water will start whirling. That will continue until there is a very large area that will be washed away. When this happens, where will TransCanada Keystone get the good black soil to replace what has been destroyed? I don't want fill from a city road that was torn up. I don't want silt from a delta someplace. I want good soil that will continue to grow good crops that I now grow.	Digging will take place as part of pipeline construction, but not operations, so there will not be repeated excavation, at least not of Keystone's doing. The proposed methodology for soil handling to reduce damage to soil productivity is addressed in Appendix B, Construction Mitigation and Reclamation plan. Easement agreements can be negotiated to include provisions for compensation in the event of decreased productivity resulting from the pipeline's presence.
749	Raymond Anderson	101	9/13/2007	letter	ERO	If this pipeline doesn't wash out when the water comes, it will serve as a dike and back the water on neighbors destroying their crops and land. Plus it will be ruining more and more of our land each and every year.	The pipe will be located underground, and so will not intercept surface runoff. If subsurface flow interception causes flooding or erosion, it may be addressed through Keystone's Integrity Management Plan (see comment 677).
750	Raymond Anderson	101	9/13/2007	letter	ATT	There are insects that can not survive our winters. They will survive along this pipeline causing another new effect on the landowners. More money will be spent on more different kinds of spray. More spray is not always better for our environment.	The heat generated by the pipeline will warm the soils within the proximity of the pipeline out to as much as 11 feet from the pipeline center at the maximum flow rate, but most changes in soil temperature would occur primarily during spring and at soil depths of 6 inches or more. The pipeline would generally not change soil temperatures more than a few degrees at a depth of 6 inches with soil temperatures at the surface generally unchanged. Soils will still freeze during the winter months.
751	Raymond Anderson	101	9/13/2007	letter	WAT	On our farm, we are able to dig a well and get water at about 23 feet. It is good, clean, pure water that our livestock thrive on. It is plentiful running at about 15 gallons per minute. We have seven wells on our farm at this time. It is cheaper to dig a new well than it is to try to pipe it from spot to spot. If this pipeline were to damage our aquifer, we would not be able to continue with our cattle operation.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
752	Raymond Anderson	101	9/13/2007	letter	VAL	Any spill affecting our water could cause to us to sell our cattle at a large loss of income to us. We could be forced into selling at the wrong time with out the weights that are needed to get the best prices.	In the unlikely event that oil escapes into the soil, containment and cleanup of the soils would be initiated immediately. Damage to groundwater is unlikely due to the low probability of a spill, Keystone's Emergency Response Plan (ERP), and the viscosity of the oil product, all of which will allow Keystone to contain, mitigate, and clean up an oil spill.
753	Raymond Anderson	101	9/13/2007	letter	WAT	It could take months to get water piped into our farm from a rural water system-·--if we could get it at all. If our water was affected, I am sure that others would be also. What are we supposed to do for water for our household? Again, where is it coming from and how long would it take to get it piped to us?	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
754	Raymond Anderson	101	9/13/2007	letter	UNA	This huge pipeline is being pushed through at an alarming pace. And yet, our operation takes several years to get permits to increase the size of our feedlot that we have been operating for about 40 years.	Comment acknowledged. No change to DEIS.
755	Raymond Anderson	101	9/13/2007	letter	VAL	we all know that land with a pipeline would not have the same value as one without the pipeline. If I ever chose to sell my land, that quarter would be worth far less than my other land. When nothing grows over these pipes, my renter is not going to want to pay full price for these acres.	DEIS text amended to reflect the fact that studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
756	Raymond Anderson	101	9/13/2007	letter	VAL	The heat from the pipe and disturbing the soil will impact the value that he receives.	Studies have shown that pipelines do not reduce overall property values. However, Keystone will negotiate with individual landowners regarding the potential effects of a pipeline easement on private property values or property income. Construction of the project would not change the general use of the land, but would preclude construction of aboveground structures on the permanent right of way, restrict excavation or alteration of ground elevation, and restrict impoundment of water above the permanent right of way. The value of agricultural land should not be affected by the pipeline project because Keystone will restore the land to its pre-project productivity.
757	Raymond Anderson	101	9/13/2007	letter	LND	If this pipeline crosses 220 miles through South Dakota, you will be taking approximately 6160 acres of good land, whether farmland or pasture land, and making it far less productive than it was before. It will never be the same.	Comment acknowledge; no changed to DEIS.
758	Raymond Anderson	101	9/13/2007	letter	ACK	When there is no more farmland that is productive because you have let it all be dug up, where are your children and their children going to get food to eat? There is no more land. Once what we have is destroyed by greed and indifference, everyone will be asking why you let this happen.	Comment acknowledged. Mitigation measures and permit requirements will reduce impacts to farmland and will return farmed areas to previous productivity.
759	Richard Hastings	102	9/13/2007	letter	ACK	I am not completely for this pipeline	Comment acknowledged
760	Richard Hastings	102	9/13/2007	letter	OIL	My biggest concern is the event of a leak or major spill. If a large area is contaminated from a spill in my area it will have an enormous effect on the crop growing part of my farm. It will also have an effect on the cattle part also because this is where a good part of where my winter feed comes from.	Keystone has stated that "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." If productivity suffers due to pipeline construction or operation, that productivity loss should be compensated for, assuming that such a provision is written into the easement agreements.
761	Richard Hastings	102	9/13/2007	letter	LND	If the soil and water are contaminated where will he new soil and water come from?	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
762	Richard Hastings	102	9/13/2007	letter	VAL	What will my ground be worth if it is contaminated?	See Section 3.13.5.2, "Soils and Sediments." The impacts of oil spills on soil depends on the type of oil, permeability of the soil, vegetative and other surface cover, and release point. Crude and other heavy oils are less likely to penetrate surface soil layers than refined oils. The depth of penetration depends on the viscosity of the oil, porosity of the soil, and temperature and soil saturation conditions. As noted in Section 3.13.5.8 essentially all spills would be confined to construction and maintenance pads, roads, facility sites, or the immediate vicinity of the pipeline ROW. Any crop losses resulting from a spill would be reimbursed by Keystone. As noted in section 3.13.6, measures too minimize fuel spills would be implemented at each construction or staging area .
763	Richard Hastings	102	9/13/2007	letter	LIA	Hopefully they will pay for the next generations production and not just the going rate for farm land.	The financial terms of the easement agreement are negotiated between the landowner and Keystone and are not an issue addressed under NEPA.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
764	Richard Hastings	102	9/13/2007	letter	PIP	Another concern is the abandoning in place. From what I have found out is that sometimes when and easement for something is abandoned the land goes back to the adjoining land owner. Does this mean the land owner now owns the pipe and is responsible for any leftover product? when it rusts away and the pipe caves in we are responsible for filling in the void left behind.	Issues surrounding landowner liability for pipeline equipment and materials would be covered in the easement agreement between the landowner and Keystone and is not issue addressed under NEPA.
765	Richard Hastings	102	9/13/2007	letter	CME01	If they want to put in another pipeline along the side someday all they have to do is go through the same process again.	Cumulative effects of additional pipelines and linear projects are discussed in Section 3.14. Any other pipelines would need to follow the permitting process for that particular project and would also be subject to environmental review under NEPA.
766	Tom Hofer	103	9/13/2007	letter	PIP	It came out the other day about a waver that was granted by the Hazardous Materials Safety Administration to request a lower stress factor in the pipeline in the rural areas. I think the Hazardous Materials Safety Administration has it backwards. The thinner steel pipe should be in the populated areas to better detect a leak.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
767	Tom Hofer	103	9/13/2007	letter	PIP	It is being proven over and over again how little value is put on rural people. Rural people are the people who made this country and now the United States is being basically given to the foreign companies by the Bush administration. I think my life as a farmer is just as important as a city dweller but it could not be any plainer that to the Hazardous Materials Safety Administration and to the EPA that it is not. Through the wavier to use thinner pipe in the country is proof positive beyond a shadow of a doubt that rural people mean nothing.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
768	Tom Hofer	103	9/13/2007	letter	OIL	What are the aquifers worth when the Canadian crude leaks into them? Trans-Canada used the phrase several time, in the unlikely event of an oil spill. Some people say the pipeline will never leak.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
769	Tom Hofer	103	9/13/2007	letter	LND	Land that has oil spilled on it cannot be replaced in 2 years or ever. It will be a done deal. Hopefully a spill won't kill anyone other than the wildlife.	Comment acknowledged
770	Tom Hofer	103	9/13/2007	letter	TAX02	If South Dakota is doing this for tax money I would like to know how that will benefit me directly.	The Keystone Project will generate new tax revenues for the counties through which it passes. The increases should enable the recipient counties to maintain existing services or add new services, which are for the benefit of all residents in a county. Some residents may benefit more than others from the increases because of their location, specific government services used, and other factors. No change to DEIS.
771	Tom Hofer	103	9/13/2007	letter	SOI	Will it be through the crops on top of the pipeline dying year after year due to the pipeline heat? I was told by trans-Canada the area above the pipeline will thaw much sooner than the rest of the ground. That means when I plant winter wheat I'll have a weed patch through the field over the pipeline. That won't happen just the first year or two, but every year. You can't tell me the crops won't dry out faster in the summer over that pipeline.	The effect of elevated soil temperatures on productivity adjacent to the pipeline is not certain, and changes in productivity are likely to be affected by other factors as well, so even after the pipeline is in place it may be impossible to isolate the productivity-enhancing or decreasing effect of soil temperature increases from other effects related to the pipeline or other factors. In any case, from Keystone general comments on DEIS: "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation" so if there is a decrease, Keystone will have to repair, mitigate, or compensate for it.
772	Tom Hofer	103	9/13/2007	letter	PIP	Now they are granted a wavier that allows them to use cheaper steel.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
773	Ryan Hastings	104	9/13/2007	letter	OIL	The pipeline is going diagonally across two of our quarters and just across the road from another. So if the pipe should leak it could jeopardize three quarters that we farm out of six total quarters.	Keystone has stated that "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." If productivity suffers due to pipeline construction or operation, that productivity loss should be compensated for, assuming that such a provision is written into the easement agreements.
774	Ryan Hastings	104	9/13/2007	letter	VAL	If we lost the quarters, what would we do for a living?	See Section 3.13.5.2, "Soils and Sediments." The impacts of oil spills on soil depends on the type of oil, permeability of the soil, vegetative and other surface cover, and release point. Crude and other heavy oils are less likely to penetrate surface soil layers than refined oils. The depth of penetration depends on the viscosity of the oil, porosity of the soil, and temperature and soil saturation conditions. As noted in Section 3.13.5.8 essentially all spills would be confined to construction and maintenance pads, roads, facility sites, or the immediate vicinity of the pipeline ROW. Any crop losses resulting from a spill would be reimbursed by Keystone. As noted in section 3.13.6, measures too minimize fuel spills would be implemented at each construction or staging area .
775	Ryan Hastings	104	9/13/2007	letter	ACK	If there was a leak we surely couldn't afford to buy more land if ours was contaminated.	Comment acknowledged.
776	Ryan Hastings	104	9/13/2007	letter	UNE	Its only 2% of the oil our nation uses in one day 2%!	Comment acknowledged.
777	Ryan Hastings	104	9/13/2007	letter	ENR	If you want to lessen the pressure on foreign oil, produce ore ethanol, a friendly source of fuel that benefits rural communities, farmers, cattle producers, and makes for cleaner air.	Alternative energy sources including biofuels and wind power would be appropriately considered in the broader context of federal energy policy. None of these alternatives, however, would meet the purpose and need of this proposed action, which is to supply an additional amount of dependable Canadian oil to U.S. markets in the immediate future. Whether the oil transported by the Keystone pipeline is seen as replacement for less dependable sources overseas, or as additional oil to meet increased market demand, it is clear that petroleum will play a major role in the nation's growing economy, and that pipelines will be necessary to transport such resources.
778	Ryan Hastings	104	9/13/2007	letter	PIP	If you do decide to let the pipeline go through I hope you set some tough guidelines like making them use the thicker walled pipe rather than the thin walled they just announced.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
779	Ryan Hastings	104	9/13/2007	letter	LIA	Make them pay for crop losses until there are no signs of crop loss.	Landowner compensation for damages would be covered in the easement agreement between the landowner and Keystone and is not issue addressed under NEPA.
780	Ryan Hastings	104	9/13/2007	letter	SOI	I know of a spot where we took the topsoil off, removed the clay and put the top soil back on top and ten years ago and still shows crop loss.	Keystone has stated that "Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation." If productivity suffers due to interference with irrigation systems, that productivity loss should be compensated for, assuming that such a provision is written into the easement agreements.
781	Ryan Hastings	104	9/13/2007	letter	RTE04	I don't like the idea of it and I am against it 100%.	Comment acknowledged.
782	Ryan Hastings	104	9/13/2007	letter	TAX01	Think of the people not the tax dollars.	Comment acknowledged.
783	Ryan Hastings	104	9/13/2007	letter	RTE03	If you want the tax dollars then you should put it down the interstate	Location of the pipeline adjacent to major highway right-of-ways is not desirable either during the construction or operation phase of a pipeline. During construction conflicts with roadway use and other buried utilities and land uses that cluster near roadways may occur. During operation impacts to the pipeline may occur during construction of other facilities that commonly occur along interstate highways. Construction impacts are the leading cause of pipeline spills.
784	Ryan Hastings	104	9/13/2007	letter	TAX02	If you let it go through will our taxes go down? No. Will we get the tax dollars back? No. The bigger towns will see most of the money so let them have the burden.	The Keystone Project will generate new tax revenues for the counties through which it passes. The increases should enable the recipient counties to maintain existing services or add new services, which are for the benefit of all residents in a county. Some residents may benefit more than others from the increases because of their location, specific government services used, and other factors. No change to dies.
785	Ryan Hastings	104	9/13/2007	letter	ACK	I also heard that TransCanada only owns 51.1 % of this pipeline and Conoco owns %48.9. I guarantee that this pipeline will not be a common carrier in the near future after it is built.	Comment acknowledged.
786	Ryan Hastings	104	9/13/2007	letter	WAT	What if something happens like a leak because in our area there are many cities that get water trough BDM Rural Water from the aquifer the is eight feet below ground level.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
787	Ryan Hastings	104	9/13/2007	letter	ACK	I am tired of all the threats and lies.	Comment acknowledged; no change to DEIS.
788	Pam Hofer	105	9/12/2007	letter	PIP	I am very afraid of the dangers. Now with thinner pipeline its worse yet.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
789	Pam Hofer	105	9/12/2007	letter	HYP	Why is TransCanada saying they had no knowledge of the refinery at Elk Point that is proposed to be built?	At this time, the Hyperion refinery concept is not a specific regulatory proposal and the Elk Point, SD location has not been definitively identified as the site for a possible refinery. Thus the Hyperion refinery concept is uncertain and speculative, and does not constitute a "connected action." The Keystone project would not trigger or depend on the Hyperion concept and Keystone will proceed regardless of whether a Hyperion project ever occurs. Keystone does not plan a spur to the potential refinery site as part of this action. Conversely, a future Hyperion project would not depend on the Keystone project. Hyperion is not a Keystone customer and the majority of the Keystone pipeline's capacity is already committed to other shippers.
790	Pam Hofer	105	9/12/2007	letter	RTE03	A civil Engineer from Marion said that the I-29 route would not be good it would be too dangerous and costly. Costs should be the same but it looks like our lives as farmers are not important to him or even TransCanada.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Generally, routing along roadways would cause the pipeline to intersect more areas of development or potential development.
791	Pam Hofer	105	9/12/2007	letter	PIP	How could TransCanada a foreign country get a waiver from the federal pipeline and hazardous Materials safety Administration to make a thinner pipe to transport the crude oil? We are very worried with the pipe at 80%	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
792	Pam Hofer	105	9/12/2007	letter	VAL	There will be leaks its just the question how quick. Whit a leak we'll lose our best quarter of land who have to farm.	See Section 3.13.5.2, "Soils and Sediments." The impacts of oil spills on soil depends on the type of oil, permeability of the soil, vegetative and other surface cover, and release point. Crude and other heavy oils are less likely to penetrate surface soil layers than refined oils. The depth of penetration depends on the viscosity of the oil, porosity of the soil, and temperature and soil saturation conditions. As noted in Section 3.13.5.8 essentially all spills would be confined to construction and maintenance pads, roads, facility sites, or the immediate vicinity of the pipeline ROW. Any crop losses resulting from a spill would be reimbursed by Keystone. As noted in section 3.13.6, measures to minimize fuel spills would be implemented at each construction or staging area .
793	Pam Hofer	105	9/12/2007	letter	WAT	The seeping will follow our low places right to the creek just a little ways away in the pasture next to the pipeline. This is our water supply for our livestock. We have a dam there it is spring fed and is full of water all year around with back up in the creek. The water table is very high there. Where will our water supply come from after they spill. It will happen!	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
794	Pam Hofer	105	9/12/2007	letter	EXP	TransCanada has no pipeline like this crude oil in operation so they do not know and do not want to admit how dangerous it will be.	Keystone does not at present operate crude oil pipelines. The data used to analyze oil spill risk in the FEIS are based on leaks from al crude oil pipelines regardless of the owner/operator of the pipelines, l including many that have been in operation for years to decades. Older pipelines may not have been constructed to current standards, maintenance procedures may not have been as stringent as current ones, and therefore failure rates are more likely to occur in these older pipelines. The proposed Keystone pipeline would be built to current standards which have resulted in a steady decrease in the number and size of spills in the last few years. For discussions of the risks associated with the proposed pipeline, see Section 3.13 of EIS and Appendix L.
795	Pam Hofer	105	9/12/2007	letter	EDT	PS-21 pg 3.12-16 Impact Statement. Another lie they have made is in the 1st articles and meetings they said there are 3 structures within a mile of Carpenter Pumping station. Then I brought this up in a meeting in Clark and now in the Impact Statement it says 6 structures. The first 3 they counted were a old garage about 2 block away, then another block further the outhouse and the lunch stand shack for the park-ball field, well house. About 1/2 block away is the Madesns cattle sorting area and structure. So that's five structures	Comments acknowledged. Location of PS-21 has moved about 2 miles. A new survey was conducted and is reflected in Table 3.12.2-1.
796	Pam Hofer	105	9/12/2007	letter	EDT	So now I will tell you what is in the town of Carpenter: 9 structures at wheat growers, one post office, Carpenter county store and gas station, old café, new café and community hall, storage shed, A. Wicks house, Walter house, mobile home and shed, Brede home an garages, Pearl Wicks house and garage, M. Opsahl home and shed, Pa and Mas house, G. Wick house and garage, T. Opeshahl house and garage, M Wick house and garage and shed, L.Butinez house and garage, P. Haverson house, H. Jacks house Quonset and garage, United Methodist Church. So this adds up to 49 structures!	Comments acknowledged. Location of PS-21 has moved about 2 miles. A new survey was conducted and is reflected in Table 3.12.2-1.
797	Pam Hofer	105	9/12/2007	letter	EDT	Then a little further north about 1 block is: R. Opsahl home and garage, and about 25 blgs associated with our grandparents house and farm. Bow a grandson and family lives there. Total 76 structures, 9 people living here and 12 employees. I believe these will all be within 1 mile cross country of the pumping station.	Comments acknowledged. Location of PS-21 has moved about 2 miles. A new survey was conducted and is reflected in Table 3.12.2-1.
798	Pam Hofer	105	9/12/2007	letter	EDT	Map figure 2.1-11 on project overview they did not put the town of Carpenter on the map. I'm sure it looks better to them not to be truthful and put a town right by a pumping station	Comment acknowledged. Carpenter will be located on the figure as requested.
799	Pam Hofer	105	9/12/2007	letter	NOI02	In a meeting we were at TransCanada said the decibels at the station being given off for sound was 35 dB, It would be like a truck on the interstate. This flyer from Drs office says that it would be 90 dB. Most experts agree that more than 85 dB is dangerous (Note article attached to comments shows lawnmower, shop tolls and truck traffic as 90 dB)	Location of PS-21 has moved about 2 miles. The distance to the nearest noise sensitive area is now 3,300 feet (no residences are within 1/2 mile). It is estimated that that pump station will produce approximately 38 dBA at 3,300 feet - a slight increase in the existing sound level of 35 dBA. This is well under the standard of 55 dBA (outdoors). Generally, a 3 dBA change is considered a just-perceivable difference by humans with a change in level of at least 5 dBA required before any noticeable change in human response would be expected. Therefore, a less than significant impact would be expected at 3,300 feet. Although a pump station at this distance is not expected to exceed 55 dBA (regulatory level - at which point Keystone will implement noise mitigation measures), we have added a recommendation that Keystone implement noise mitigation measures (such as berms or vegetation) when the noise levels increase 10 dBA or more above existing ambient levels. See Section 3.12.2.3.
800	R. Starke	106	9/12/2007	letter	ACK	Attached is information on the Proline Global website regarding leaks and spills on the ALYESKA PIPELINE. TransCanada claims no leaks in 9,000 years. This REAL pipeline had REAL LEAKS, totaling 1,360,248 gallons with leaks EVERY YEAR from1917 to 2002. (see the bottom of the page). Note that the operating pressure is onlyl1,180 psi. TransCanada Keystone will be 1,400 psi at 435,000 barrels and 1,700 psi at 590,000 barrels.	The two really cannot be compared. Also, the gallons reported spilled in the documentation supporting the comment includes oil spilled from the Exxon Valdez and Point Thomson tankers and oil spilled due to sabotage and shooting of the pipeline. These are not normal leaks associated with a buried crude oil pipeline.
801	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The Water Resource portions of the DEIS fail to recognize or provide a level of chemical analysis commensurate with the importance of the Sheyenne River and Lake Ashtabula as water supply resources. The Sheyenne River and Lake Ashtabula are the source of drinking water for the city of Fargo, and hence are high consequence or sensitive area (HCA).	Construction impacts, if any, to the Sheyenne River would involve the effects of increased short term turbidity. Fueling and storage of fuels would be in upland areas over 100 feet from the active channel perimeter (Section 2.2.2.3). Risks associated with potential spills or releases are discussed in Section 3.13. Appendix K provides information on impaired water bodies along the proposed pipeline corridor. These data are sufficient to allow an assessment of the potential impacts of pipeline construction and operation in the area of the Sheyenne River. DOS understands that the Sheyenne River and Lake Ashtabula are secondary backup water sources for Fargo. DOS understands that Keystone is assessing the feasibility of an HDD crossing for the Sheyenne River, and Keystone reports that they would use the HDD method for this crossing if it is deemed technically feasible..
802	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The Sheyenne River crossing is not identified at page 3.3-26 of the DEIS as a site where the HDD method of crossing, a less disruptive method of construction, would be used. Table 3.5-3 in Appendix K of the DEIS lists as the Designated Use of the Sheyenne River only "Recreation."	DOS is informed that Keystone is assessing the feasibility of an HDD crossing at the Sheyenne River, and if deemed technically feasible, they will use the HDD method at this crossing. DOS understands the sources described are secondary backup water sources for the city.
803	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The DEIS states at page 3.3-27 that "Keystone should in no case use the open-cut wet crossing method to cross ... water bodies upstream of HCAs ..." An assurance made for aesthetic reasons does not carry the force of a requirement made for public health purposes.	DOS is informed that Keystone is assessing the feasibility of an HDD crossing at the Sheyenne River, and if deemed technically feasible, they will use the HDD method at this crossing. DOS understands the sources described are secondary backup water sources for the city.
804	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The list of References supplied at page 3.3-30 of the DEIS does not reveal any information concerning the Sheyenne as a potable surface water source, whether for municipalities on the pipeline route, or municipalities at some distance from the pipeline, such as Fargo.	DOS understands the sources described are secondary backup water sources for the city.
805	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The proposed crude petroleum pipeline route traverses many of the sloughs, coulees, tributaries, and waterways leading directly to Lake Ashtabula and the Sheyenne River below Lake Ashtabula. The DEIS fails to consider the immediacy by which contaminates resulting from a failure will enter the water supply because the pipeline traverses these sloughs, coulees, tributaries, and waterways. Spills are likely to result in the immediate introduction of crude petroleum contaminates into these water resources that are the water supply for the city of Fargo and other North Dakota communities. Technical analysis presented within the DEIS should explicitly analyze the increased risk of failure and the exceedance of drinking water standards for these coulees, tributaries, and waterways.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
806	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	Keystone did not identify the Sheyenne River and Lake Ashtabula as high-consequence areas by reason of their role in Fargo's water supply.	The identification of High Consequence Areas (HCA) for oil pipelines is part of the Pipeline Integrity Management program required under 49 CFR Part 195 (65 FR 75378 et seq) that Keystone would need to prepare and submit to OPS prior to the initiation of pipeline operations. HCAs are not a requirement of NEPA.
807	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	OIL	Rather than a stochastic analysis, TransCanada Keystone's document "Pipeline Risk Assessment and Environmental Consequence Analysis" uses a deterministic risk assessment approach, which fails to adequately characterize the range of failure risks and spill volume. The deterministic approach fails to consider the inherent uncertainty in the parameters used to estimate risk (e.g., spill frequency and volume, historical probability of failure) and consequently is inadequate to establish the probability of failure.	The deterministic approach provided in the EIS is appropriate and uses as its baseline data statistics addressing pipeline leaks and failures from all causes and all spill volumes in a wide variety of environmental and geographic conditions. No change in EIS is required.
808	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	OIL	The likelihood and volume of a spill event is based upon historic pipeline failure information. The probability of a pipeline failure and the volume released is based on a relatively short amount of observational record. Additional analyses exploring a greater range of probabilities is warranted to more exhaustively define risk of failure.	The deterministic approach provided in the EIS is appropriate and uses as its baseline data statistics addressing pipeline leaks and failures from all causes and all spill volumes in a wide variety of environmental and geographic conditions. No change in EIS is required.
809	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	OIL	Similarly, the risk analysis used by TransCanada Keystone assumed an equal chance of failure along each portion of the crude petroleum pipeline route regardless of the subsurface conditions, proximity to geologic hazards, soil conditions, or the presence of surface waters. The likelihood of failure should be based upon the proportion of geologic and other conditions that reflect actual design and construction. The risk of failure will in fact vary along the pipeline depending upon these conditions. Specific conditions near Fargo's water supplies have not been analyzed.	The deterministic approach provided in the EIS is appropriate and uses as its baseline data statistics addressing pipeline leaks and failures from all causes and all spill volumes in a wide variety of environmental and geographic conditions. No change in EIS is required.
810	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	OIL	Information about the length of the time that will actually be necessary to respond to a spill is lacking; therefore, there is no reasonable way to understand the true risk of potential contamination to surface and ground water resources. Based upon this information it is imperative that additional design measures be developed and the route reevaluated, to ensure sufficient response time to protect the water supply for the city of Fargo and other North Dakota communities.	Please refer to the discussion of spill and leak frequency in section 3.13 and see section 3.13.4.1 and Appendix C for Keystone's plans and procedures for ensuring the safety of people, infrastructure and the environment in the event of an oil spill. No change in EIS is required.
811	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	OIL	Fargo believes the requested minimal number of valves falls short of a safe design, and is representative of the need for additional review of the design plans and specifications. These valves should specifically be placed at key locations as the pipeline traverses the eastern side of Lake Ashtabula and crosses coulees, tributaries, and waterways	Comment acknowledged.
812	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	PIP	TransCanada Keystone filed a petition with the USDOT, Pipeline and Hazardous Materials Safety Administration on November 17, 2006, revised April 10, 2007, for a Special Permit to construct its crude petroleum pipeline at design pressures up to 80 per cent of the specified minimum yield strength. Fargo's preliminary investigations reveal there are no existing operating liquid petroleum pipelines presently in the U.S. that would meet such pressure standards. Accordingly, the Department of State should recommend additional conditions that would prudently address and mitigate the increased risks to water supply associated with operations at the requested unusually high pressures.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
813	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	VEG	The proposed construction plans call for clear-cutting a path eighty-five feet wide throughout the length of the crude petroleum pipeline. A clear cut of this width through the forested areas adjacent to the Sheyenne River Basin will increase runoff, sediment, and pollutant loadings into the Basin. The EIS should include recommendations for alternatives to this clear cutting or methods for minimizing impact or both.	Measures to protect shelterbelts during construction are discussed in Section 3.5.5.2 and Section 3. Keystone has committed to the following measure: •The construction ROW at timber shelterbelts in agricultural areas shall be reduced to the minimum necessary to construct the pipeline. Facility siting may be adjusted to avoid disturbance to shelterbelts, however, it is estimated that approximately 1,110 acres of forested habitats would be removed by construction of the Keystone project. Please refer to Appendix B, CMR Plan for mitigation measures already committed to by Keystone. The CMR would be revised to include additional provisions committed to by Keystone as a result of the EIS and follow on permitting process. Revisions would be required prior to issuance of final permits.
814	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	OIL	The DEIS fails to adequately describe the chemical composition of the materials to be transported in the pipeline. The document is written in respect to typical crude oils. Upgraded tar sands can differ substantially from typical crude oils. For example, typical tar sands contain high amounts of naphthenic acids, a highly soluble and toxic material which is very difficult to remove from a water source. The specific chemical and physical nature of the product must be known before any conclusion is made regarding risk and environmental consequences.	Comment acknowledged. Please refer to the discussion of spill and leak frequency in section 3.13 and see section 3.13.4.1 and Appendix C for Keystone's plans and procedures for ensuring the safety of people, infrastructure and the environment in the event of an oil spill.
815	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	MOR	The Socioeconomic portion of the DEIS, Section 10, does not discuss the impact of potential contamination of the water supply of Fargo or any other city in North Dakota or Minnesota off the pipeline route which depends on the Sheyenne River for any or all of its water supply.	Refer to Section 3.13.5.9 for discussion of socioeconomic impacts from oil releases.
816	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	MOR	The Socioeconomic subsection of the Reliability and Safety portion, Subsection 3.13.5.9, states without specific reference to any area of the pipeline that oil spills may affect, among other things, water intakes and water supplies, and declares the risk to populations and HCAs along the Project to be negligible. However, Fargo's water intake was not identified as an HCA.	The identification of High Consequence Areas (HCA) for oil pipelines is part of the Pipeline Integrity Management program required under 49 CFR Part 195 (65 FR 75378 et seq) that Keystone would need to prepare and submit to OPS prior to the initiation of pipeline operations. HCAs are not a requirement of NEPA.
817	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	While the National Energy Board of Canada has approved the pipeline project, it seems unlikely to have been aware of the potential for pipeline material to reach Hudson Bay, given that TransCanada Keystone has not heretofore identified the risk to drinking water supplies or the planned interconnection between the Sheyenne and Red Rivers. Canada has previously expressed intense concerns about any environmental impacts on the Red River of the North.	This EIS addresses potential impacts within the United States, from the Canadian border crossing to Illinois for the proposed Mainline Project and from southern Nebraska to Oklahoma for the proposed Cushing Extension.
818	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The human use of water intake in reservoirs and large rivers is the use most perceived sensitivity to an oil spill, DEIS, p. 3.13.-12. Potential consequences to Fargo need to be addressed before the DEIS is made final	Section 3.13 identifies that oil releases that reach public water supplies would lead to impacts, irrespective of the water supply that is affected. No change to EIS necessary.
819	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The bulk of the population of North Dakota is in the eastern third of the State. The Keystone Pipeline for transporting crude petroleum presents potential public health and safety risks that may adversely affect the welfare of a substantial number, even a majority, of the citizens of North Dakota due to undesirable impacts upon the water supply of the city of Fargo and other North Dakota communities who will rely on water resources that either arise in or flow through Lake Ashtabula and the Sheyenne River Basin, both now and in the future. This is not reflected in the DEIS.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
820	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	NOT	The city of Fargo did not receive direct notice of these proceedings. Scoping meetings for the EIS were held in Lisbon, North Dakota, some 75 miles from Fargo, and Michigan, North Dakota, 129 miles away. Public Comment sessions were scheduled in Valley City and Park River, 62 miles and 139 miles from Fargo, respectively.	Scoping meetings were advertised in relevant local papers and in the Federal Register. Availability of the DEIS and comment period notification was also published in the Federal Register on August 10, 2007. Under NEPA requirements, adequate notice was given to all potential stakeholders.
821	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	WAT	The map supplied by TransCanada itself on its website, located at http://www.transcanada.com!k.eystone/maps/northdakota.pdf. renders water features in eastern North Dakota nearly invisible.	Comment acknowledged. No change to EIS required.
822	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	NOT	Publicity was minimal in Fargo. Editorial and letter-to-the-editor comment in September did not mention the DEIS or comment deadlines and focused on aesthetic concerns. Only in October 2007 was there substantive news coverage that made the stakes clear.	Scoping meetings were advertised in relevant local papers and in the Federal Register. Availability of the DEIS and comment period notification was also published in the Federal Register on August 10, 2007. Under NEPA requirements, adequate notice was given to all potential stakeholders.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
823	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	ALT	The range of alternatives analyzed and those subject to additional detailed analysis within the DEIS are inconsistent with the stated project purpose and need. For example, Section 4.2.2 New Pipeline System Alternatives-Enbridge Projects implies that the Enbridge pipelines were eliminated for reasons other than the ability to transport incremental crude oil (i.e.. the purpose) and serve the needs identified by the DEIS. The DEIS intimates that the reasons for eliminating these alternatives from additional detailed analysis pertain to a less direct route to the Cushing refineries, the need for additional miles of pipeline and the likely additional impact to resources. None of these reasons are stated as needs for the proposed project (e.g.~ to minimize the amount of pipe).	The Enbridge projects are not considered alternatives to the Keystone Project in that the demand for crude oil resources in the Midwestern US exceeds the capacity of either the Keystone Project or the Enbridge Projects individually.
824	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	ALT	...the DEIS presents several major route alternatives capable of achieving the stated project purpose and needs which were eliminated from additional detailed analysis. The DEIS implies the Iowa Route Alternative was eliminated from further consideration because of the inability to efficiently deliver crude oil to Cushing, Oklahoma, and this fails to meet purpose and need. Similarly, the Direct Alternative is apparently eliminated from further consideration because of greater disruption to land uses even though capable of meeting the stated needs within the DEIS.	Comment acknowledged, no change in EIS required.
825	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	ALT	The DEIS acknowledges avoiding public water supplies as a valid concern for varying the route. The DEIS specifically acknowledges that the Seward Route Variation resulted from the desire to avoid having the pipeline pass near the city's water supply well yields. The DEIS should include similar consideration for the city of Fargo and other potable water supplies within North Dakota.	The proposed pipeline corridor crosses many water bodies, watersheds, and crosses over many underlying aquifer systems throughout its length. Avoidance of all potential water supplies is impractical. The Seward Route Variation is a specific issue that involves several environmental factors, including nearness to well fields, water mains, wetlands, and floodplains.
826	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	ALT	Other means are available for transporting crude oil, including barge, rail, tanker, and truck. The DEIS should at least describe why these alternatives, which are capable of achieving project purpose, were not considered.	NEPA requires that the lead agency evaluate reasonable alternatives to the proposed action. The purpose of the project is to deliver between 435,000 and 591,000 barrels per day of WSCB crude oil to market through Wood River and Patoka Illinois and Cushing Oklahoma. DOS does not consider these methods to be reasonable alternatives for the purpose of delivery of this quantity of crude oil to these locations.
827	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	CME01	The cumulative impact analysis is inadequate, because it fails to establish the proper context for the environmental consequences of the proposed action. The DEIS must identify existing and reasonably foreseeable pipeline projects, their alignments and their throughput and present the environmental impacts within the context of historical and future resource losses (e.g.~ acres of wetland historically lost within the U.S. and future potential1osses based upon historical trends) and the need for additional future crude oil transport capacity.	The cumulative impact analysis included in Section 3.14 of the DEIS identifies existing and reasonably foreseeable projects of regional extent that could taken together have cumulative impacts. These projects have been analyzed with respect to relevant environmental resources and the potential for short-term and long-term cumulative effects to those resources have been described.
828	P.A. Madsen Duncan, Ostrander & Dingess for City of Fargo	107	11/5/2007	letter	ACK	Fargo respectfully requests the Department of State: (I) Address the matters set forth in this Preliminary Statement of Concerns in the final EIS; (2) Afford the city of Fargo time to prepare a more detailed technical analysis of its concerns and tender the same to the Department; and (3) Not issue the final EIS until Fargo's more detailed technical analysis has been submitted and its contents addressed.	DOS received Fargo's letter of concern over a month after the official close of the comment period. DOS received Fargo's detailed comments over two months after the official close of the comment period. Nonetheless, DOS is responding to Fargo's comments herein. The schedule of the FEIS is not affected by these comments.
829	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	ACK	As such, we are very concerned about any project that may impact the waters in North Dakota. We realize that the comment period on the Environmental Impact Statement for the Keystone Pipeline project has passed, but a major issue must be addressed if this project is to move forward. We want to make it clear that we are not opposed to -the project, but that water supplies in North Dakota are scarce and need to be protected.	DOS received Fargo's letter of concern over a month after the official close of the comment period. DOS received Fargo's detailed comments over two months after the official close of the comment period. Nonetheless, DOS is responding to Fargo's comments herein. The schedule of the FEIS is not affected by these comments.
830	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	WAT	We are very concerned that the EIS did not recognize the importance of the Sheyenne River and Lake Ashtabula as a water supply for the municipal water systems of Valley City, Fargo, Grand Forks; Grafton and Drayton.	Please see responses to comments 4, 8, 39, 805, and 806.
831	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	WAT	page 3.3-15 of the executive summary states that the municipal water supplies along the proposed right of way are primarily ground water. In fact, the majority of the municipal water supply in the region is surface waters and during drought periods, the Sheyenne River and Lake Ashtabula become the sole source for North Dakota's largest city, Fargo.	DOS understands that while some surface water sources are used, the majority of sources along the entire 1300 mile length of the pipeline are groundwater aquifers. in addition the surface water sources described are secondary backup water sources for the cities described. Please see responses to comments 4, 8, 39, 805, and 806.
832	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	WAT	The Keystone Pipeline EIS did not recognize that the current permitted use of Lake Ashtabula is a water supply for the cities of Valley City, Lisbon, West Fargo, Fargo and Grand Forks.	Please see responses to comments 4, 8, 39, 805, and 806.
833	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	OIL	According to the Pipeline Risk Assessment and Environmental Consequence Analysis page 4-7, a small spill of 50 barrels introduced into a stream of 100 cubic feet per second could cause benzene levels to be 1.1 ppm, which is 220 times the drinking water maximum contaminant level of 0.005 ppm.	Comment acknowledged.
834	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	WAT	If this event were to go undetected for several days, the city may be forced to discontinue using the water source until the contamination could pass the city's intake. The intake is located approximately 15 days down stream of the proposed crossing. So if Fargo happened to detect the contamination, the city could be without water for at least 15 days while the contamination passed.	Comment acknowledged.
835	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	WAT	It is our opinion that the Sheyenne River crossing should be completed using the horizontal boring method to reduce. the risk of washout events and large spills	DOS is informed that Keystone is assessing the feasibility of an HDD crossing at the Sheyenne River, and if deemed technically feasible, they will use the HDD method at this crossing. DOS understands the sources described are secondary backup water sources for the city.
836	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	PIP	the pipe wall thickness should be evaluated to reduce the risk of leaks due to over pressurization because of operational errors.	In issuing the Special Permit, PHMSA found that it "will provide a level of safety equal to or greater than that which would be provided if the pipelines were operated under existing regulations." The Special Permit contains 51 conditions that Keystone must comply with. Failure to comply with any condition may result in revocation of the Special Permit. In addition, the Special Permit is not applicable to certain sensitive areas including commercially navigable high consequence areas, high population high consequence areas, highway, railroad and road crossings, and pipeline located within pump stations, mainline valve assemblies, pigging facilities, and measurement facilities. See Section 2.0 of the FEIS for additional discussion of the waiver.
837	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	OIL	Also, the operation plans should consider frequent visual monitoring, and the design of a leak detection system in this area should be accurate enough to ensure that a leak which would exceed the maximum contamination level for benzene when the river is running at 50 cubic feet pet second would be detected in hours.	During operations, Keystone would regularly monitor the pipeline both electronically and through aerial and ambulatory pipeline integrity surveys at a frequency consistent with 49 CFR Part 195 (Section 2.3.1). Keystone will use a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be followed, as described in Appendix C. Response actions may include placement or construction of berms and/or trenches to contain the spill prior to entry into a water body, and deployment of booms, skimmers, and sorbent materials. The spilled or leaked oil product will be recovered and the contaminated area will be cleaned up in consultation with spill response specialists and appropriate government agencies. Following successful emergency response, appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment.
838	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	ERP	Finally; the Emergency Response Plan should contain local qualified personnel who could manually shut down the pipeline within one day, in addition to the remote shut down capabilities described in the existing documents.	Keystone's draft Emergency Response Plan provides the Operations Control Center (OCC) full authority to shutdown the pipeline and proceed with pipeline segment isolation in the area of the leak. The check valves that occur on the downstream side of river crossings automatically shut down when an upstream pressure drop is sensed. The OCC can designate any qualified Keystone field employee as a First Responder in order to mitigate the early impacts of the spill. The First Responder is required to immediately respond to and investigate the suspected location. The First Responder serves as the Emergency Site Manager until relieved of this task by the assigned Emergency Site Manager. Keystone would submit a final Emergency Response Plan for review and approval to OPS prior to receiving authorization to commence operations of the pipeline system.
839	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	WAT	Therefore, an event like this, during times of drought, could put a severe strain on the water supplies of the Fargo area and potentially leave the community without a water supply.	Comment acknowledged.
840	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	RTE03	It is our further opinion that the best defense against contaminating the reservoir is to evaluate the routing of the pipeline.	Keystone evaluated a variety of potential routes for the pipeline. The selected route balances many criteria including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
841	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	OIL	We recommend consideration of implementing emergency response procedures that would prevent a large spill of 10,000 barrels from ,reaching the reservoir. We hope Keystone will consider locating the pipeline an adequate distance from the lake so that local response personnel have sufficient time to stop the spill from entering the lake in the event a large leak would occur.	Keystone will follow federal regulations which define design and safety standards for crude oil pipelines and related facilities including pipeline material specifications, design and construction requirements, pressure testing, operations and maintenance procedures, and spill and inspection reporting requirements. Keystone will use a dedicated Leak Detection System to alert the Operations Control Center of a potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be enacted, as described in Appendix C. Response actions are designed to contain the spill prior to entry into a water body. The spilled or leaked oil will be recovered and the contaminated area cleaned up in consultation with spill response specialists and appropriate government agencies. Following emergency response, remedial measures will be used to restore the physical, chemical, and biological characteristics of the affected environment. The viscosity of this oil reduces its ability to migrate, thus enhancing spill mitigation with timely response.
842	Ken Royse ND Water Users Assoc.	108	11/6/2007	letter	OIL	In addition, leak detection and monitoring should be included in the operation plan to ensure that smaller leaks are detected and stopped before reaching the reservoir.	During operations, Keystone would regularly monitor the pipeline both electronically and through aerial and ambulatory pipeline integrity surveys at a frequency consistent with 49 CFR Part 195 (Section 2.3.1). Keystone will use a dedicated Leak Detection System to alert the Operations Control Center operator of any potential leak or spill. Should a leak be detected, the pipeline will be shut down and the Spill Mitigation and Recovery Procedures will be set forth, as described in Appendix C. Response actions may include, but are not limited to, placement or construction of berms and/or trenches to contain the spill prior to entry into a water body, and deployment of booms, skimmers, and sorbent materials. The spilled or leaked oil product will be recovered and the contaminated area will be cleaned up in consultation with spill response specialists and appropriate government agencies. Following successful emergency response, appropriate remedial measures will be employed to restore the physical, chemical, and biological characteristics of the affected environment.
843	Keystone	109	9/24/2007	email	SOI	3.1.1.2 Potential Impacts and Mitigation. Construction Impacts Keystone will prepare a blasting plan that is applicable to any locations where blasting will be necessary. Prior to construction, Keystone will file its blasting plan with applicable state or local jurisdictions, where required.	Keystone should commit to notifying state and local jurisdictions of blasting plans, regardless of whether or not they are required to do so.
844	Keystone	109	9/24/2007	email	SOI	3.1.2.2 Paleo Resources Construction Impacts. Keystone will consult with the appropriate regulatory agencies in each state on the applicability and requirements for Paleontological Resource Protection Plans. Keystone will prepare and file plans addressing vertebrate fossils with any respective states, as may be required.	Change wording to reflect Keystone's commitment. Since state-level regulatory agencies are the only ones that might have the authority to require such plans, it makes sense for Keystone to tailor the plans to whatever requirements exist, rather than to create one for the entire route that might not satisfy particular agencies' requirements.
845	Keystone	109	9/24/2007	email	SOI	3.1.4.1 Geologic Hazards Landslides states that prior to crossing these water bodies, Keystone should submit a site-specific Construction Mitigation and Restoration Plan for the Whitewater River crossing, as well as for the crossings listed in Section 3.3.2.2. Keystone will complete site-specific crossing plans for those waterbodies required by the applicable regulatory agencies as well as for those waterbodies required by federal and state permitting processes.	Change wording to reflect Keystone's commitment. Since regulatory agencies are the only ones that have the authority to require such plans, it makes sense for Keystone to tailor the plans to whatever requirements exist, rather than to create one for the entire route that might not satisfy particular agencies' requirements. See also comment 15.
846	Keystone	109	9/24/2007	email	SOI	3.1.4.1 Subsidence states that Keystone should consult with the respective state geological survey departments to identify the most up-to-date sources of data on karst-related subsidence hazards along the proposed route. Keystone will comply with this recommendation.	Change wording to reflect Keystone's commitment.
847	Keystone	109	9/24/2007	email	SOI	3.1.4.2 Potential Impact and Mitigation Landslides Keystone should develop and implement a Landowner Awareness Plan that complies with the recommendations in API Recommended Practice 1162 Keystone will comply with this recommended measure through TransCanada's Integrated Public Awareness plan (IPA). TransCanada's IPA is consistent with the recommendations of API RP-1162 and includes distribution of educational materials to inform landowners of potential threats and on how to identify threats to the pipeline. TransCanada has a toll-free telephone number (1-888-982-7222) in place for landowners to report potential threats to the integrity of the pipeline and other emergencies.	Change wording to reflect Keystone's commitment.
848	Keystone	109	9/24/2007	email	SOI	3.2.2.1 Construction Impacts Keystone should amend its Mitigation Plan to include designation of at least one Environmental Inspector (EI) per construction spread, who would have the authority to stop work and/or order corrective action in the event that construction activities violate the provisions of the Mitigation Plan, landowner requirements, or any applicable permit. Keystone will comply with this recommended measure.	Change wording to reflect Keystone's commitment.
849	Keystone	109	9/24/2007	email	VAL	Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW and to compensate landowners for demonstrated decreases in productivity that may result from any degradation of agricultural soils along the ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for demonstrated losses from decreased productivity resulting from pipeline construction. Keystone has contacted each of the states' Departments of Agriculture. Only Illinois has requested that such a plan be prepared. An Agricultural Mitigation Plan has been developed and approved by the Illinois Department of Agriculture.	Comment accepted, text amended.
850	Keystone	109	9/24/2007	email	SOI	3.2.2.1 Construction Impacts states "Prior to construction, Keystone should amend its Mitigation Plan to include a Wet Weather Construction Plan to address construction practices in agricultural areas during conditions of active precipitation or saturated ground." Section 2.18 of Keystone's Construction Mitigation & Reclamation Plan (CMR Plan) addresses the methodology to be utilized to determine when to restrict or stop work for wet weather and methods to mitigate impacts of construction activities in wet conditions. Section 2.18 takes into account the depth of rutting by reference to whether rutting may cause mixing of topsoil and subsoil, on a location-specific basis. "Stop work" authority will be designated to the Chief Inspector but will be implemented when recommended by the Environmental Inspector. Section 2.18 of the CMR Plan also addresses construction procedures and mitigative measures to minimize compaction in wet conditions. These measures will mitigate the concerns intended to be addressed by the recommended measure.	Change wording to reflect Keystone's commitment.
851	Keystone	109	9/24/2007	email	ERO	3.2.2.2 Operations Impacts states " Prior to construction, Keystone should amend its Mitigation Plan to include a Post-Construction Soil Monitoring Plan, to ensure that any erosion or settling that does occur is detected and mitigated." In the first year after construction, Keystone will inspect the ROW to identify areas of erosion or settling. Subsequently, Keystone will monitor erosion and settling through aerial patrols, which are part of Keystone's Integrity Management Plan, and through landowner reporting. Landowner reporting will be facilitated through the use of Keystone's toll-free telephone number that will be made available to all landowners on the ROW. Landowner reporting may also be facilitated through contact with Keystone's regional offices.	Change wording to reflect Keystone's commitment.
852	Keystone	109	9/24/2007	email	WAT	3.3.1.1 Groundwater North Dakota Wells states "Keystone should obtain and evaluate information regarding all private wells within 100 feet of the ROW prior to initiation of construction activities to ensure the protection of these water resources." Keystone will comply with this recommended measure.	Change wording to reflect Keystone's commitment.
853	Keystone	109	9/24/2007	email	WAT	3.3.1.2 Surface Water Nebraska Water Supplies states "Keystone should obtain and evaluate the locations of surface water supplies along the Cushing Extension prior to initiation of construction activities to ensure the protection of these water resources." Keystone will comply with this recommended measure with respect to public surface water supplies.	Change wording to reflect Keystone's commitment.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
854	Keystone	109	9/24/2007	email	WAT	3.3.2.1 Groundwater Blasting states "Keystone should include measures in each site-specific Blasting Specification Plan (c.f. Section 3.1.1.2) to avoid impacts on groundwater and incorporate post-blasting test procedures to ensure that groundwater resources are not negatively affected due to necessary blasting activities." Keystone's blasting plan will include provisions to avoid impacts to groundwater and to incorporate post-blasting testing for water wells within 150 feet of the centerline to ensure that water wells are not negatively affected by blasting activities.	Change wording to reflect Keystone's commitment.
855	Keystone	109	9/24/2007	email	WAT	3.3.2.2 Surface Water Stream Crossings states "Prior to construction, Keystone should submit a site-specific Construction Mitigation and Restoration Plan for the following water body crossings: Pembina River-North Dakota (MP 7), Tongue River-North Dakota (MP 18), Sheyenne River-North Dakota (MP 167), James River-South Dakota (MP 418), Elkhorn River-Nebraska (MP 498), Shell Creek-Nebraska (MP 527), Big Blue River-Kansas (MP 653), Grand River-Missouri (MP 853), East Fork Silver Creek-Illinois (MP 1041), Smoky Hill River-Kansas (MP 76), Arkansas River-Kansas (MP 206), Salt Fork Arkansas River-Oklahoma (MP 239), and Cimarron River-Oklahoma (MP 285)." Keystone will comply with this recommended measure.	Change wording to reflect Keystone's commitment.
856	Keystone	109	9/24/2007	email	WAT	3.3.2.2 Surface Water Stream Crossings recommends that Keystone in no case use open cut wet methods to cross impaired or contaminated water bodies, waters upstream of HCAs or sensitive and protected water bodies. Keystone does not believe that a blanket restriction on the use of the open-cut wet crossing technique at these locations is appropriate [needs to address why]. Keystone will implement measures that will adequately address the concerns intended to be addressed by the recommended measures on a site-specific basis. Keystone will develop specific construction and crossing methods in conjunction with USACE permitting and FWS consultation. Open cut wet crossings typically are an acceptable method at some of these water bodies. The appropriate method of crossing these water bodies will be determined by the USACE or USFWS, as applicable.	Change wording to reflect Keystone's commitment.
857	Keystone	109	9/24/2007	email	WAT	3.3.2.2 Surface Water Stream Crossings states "Stream and river crossings should be evaluated by a qualified fluvial geomorphologist…" All water body crossings will be assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration. The level of assessment for each crossing will vary based on the professional judgment of the qualified design personnel. The pipeline will be installed as determined to be necessary to address any hazards identified by the assessment. The pipeline will be installed at the design crossing depth for at least 15 feet beyond the design lateral migration zone as determined by qualified personnel. The design of the crossings will also include the specification of appropriate stabilization and restoration measures.	Keystone needs to define the criteria for "qualified design personnel". Engineers without training in natural stream processes are NOT qualified to design stream crossings.
858	Keystone	109	9/24/2007	email	WAT	3.3.2.2 Surface Water Blasting states "Keystone should include measures to avoid impacts on surface water and incorporate post-blasting testing procedures in each site-specific Blasting Specification Plan to ensure that surface water resources are not negatively affected by blasting activities." Keystone will prepare a blasting plan for any locations where blasting will be necessary. Prior to construction, Keystone will file its blasting plan with applicable state or local jurisdictions, where required. Post-blasting testing procedures for surface water resources will be incorporated if required by any applicable state or local jurisdiction.	Change wording to reflect Keystone's commitment.
859	Keystone	109	9/24/2007	email	WAT	3.3.2.2 Surface Water Operations Impacts states "Crossing-related cover depths should be maintained for at least 15 feet beyond the channel migration zone, as determined by a qualified fluvial geomorphologist." All water body crossings will be assessed by qualified personnel in the design phase of the project with respect to the potential for vertical channel degradation and lateral channel migration. The level of assessment for each crossing will vary based on the professional judgment of the qualified design personnel. The pipeline will be installed as determined to be necessary to address any hazards identified by the assessment. The pipeline will be installed at the design crossing depth for at least 15 feet beyond the design lateral migration zone as determined by qualified personnel. The design of the crossings will also include the specification of appropriate stabilization and restoration measures.	Keystone needs to define the criteria for "qualified design personnel". Engineers without training in natural stream processes are NOT qualified to design stream crossings.
860	Keystone	109	9/24/2007	email	WET	3.4.3 Potential Impacts and Mitigation states numerous recommendations from John Cochnar, USFWS May 27, 2007 for topsoil, wetlands, buffer zones, restoration and compensation. Wetland mitigation measures will be addressed by the USACE in the Section 404 permitting process. These recommended measures should be removed from the EIS.	Revised text in Section 3.4.3 to reflect the comment. Also added clarification on compensatory mitigation. The requirements for compensatory mitigation would depend on final USACE decisions on jurisdictional delineations. The appropriate level of authorization and mitigation would ultimately be determined by USACE regulatory offices with input from USFWS field offices and state fish and wildlife agencies. Because these mitigation measures have been specifically requested by federal and state agencies, it is important that they be presented in the EIS. Many of these recommendations may become permit conditions, but most of the general public would not be aware of or review Keystone's permit applications. The USFWS, USACE and USEPA are cooperating agencies in the preparation of this EIS, these agencies have requested the recommendations detailed in this and other sections of the EIS.
861	Keystone	109	9/24/2007	email	VEG	3.5.5.2 Vegetation Communities of Conservation Concern recommends several measures to minimize impacts to native prairie communities. Keystone should minimize impacts to native prairie communities (Larry Svoboda, EPA, May 3, 2007). Measures to minimize impacts to native prairie, as well as restoration and monitoring measures, are included in Keystone's CMR Plan (Section 4.0).	Moved these from recommended measures to measures Keystone would implement to mitigation impacts to native prairie communities on page 3.5-31.
862	Keystone	109	9/24/2007	email	VEG	3.5.5.2 Vegetation Communities of Conservation Concern states "Keystone should mitigate unavoidable impacts to native prairie communities at a minimum replacement/restoration of 1 acre of native prairie for each acre of native prairie impact; mitigation compensation should occur offsite and onsite, which may involve a restoration or preservation program (Larry Svoboda, EPA, May 3, 2007)." Based on implementation of the restoration measures contained in the CMR Plan, there will not be long-term impacts to native prairie communities. Therefore, mitigation for native prairie communities will not be necessary.	We do not necessarily agree with Keystone's assessment and because USEPA has made this recommendation, it is apparent that they also do not necessarily concur with Keystone's assessment either. Restoration of native prairie may take decades, which would be considered a long-term impact. Once prairie sod that has never been tilled is trenched, it is in effect no longer virgin prairie. Fuel spills to native prairies during construction may hamper or prevent restoration efforts as would invasion by noxious weeds. In addition, landowners are not necessarily required to replanting disturbed native prairies on their lands with native vegetation.
863	Keystone	109	9/24/2007	email	VEG	3.5.5.2 Vegetation Communities of Conservation Concern states "Keystone should monitor restoration in native prairies to ensure that native species become established and to ensure no net loss of native prairie habitats (John Cochnar, USFWS, May 27, 2007)." Keystone will comply with this recommended measure.	Moved this measure to measures which Keystone has committed to implement for native prairie on page 3.5-31.
864	Keystone	109	9/24/2007	email	VEG	3.5.5.2 Vegetation Communities of Conservation Concern contains several recommended measures to minimize impacts to wooded communities. While Keystone does not believe its pipeline route crosses any undisturbed native wooded communities, measures to minimize impacts to native wooded communities, as well as restoration and monitoring measures, are included in Keystone's CMR Plan (Section 4.0). Keystone will continue to consult with the applicable regulatory authorities with respect to mitigation and restoration of these areas on federal and state property.	We do not concur with Keystone's assessment. Keystone's CMR Plan does not contain sufficient detail to evaluate Keystone's commitment to avoidance and minimization of impacts to forested uplands and wetlands. Keystone has added the descriptor "undisturbed" to native wooded communities in their assessment. Whether a native wooded communities has been "disturbed" within the past 20-50 years is irrelevant - it would still be defined as a native wooded community. As described in the EIS, native forests, especially forested floodplains, are of conservation concern. We have added Keystone's commitment to continue to consult with applicable regulatory authorities on mitigation and restoration of native wooded communities. As with native prairies, individual landowners are not required to replant disturbed native woodland communities with native trees and shrubs.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
865	Keystone	109	9/24/2007	email	VEG	3.5.5.4 Noxious Weeds states "Keystone should develop a Project-wide noxious weed control plan, which should identify noxious weeds and exotic plants within the Project area and should describe prevention, early detection of invasion, and control procedures for each species. Keystone should ensure that all construction equipment will be completely washed down before crossing the state line from Kansas into Oklahoma to avoid transfer of noxious or other invasive species across state lines (John Cochnar, USFWS, April 28, 2006)." Prior to construction, Keystone will develop a project-wide general Noxious Weed Management Plan, which will address pre-construction noxious weed infestation surveys, control methods, herbicide application, equipment washing, and post-construction monitoring. The Plan will provide for the cleaning or washing of clear and grade equipment at an appropriate location to avoid transfer of noxious weeds across the Kansas/Oklahoma state line.	Revised these measures on page 3.5-35 to describe Keystone's commitment to development of the noxious weed management plan with the provisions as described.
866	Keystone	109	9/24/2007	email	ERO	3.7.3 Potential Impacts and Mitigation states" Keystone should increase the distance at which it establishes the sediment barriers. The suggested location of 10 feet from the water's edge is not a sufficient distance to protect against possible contamination. This distance should be increased to a minimum of 50 feet, and 100 feet when practicable." Keystone does not agree that sediment barriers should be placed 50 feet or 100 feet from water bodies or wetlands. Adopting this practice would allow runoff over a large area of disturbed land to enter the resource without any interception by sediment barriers. Sediment barriers should be installed at a point 10 feet from the resource to maximize the amount of runoff intercepted by the devices, as proposed in the CMR Plan.	Comment acknowledged, no change to text in the DEIS. The rationale for the 10 foot barrier distance as apposed to the 50 or 100 foot barrier distance is to prevent runoff over a large area of disturbed land to enter the resource without any interception by sediment barriers. We agreed with Keystone's rationale and retained the 10 foot barrier distance with the clarification that this distance would maximize the amount of run-off intercepted.
867	Keystone	109	9/24/2007	email	FSH	3.7.3 Potential Impacts and Mitigation states" Keystone should increase the distance at which it locates staging areas for material and equipment. The suggested location of 10 feet from the water's edge is not a sufficient distance to protect against possible contamination. This distance should be increased to a minimum of 50 feet, and 100 feet when practicable". The extra workspace areas associated with water crossings are used for the storage and assembly of pipe, other materials and spoil from the water crossing excavation. Placement of spoil 50 feet or more from the water body necessitates additional equipment to move spoil. This would dramatically increase traffic through the work area. No hazardous materials would be stored within these areas. No refueling of equipment will be allowed within 100 feet of these resources except in certain extraordinary circumstances as approved by the environmental inspector.	The USACE is responsible for permitting actions at and near water body crossings. As part of the permitting process, the USACE solicits the input of resource agencies such as USFWS. The recommended distance from the active channel to the staging area is a MINIMUM of 50 feet and 100 feet whenever practicable, as suggested by the USFWS. USFWS will negotiate with USACE and Keystone to determine the actual setback distance at each water crossing.
868	Keystone	109	9/24/2007	email	FSH	3.7.3 Potential Impacts and Mitigation states" Keystone should reevaluate those water bodies that contain recreationally or commercially important fisheries and consider using a dry crossing method." Keystone will develop crossing plans for water bodies that contain recreationally or commercially important fisheries in conjunction with the appropriate jurisdictional agency and utilize the crossing method approved by such agencies.	Revised DEIS text to state that this was a measure that could be done to further reduce impacts.
869	Keystone	109	9/24/2007	email	FSH	3.7.3 Potential Impacts and Mitigation states "For the Cushing Extension, Keystone should consider using a dry crossing method, potentially HDD, at the crossings of larger water bodies and water bodies classified as special use." Keystone will develop crossing plans for larger water bodies in conjunction with the appropriate jurisdictional agency and utilize the crossing method approved by such agencies.	Revised DEIS text to state that this was a measure that could be done to further reduce impacts.
870	Keystone	109	9/24/2007	email	HYD	3.7.3 Potential Impacts and Mitigation states "Keystone should avoid using water bodies as intake sources that contain commercially and/or recreationally important species for hydrostatic testing. If this is not possible, Keystone should obtain written permission from the appropriate federal, state, and local permitting agencies, as is specified in its Mitigation Plan for hydrostatic test discharge locations." Keystone will obtain all required permits to withdraw water from water bodies for hydrostatic testing and for the discharge of hydrostatic test waters once the testing operation is complete. Keystone will comply with all applicable permit conditions regarding water withdrawal from water bodies and water discharges associated with hydrostatic testing activities.	Comment acknowledged and text modified in DEIS to state that avoiding sensitive water bodies as intake sources would be an additional measure to further reduce effects.
871	Keystone	109	9/24/2007	email	HYD	3.7.3 Potential Impacts and Mitigation states "Keystone should reschedule all hydrostatic testing events to the late fall and winter months, periods that are less sensitive to most fish species." It is not practicable to restrict all hydrostatic testing activities to the fall and winter months. Hydrostatic testing of the pipeline is an integral part of the construction process. Once construction of the pipeline has been completed over a certain distance, the hydrostatic testing operation begins for the constructed segment of pipeline. As testing of that pipeline section is completed, the testing operation moves immediately to the next section. This is in synch with the construction process and is critical to the efficient construction of the pipeline and timely restoration and stabilization of the construction ROW. Keystone will obtain all required permits to withdraw water from water bodies for hydrostatic testing and for the discharge of hydrostatic test waters. Keystone will comply with all applicable permit conditions regarding water withdrawal from water bodies and water discharges associated with hydrostatic testing a	Revised text in DEIS to include updated information from Mitigation Plan that states that withdrawals for hydrostatic testing from sensitive water bodies will generally be avoided until after August 1, unless permission is granted from the proper agency(ies).
872	Keystone	109	9/24/2007	email	HYD	3.7.3 Potential Impacts and Mitigation states " Keystone should discharge the hydrostatic test water into the same water body that was used as the intake source." Keystone plans to return hydrostatic test water directly back to source water body or to a location in the immediate vicinity of the water body at the conclusion of the hydrostatic testing operation. No inter-basin transfers (discharge) of hydrostatic test water will occur.	Text revised in DEIS to include Keystone's commitment to return hydrostatic test water to the original source.
873	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Bald Eagle Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposes the following mitigation measures. If warranted, additional mitigation measures would be developed through Endangered Species Act Section 7 Consultation. Aerial and/or ground surveys, prior to construction, to locate any newly constructed nests and to determine the status of nests from Feb 1 through Aug15. For the active nests, no construction (i.e., ground disturbing activities) would occur within 1.0 mile of the nest between Feb 1 and Aug 15 (Jan 1 and July 15 for Missouri), unless permitted by the USFWS. The 1-mile restriction would end when the young have fledged or the nest is not being used. The protection zones will not preclude travel through an area; a travel lane will be established that protects nests from direct short-term impact. Construction personnel will be trained to minimize disturbance to the birds. Measures for identified communal winter bald eagle roosts within 1 mile of the construction ROW include avoidance of construction activities from 3 p.m. to 10 a.m.	Revised mitigation measures for the bald eagle as suggested.
874	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Bald Eagle states "Keystone should require all electric service providers to implement avian protection measures, including raptor proof designs in areas of bald eagle activity (John Cochnar, USFWS, May 27, 2007." Keystone has not conducted any surveys along power line ROWs. Electric service providers are responsible for permitting and implementing any required avian protection measures with respect to construction activity and structures associated with providing electric service.	Transmission lines were evaluated as a connected action . Electric service providers have agreed to some mitigation which was added to Section 3.8.1.6 for bald eagles. Potential impacts to bald eagles where transmission lines would cross potential riparian habitats was added to this section.

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
875	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Piping Plover and Interior Least Tern states "Prior to construction in potential habitats between April 15 and September 15, qualified biologists should conduct surveys according to USFWS protocols at the river crossing locations and adjacent gravel pits in the vicinity of the Platte, Arkansas, Missouri, and Mississippi Rivers (John Cochnar, USFWS, April 28, 2006)." As agreed to by the USFWS, potential breeding habitat for the piping plover and interior least tern along the project route is restricted to the Platte and Elkhorn rivers in Nebraska, and the Missouri River at the Nebraska-South Dakota state line. The interior least tern breeding habitat also could occur at the Cimarron River in Oklahoma (see July 18, 2006, USFWS meeting summary in the September 2006 Supplemental Filing; February 5, 2007, USFWS meeting summary in the March 2007 Supplemental Filing; and Consultation letter from ODWC in the September 2007 Supplemental Filing). Surveys have been completed this year and no nesting plovers were found.	Survey results were inserted in tabular form replacing the bulleted list of areas to survey on page 3.8-25. Revise mitigation to be consistent with mitigation described for the interior least tern and piping plover in Keystone's Biological Assessment.
876	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Piping Plover and Interior Least Tern states "No construction would be allowed within 0.25 mile of any known active least tern or pipeline plover nest (John Cochnar, USFWS, April 28, 2006)." Based on consultation with the USFWS and applicable state wildlife agencies, Keystone has proposed the following mitigation measures. • Construction disturbance would not be permitted within a 0.25-mile buffer from an occupied nest site during the breeding season (April 15 though August 15). However, construction within the 0.25-mile buffer would be allowed during the constraint window if follow-up surveys prior to construction verify there is no nesting in suitable habitat (see Biological Assessment).	Revised mitigation measures to be consistent with those for the interior least tern and piping plover in Keystone's Biological Assessment.
877	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Piping Plover and Interior Least Tern states "Keystone should consult with individual states concerning potential water withdrawal from the Platte River drainage and avoid water withdrawal during February 1 through July 31 in the Lower Platte region (from Columbus, Nebraska to the Missouri River) (John Cochnar, USFWS, February 5, 2007)." Based on communications with the USFWS, there is no spring-summer restriction (see June 29, 2007 USFWS conference call summary filed as part of Keystone Supplemental filing of September 7, 2007 – Biological Consultations). Keystone intends to consult with regulators and obtain the necessary permits prior to water withdrawal and use for HDD construction and hydrostatic test water withdrawal.	Added Keystone's commitment to return hydrostatic test water within same calendar month as withdrawal and at the same location as withdrawal. Added USFWS conclusion that as long as water used for hydrostatic testing is returned during this period, no seasonal restrictions would be applied.
878	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Whooping Crane states "If construction of the proposed pipeline occurs during either the spring or autumn migration and whooping cranes use areas within 1 mile of pipeline construction activities, construction activities must cease immediately and Keystone must notify the USFWS respective state field office, including the Nebraska Field Office (which maintains the Cooperative Whooping Crane Tracking Project for the United States), to determine when construction can continue (John Cochnar, USFWS, April 28, 2006)." Based on consultation with the USFWS and applicable state wildlife agencies, no mitigation is required for this species. Cranes do not nest within the project area. However, they are known to migrate through the project area and will forage and rest along the project route during migration.	This mitigation measure was presented to Keystone by the USFWS as indicated, no change to test in Section 3.8.1.6.
879	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Gray Bat states "A search for this species should be made prior to any activity that would affect caves in Madison County, Illinois or in Lincoln County, Missouri (John Cochnar, USFWS, May 27, 2007)." Keystone will comply with this recommended measure with respect to any cave located along the ROW.	Revised text to indicate that Keystone has committed to implement this mitigation measure for the gray bat on page 3.8-28.
880	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Indiana Bat Keystone agrees to the recommended measures in this section with the exception that the mitigation ratio be determined by the USFWS giving consideration to actual habitat assessment and loss.	Revised text to indicate that Keystone has committed to implement these mitigation measure for the Indiana bat on page 3.8-33. Added requested text to base compensatory mitigation "giving consideration to actual habitat assessments and losses".
881	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Gray Wolf states "If gray wolves are observed during construction, Keystone should immediately contact USFWS to determine whether additional protection will be required (John Cochnar, USFWS, April 28, 2006)." Keystone will comply with this recommended measure.	Revised text to indicate that Keystone has committed to this mitigation measure on page 3.8-34.
882	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Massasauga states "Keystone should develop a mitigation plan for the Massasauga in Illinois with guidance from IDNR and the Illinois Natural History Survey (Rick Pietruszka, IDNR, February 6, 2007)." Based on consultation with the IDNR, Keystone is currently developing an Incidental Take Permit (ITA) for the Massasauga and Kirtland's snake (see February 6, 2007, Illinois DNR/USACE meeting summary in the March 2007 Supplemental Filing).	Revised measure to indicate that Keystone would apply for an Incidental Take Authorization for the Massasauga in Illinois.
883	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Massasauga states "If construction activity would occur in suitable habitat during the Massasauga's active period (April through October) in Jefferson and Gage Counties in Nebraska, a survey of these habitats for the Massasauga should be conducted by a qualified herpetologist...." The NGPC indicated that placing biological monitors in areas of appropriate native prairie/ wet prairie habitats to locate and remove snakes ahead of construction would be an acceptable protection measure for the Massasauga in Nebraska (see July 18, 2007, correspondence with Mike Fritz, NGPC in the September 2007 Supplemental Filing). No other surveys would be required	Revised measure for Nebraska to indicate that biological monitors would be used to locate and remove snakes ahead of construction on page 3.8-35.
884	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Massasauga states "Impacts on eastern massasauga and its associated habitats should be avoided (John Cochnar, USFWS, April 28, 2006)." Habitat surveys were conducted in 2006 and 2007 in Missouri and Illinois. Additionally, snake occurrence surveys were conducted during the spring emergence period in 2007 at sites in Missouri identified as containing potential habitat. No Massasauga were identified within suitable habitat occurring along the ROW in Missouri. Habitat surveys will be completed in fall 2007. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposes the following mitigation measures if surveys identify Massasauga within the ROW: • Construction activities would be restricted from October 15 to May 15 in areas where snakes have been identified using hibernaculum within the ROW in Missouri and Illinois. • During construction, active hibernacula would be monitored, and snakes would be moved off the construction ROW in Missouri. • Massasauga habitat would be restored to pre-construction conditions to the extent practical in Missouri and Illinois (see Keystone's Biological Assessment).	Revised Table 3.8.1-10 to include information from occurrence surveys for frogs, snakes, turtles and lizards along with results of habitat surveys. Table includes all surveyed habitats the were indicated as likely to support the Massasauga and other protected snakes. Revised mitigation measures on page 3.8-35 to include the measures • Construction activities would be restricted from October 15 to May 15 in areas where snakes have been identified using hibernaculum within the ROW in Missouri and Illinois. • During construction, active hibernacula would be monitored, and snakes would be moved off the construction ROW in Missouri. • Massasauga habitat would be restored to pre-construction conditions to the extent practical in Missouri and Illinois.
885	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Dakota Skipper states "Impacts on the Dakota skipper and its native prairie habitats should be avoided. Native prairie habitats disturbed within the pipeline ROW should be restored to conditions as good or better than pre-construction conditions to prevent further degradation of likely Dakota skipper habitat (John Cochnar, USFWS, March 6, 2007)." Surveys for the Dakota Skipper have been completed and reports have been and filed as part of Keystone's September 2007 Supplemental Filing. No skippers were identified within the ROW in suitable habitat areas, but one location found a Dakota skipper was observed off ROW. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone has developed mitigation measures for this species to the extent practical.	Revised Section 3.8.1.6 to include results of native prairie habitat surveys and Dakota skipper occurrence surveys. Revise mitigation measures to include the following proposed by Keystone: • Restricting the work space where the ROW crossed native prairie habitat. • Salvaging and segregating topsoil in native prairie to maintain native seed sources for revegetation of the ROW in native prairie parcels. • Reseeding native prairie with applicable native seed mixes. In addition, include mitigation measures agreed to by Keystone to restore and monitor restoration of native prairie habitats.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
886	Keystone	109	9/24/2007	email	VEG	3.8.1.6 Dakota Skipper states "Vegetation maintenance plans should include measures that encourage or enhance a healthy native prairie, such as (John Cochnar, USFWS, March 6, 2007; USFWS 2005): Keystone cannot implement these recommended measures because these measures are within the sole control of the landowners.	Keystone should inform landowners of Best Management Plans for native prairie habitats and the Dakota skipper and encourage landowners to implement these BMPs on the pipeline ROW. Where Keystone will engage in vegetation management on the pipeline ROW, Keystone should follow these same BMPs to avoid impacts on Dakota skipper and its native prairie habitats. Revised as additional measures on page 3.8-39.
887	Keystone	109	9/24/2007	email	HYD	3.8.1.6 Pallid Sturgeon states "Keystone should consult with individual states concerning potential water withdrawal from the Platte River drainage and avoid water withdrawals during February 1 through July 31 in the Lower Platte region (John Cochnar, USFWS, February 5, 2007). Keystone will consult with individual states and acquire all necessary permits needed for water withdrawal from the Platte River. The USFWS indicated that there would be no timing restriction for which water cannot be withdrawn from the lower Platte River drainage as long as water is returned to the source within the same calendar month. Nebraska DNR may have some timing concerns, particularly during the irrigation season (see June 29, 2007 USFWS conference call summary in the September 2007 Supplemental Filing).	Revised recommendations to state Keystone's commitment to consult with individual states for water withdrawal from the Platte River. Added USFWS response that no timing restrictions would be applicable as long as water is returned to the source within the same calendar month. Retained additional measure for timing restriction for water withdrawal in the Lower Platte drainage in Nebraska.
888	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Arkansas Darter states "Complete habitat and occurrence surveys at the Cushing Milepost 205.3 crossing of the unnamed tributary of the Arkansas River If suitable habitat exists within the ROW, no construction should be completed during the Arkansas darter spawning period March 1 to May 31. Sample and relocation efforts would not be required (Nate Davis, KDWP, February 12, 2007). Keystone will comply with the recommended measures. Surveys for the Arkansas Darter were completed in the unnamed tributary of the Arkansas River (designated Kansas state critical habitat) in August 2007 and filed as part of Keystone's September 2007 Supplemental Filing.	Section 3.8.1.6 Arkansas darter was updated to include information from the completed surveys. Revised text to indicate that Keystone has committed to comply with the recommended measures.
889	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Arkansas River Shiner states "Complete habitat and occurrence surveys at the Cushing Extension MP 206.8 crossing of the Arkansas River. If suitable habitat exists within the ROW, no construction should be completed during the Arkansas darter spawning period from March 1 to May 31. Sampling and relocation efforts would not be required (Nate Davis, KDWP, February 12, 2007)." Keystone will comply with the recommended measures. Surveys for the Arkansas River shiner were completed at the Arkansas River (designated Kansas state critical habitat) and Cimarron River in August 2007 and filed as part of Keystone's September 7, 2007 Supplemental Filing.	Section 3.8.1.6 Arkansas River shiner was updated to include information from the completed survey. Revised text to indicate that Keystone has committed to comply with the recommended measures.
890	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Topeka Shiner has numerous recommended measures for the Topeka Shiner. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposes the following mitigation measures. • In-stream construction activities would be prohibited during the spawning period (May 15 through July 31) at specific stream crossings identified in consultation with the USFWS, unless HDD methods are used. • Outside of the spawning season, if construction would disturb streams with pool depths of 3 feet or greater, those pools would be seined at least 1 week prior to construction, and fish would be relocated upstream to a pool or location of similar depth. • Erosion control measures would be implemented as described in Keystone's Construction Mitigation and Reclamation (CMR) Plan. Erosion and sediment controls would be monitored daily during construction to ensure effectiveness, particularly after storm events. • Banks and beds of streams would be restored using erosion control and revegetation measures as described in Keystone's CMR Plan (see Keystone's Biological Assessment).	Section 3.8.1.6 Topeka shiner was updated to include information from completed surveys. Measures were updated and revised to include mitigation measures proposed by Keystone and as described in Keystone's Biological Assessment including: • In-stream construction activities would be prohibited during the spawning period (May 15 through July 31) at specific stream crossings identified in consultation with the USFWS, unless HDD methods are used. • Outside of the spawning season, if construction would disturb streams with pool depths of 3 feet or greater, those pools would be seined at least 1 week prior to construction, and fish would be relocated upstream to a pool or location of similar depth. • Erosion control measures would be implemented as described in Keystone's Construction Mitigation and Reclamation (CMR) Plan. Erosion and sediment controls would be monitored daily during construction to ensure effectiveness, particularly after storm events. • Banks and beds of streams would be restored using erosion control and revegetation measures as described in Keystone's CMR Plan
891	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Neosho Madtom. Surveys for the Neosho madtom were completed at the Cottonwood River in June 2007. No madtoms were identified, and habitat was characterized as poor. Based on the results of the field surveys, no mitigation measures are necessary (see September 2007 Supplemental Filing).	Section 3.8.1.6 Neosho madtom was updated to include information from completed surveys. Revised text to indicate that no additional mitigation measures would be required for this species.
892	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Winged Mapleleaf states "Freshwater mussels in the area of the proposed pipeline crossing (at and downstream from the crossing) on the James River should be moved upstream from the crossing location (Douglas Backlund, South Dakota Department of Game, Fish, and Parks, February 2, 2007)" At the request of the SDGFP, surveys for the Winged Mapleleaf were conducted at the James River in 2006. Neither the Winged Mapleleaf nor other rare freshwater mussel species were detected during the surveys. Please see the September 2006 Supplemental Filing, Biological and Wetland field Survey Reports conducted for the Keystone pipeline Project. Accordingly, the recommended measure is not warranted.	Surveys occurring subsequent to publication of the DEIS indicate that the winged mapleleaf does not occur at the Maimne River crossing or within the remainder of the Keystone project area. Therefore Winged mapleleaf has been removed from discussion in section 3.8
893	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Decurrent False Aster recommends several measures for the aster. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposes the following mitigation measures. Surveys for this species would be conducted prior to construction at suitable habitat identified within the ROW during the appropriate time period. • The width of the construction ROW would be reduced in areas where populations have been identified, to the extent possible. • Topsoil would be salvaged and segregated appropriately in areas where populations have been identified to preserve native seed sources in the soil for use in revegetation efforts in the ROW. • Habitat would be restored to pre-construction conditions using an approved seed mix provided by the NRCS or appropriate state agency. • Keystone will monitor these areas after construction to identify and remove exotic weed, grass or legume species that could hinder the re-establishment of decurrent false aster (see Keystone's Biological Assessment).	Section 3.8.1.6 Decurrent false aster was revised to include the mitigation measures Keystone has committed to implement to avoid impacts on the decurrent false aster including: Surveys for this species would be conducted prior to construction at suitable habitat identified within the ROW during the appropriate time period; The width of the construction ROW would be reduced in areas where populations have been identified, to the extent possible; Topsoil would be salvaged and segregated appropriately in areas where populations have been identified to preserve native seed sources in the soil for use in revegetation efforts in the ROW; Habitat would be restored to pre-construction conditions using an approved seed mix provided by the NRCS or appropriate state agency; and Keystone will monitor these areas after construction to identify and remove exotic weed, grass or legume species that could hinder the re-establishment of decurrent false aster.
894	Keystone	109	9/24/2007	email	T&E	3.8.1.6 Running Buffalo Clover has numerous recommendations for the clover. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposes the following mitigation measures. Surveys for this species would be conducted prior to construction at suitable habitat identified within the ROW during the appropriate time period. • The width of the construction ROW would be reduced in areas where populations have been identified, to the extent possible. • Topsoil would be salvaged and segregated appropriately where populations have been identified to preserve native seed sources in the soil for use in re-vegetation efforts in the ROW. • Habitat would be restored using an approved seed mix provided by the NRCS or appropriate state agency.	Section 3.8.1.6 Running buffalo clover was revised to include the mitigation measures Keystone has committed to implement to avoid impacts on running buffalo clover including: Surveys for this species would be conducted prior to construction at suitable habitat identified within the ROW during the appropriate time period; The width of the construction ROW would be reduced in areas where populations have been identified, to the extent possible; Topsoil would be salvaged and segregated appropriately where populations have been identified to preserve native seed sources in the soil for use in re-vegetation efforts in the ROW; and Habitat would be restored using an approved seed mix provided by the NRCS or appropriate state agency.
895	Keystone	109	9/24/2007	email	HYD	3.8.1.6 Platte River Basin Water Depletions has numerous recommendations for hydrostatic testing Keystone has prepared a draft Hydrostatic Test Plan (HTP) that will be subject to the approval of the USFWS.	Revised Section 3.8.1.6 to reference the draft Hydrostatic Test Plan. This plan is subject to approval by USFWS. Added: The lengths and locations of test sections; Maintenance of downstream flows during withdrawal of hydrostatic test water; Cleaning of the pipeline with a brush pig prior to testing; Chemicals will not be added to the test water; test water discharges will not contain oils or other substances in sufficient amounts to create a visible sheen on the surface of the receiving waters; Requirements for test water withdrawal/discharge; Discharge of test water back to the withdrawal location or to the vicinity of the withdrawal (same watershed). Keystone will consult with individual states and acquire all necessary permits needed for water withdrawal from the Platte River. Added text that the USFWS has indicated that there would be no timing restriction for water withdrawals from the lower Platte River drainage as long as water is returned to the source within the same calendar month. Included additional measure that the NE DNR has some withdrawal timing concerns during the irrigation season.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
896	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Waterbirds has numerous recommendations regarding waterbirds. A 2007 survey report for king rail has been submitted in Keystone's September 7, 2007 Supplemental Filing. No king rails were located during surveys that were conducted in spring 2007. It is not anticipated that additional measures will be required for this species. A 2007 desktop habitat survey was conducted to determine suitable habitat for the least bittern and yellow-crowned night heron in Illinois (the pied-billed grebe is no longer listed in Illinois, therefore, no survey for this is required). Surveys for these species would occur during the appropriate breeding season prior to construction at Carlyle Lake. Keystone proposes the following mitigation measures if nesting birds are found. • Construction activities would be restricted within a 0.25-mile buffer of an active nest during the appropriate breeding season. • Prior to construction within 0.25 mile of an active nest site, follow up surveys would occur to verify that the nest site is no longer active. • Habitat would be restored to pre-construction conditions.	Section 3.8.2.6 Waterbirds was updated by inclusion of information for habitat and occurrence surveys. Revised mitigation measures Keystone has committed to for state listed waterbirds if nesting birds are found include: Construction activities would be restricted within a 0.25-mile buffer of an active nest during the appropriate breeding season; Prior to construction within 0.25 mile of an active nest site, follow up surveys would occur to verify that the nest site is no longer active; and habitat would be restored to pre-construction conditions.
897	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Raptors states "Avoid construction that would disturb northern harriers and barn owls during the March to June breeding season. "Barn Owl: No barn owl habitat would be disturbed as a result of construction activities in Missouri. No mitigation for this species is warranted. Northern Harrier: Mitigation measures to protect migratory bird species, including raptor species, are being evaluated and refined based on consultation with the USFWS.	We disagree with Keystone's assessment. The presence of the know pair of barn owls at the north end of Carlyle Lake indicates that barn owl habitat would be disturbed. Nest structures would not be apparent for this species using aerial-based raptor nest surveys as this species nests in tree cavities. Mitigation measures for the northern harriers and barn owl were revised to include Keystone's commitments to survey for birds within 330 feet of the ROW if construction would proceed during the nesting season.
898	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Snowy Plover states "Keystone should consult with USFWS and appropriate resource agencies in Kansas to identify nesting areas used by the snowy plover. If pre-construction nest surveys identify an active snowy plover nest within the construction ROW, Keystone should consult with USFWS and state agency wildlife biologists." This species is of state concern only. Based on consultation with the KDWP, this species does not nest in the vicinity of the Project. The KDPW has no concerns with this species (see July 20, 2006, KDPW meeting summary in the September 2006 Supplemental Filing).	Section 3.8.2.6 Snowy Plover was deleted as this species does not occur within the project area based on consultation with the KDWP.
899	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Loggerhead Shrike and Henslow's Sparrow states "Pre-construction nest surveys should be completed in the Carlyle Lake WMA, Fayette County, Illinois. No construction should occur during the breeding season if loggerhead shrikes are observed nesting in the construction ROW (Rick Pietruszka, IDNR, February 6, 2007)." A 2007 desktop habitat survey was conducted to determine suitable habitat for the loggerhead shrike in Illinois (see Keystone's Supplemental Filing of September 7, 2007). Field surveys for these species would occur during the appropriate breeding season (March 1 through June 15) prior to construction at Carlyle Lake. Keystone has proposed the following mitigation measures if nesting birds are found: • Construction activities would be restricted within a 0.25-mile buffer of an active nest during the appropriate breeding season. • Prior to construction within 0.25 mile of an active nest site, follow up surveys would occur to verify that the nest site is no longer active. • Habitat would be restored to pre-construction conditions. No surveys for Henslow's sparrow would be necessary in Illinois since the project would not cross suitable habitat for this species .	Section 3.8.2.6 Loggerhead Shrike and Henslow's Sparrow were updated within information from the habitat analysis for these species. Mitigation was revised to include measures Keystone will implement including: Field surveys for these species would occur during the appropriate breeding season (March 1 through June 15) prior to construction at Carlyle Lake. Keystone has proposed the following mitigation measures if nesting birds are found: Construction activities would be restricted within a 0.25-mile buffer of an active nest during the appropriate breeding season; Prior to construction within 0.25 mile of an active nest site, follow up surveys would occur to verify that the nest site is no longer active; and Habitat would be restored to pre-construction conditions. No surveys for Henslow's sparrow would be necessary in Illinois since the project would not cross suitable habitat for this species.
900	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Eastern Spotted Skunk states "Keystone should contact the appropriate resource agencies in Missouri, Kansas, and South Dakota for current distributions of Eastern spotted skunk; any documented active den sites should be avoided. If spotted skunks are observed during construction, appropriate state wildlife authorities should be contacted to avoid injury to this species." Missouri: The MDC has indicated that this species does not occur along the route. Therefore, no surveys for this species would be warranted in Missouri (see MDC July 19, 2006, meeting summary, September 2006 Supplemental Filing). Kansas: No records for this species have been documented in Kansas for approximately 30 years. The KDWP would have no issues with this species if habitat is properly mitigated and returned to pre-construction conditions (see KDWP meeting summary in the September 2006 Supplemental Filing). South Dakota: The Eastern Spotted Skunk is a species of concern that has no protected status in South Dakota. Therefore, no special measures are required.	Section 3.8.2.6 Eastern Spotted Skunk was deleted as this species does not occur within the project area based on consultation with state resource agencies.
901	Keystone	109	9/24/2007	email	WIL	3.8.2.6 River Otter states "Occupied den sites should be identified and avoided by construction (Rick Schneider, NGPC, June 16, 2006)." Surveys for otter den sites were conducted in the summer of 2007 for the Elkhorn River and Platte River in Nebraska. None were found (see September 2007 Supplemental Filing). However, if den sites are found prior to construction on these rivers, Keystone will consult with the NGPC with regard to appropriate mitigation measures. The river otter is no longer a listed species in Illinois. Consequently, surveys for this species are not required in Illinois.	Updated Section 3.8.2.6 River Otter with survey results and added mitigation Keystone has committed to implement for this species including: if den sites are found prior to construction on the Elkhorn River or Platte River in Nebraska, Keystone will consult with the Nebraska Game and Parks Commission to develop appropriate mitigation measures.
902	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Western Fox Snake states "Survey suitable habitats for emerging snakes in early April (Doyle Brown, MDC, February 28, 2007)." Habitat surveys were conducted in 2006 and 2007 in Missouri and submitted as part of Keystone Supplemental Filing of September 7, 2007.	Updated Section 3.8.2.6 Western Fox Snake with results of surveys.
903	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Kirtland's Snake states "Develop a conservation plan for Kirtland's snake in Illinois, with guidance from IDNR and the Illinois Natural History Survey (Rick Pietruszka, IDNR, February 6, 1007)." Based on consultation with the IDNR, Keystone is currently developing an Incidental Take Permit (ITA) for the Massasauga and Kirtland's snake (see February 6, 2007, Illinois DNR/USACE meeting summary in the March 2007 Supplemental Filing).	Revised measure to indicate that Keystone would apply for an Incidental Take Authorization for the Kirtland's snake in Illinois.
904	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Flathead Chub states "Complete habitat and presence surveys for the flathead chub at the South Fork Big Nemaha River crossing in Kansas. No construction should occur during the flathead chub spawning period from July 1 to August 15 within the South Fork Big Nemaha River channel. If flathead chubs are present at the crossing site, they should be collected and relocated to suitable habitats upstream from the construction area (Nate Davis, KDWP, February 12, 2007)." Surveys for flathead chub are not required at the South Fork Big Nemaha River crossing in Kansas because this river is already state-designated critical habitat. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposed several mitigation measures in the South Fork Big Nemaha River: to be added to this section.	Revised mitigation measures for the flathead chub to include measures agreed to by Keystone based on consultation with the USFWS and KDWP for state designated critical habitat in the South Fork Big Nemaha River: In-stream construction activities would be prohibited during the spawning period (July 1 – August 15) at stream crossings where this species is found unless HDD methods are used; Outside of the spawning season, if construction would disturb streams with pool depths of 3-feet or greater, those pools would be seined at least one week prior to construction, and fish would be relocated upstream to a pool or location of similar depth; Outside of the spawning season, if a stream bed is dry, or only shallow pools (less than 3 feet in depth) exist, no sampling would be required; Erosion control measures would be described and implemented as part of any request for Section 10/404 permit authorizations; Erosion and sediment controls would be monitored daily during construction to ensure effectiveness, particularly after storm events, and only the most effective techniques would be utilized; and Banks and beds of streams would be restored to pre-construction conditions as outlined in Keystone's CMR Plan.
905	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Silver Chub states "Complete habitat and presence surveys for the silver chub at the Arkansas River crossings in Kansas. No in stream construction should occur during the silver chub spawning period from July 1 to August 15 within the South Fork Big Nemaha River channel If silver chubs are present at the crossing site, they should be collected and relocated to suitable habitats upstream from the construction area (Nate Davis, KDWP, February 4, 2007)." Surveys for the silver chub were attempted at the Arkansas, but due to high water levels, they were not completed. Keystone expects to complete these surveys in the fall of 2007. Based on consultation with the USFWS and applicable state wildlife agencies, Keystone proposes mitigation measures for the Arkansas River and the South Fork Big Nemaha River to be added to the FEIS.	Updated Section 3.8.2.6 Silver Chub with revised mitigation measures agreed to by Keystone based on consultation with the USFWS and KDWP in the Arkansas and South Fork Big Nemaha River to include: In-stream construction activities would be prohibited during the spawning period (July 1 – August 15) at stream crossings where this species is found unless HDD methods are used; Outside of the spawning season, if construction would disturb streams with pool depths of 3-feet or greater, those pools would be seined at least one week prior to construction, and fish would be relocated upstream to a pool or location of similar depth; Outside of the spawning season, if a stream bed is dry, or only shallow pools (less than 3 feet in depth) exist, no sampling would be required; Erosion control measures would be described and implemented as part of any request for Section 10/404 permit authorizations; Erosion and sediment controls would be monitored daily during construction to ensure effectiveness, particularly after storm events, and only the most effective techniques would be utilized; and Banks and beds of streams would be restored to pre-construction conditions as outlined in Keystone's CMR Plan.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
906	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Sturgeon Chub states "Keystone should consult with individual states concerning potential water withdrawals from the Platte River drainage and avoid water withdrawals during February 1 through July 31 in the Lower Platte region." Keystone will consult with individual states and acquire all necessary permits needed for water withdrawal from the Platte River. The USFWS indicated that there would be no timing restriction for which water cannot be withdrawn from the lower Platte River drainage as long as water is returned to the source within the same calendar month. Nebraska DNR may have some timing concerns, particularly during the irrigation season (see June 29, 2007 USFWS conference call summary in the September 2007 Supplemental Filing).	Revised Section 3.8.2.6 Sturgeon Chub to include Keystone's commitment to consult with USFWS and individual states concerning water withdrawals form the lower Platte River drainage.
907	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Arkansas River Speckled Chub states "No in stream construction should occur during the silver chub spawning period from May 15 to August 31 within the Arkansas River channel." Keystone will comply with this recommended measure.	Revised text to indicate that Keystone has committed to the following mitigation for the Arkansas River Speckled Chub: No in stream construction would occur during the Arkansas River speckled chub spawning period from May 15 to August 31 within the Arkansas River channel.
908	Keystone	109	9/24/2007	email	WIL	3.8.2.6 Western Silvery Minnow states " Complete habitat and presence surveys for the western silvery minnow at the South Fork Big Nemaha River crossing in Kansas. No construction should occur during the western silvery minnow spawning period from June 1 to August 15 within the South Fork Big Nemaha River channel. If western silvery minnows are present at the crossing site, they should be collected and relocated to suitable habitats upstream from the construction area (Nate Davis, KDWP, February 12, 2007)." No surveys will be performed for the Western Silvery Minnow at the South Fork Big Nemaha River crossing in Kansas because this area is designated as critical habitat. Based on consultation with the KDWP, Keystone has proposed the mitigation measures at the South Fork Big Namaha River to be included in the FEIS.	Revised Section 3.8.2.6 to include mitigation measures Keystone has committed to for the western silvery minnow at the South Fork Big Namaha River: In-stream construction activities would be prohibited during the spawning period (June 1 - August) at specific stream crossings identified for this species unless HDD methods are used; Outside of the spawning season, if construction would disturb streams with pool depths of 3-feet or greater, those pools would be seined at least one week prior to construction, and fish would be relocated upstream to a pool or location of similar depth; Outside of the spawning season, if a stream bed is dry, or only shallow pools (less than 3 feet in depth) exist, no sampling would be required; Erosion control measures would be described and implemented as part of any request for Section 10/404 permit authorizations. Erosion and sediment controls would be monitored daily during construction to ensure effectiveness, particularly after storm events, and only the most effective techniques would be utilized; Banks and beds of streams would be restored to pre-construction conditions as outlined in Keystone's CMR Plan.
909	Keystone	109	9/24/2007	email	WIL	3.8.3.1 Potential Impacts and Mitigation for Species of Conservation Concern states "Keystone should work with USFWS to identify measures to comply with the MBTA and the Bald and Golden Eagle Protection Act. Keystone should work with USFWS and state agency wildlife biologists to determine whether additional mitigation is needed for wildlife species of conservation concern." Keystone has been complying and will continue to comply with this recommended measure.	Revised Section 3.8.3.1 to include the following mitigation measures Keystone has committed to: • Keystone will continue to work with USFWS to identify measures to comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act; and Keystone will continue to work with USFWS and state agency wildlife biologists to determine whether additional mitigation is needed for wildlife species of conservation concern.
910	Keystone	109	9/24/2007	email	LNU	3.9.3.2 Conservation Reserve Program Lands requests that Keystone provide information on these lands to the fast county office. Keystone understands that FSA rules require that individual landowners contact their local FSA offices with regard to construction across lands covered by CRP contracts. Keystone will assist all appropriate landowners with this effort. Keystone will confer with all appropriate FSA offices to ensure that these consultations meet FSA requirements. Keystone will comply with remediation and restoration requirements required by FSA.	DEIS text amended to reflect that individual landowners would contact local FSA offices, and that Keystone will help to facilitate this process.
911	Keystone	109	9/24/2007	email	LNU	3.9.3.2 NRCS Programs states "Keystone should utilize the state-specific NRCS Field Office Technical Guide (Appendix M) for mitigation and revegetation of areas damaged by construction. Keystone should consult with the local NRCS representatives to determine the adequacy of Keystone's Mitigation Plan and supplement the plan as needed." Keystone has complied with this recommended measure and will continue to consult with NRCS, as needed, during construction and reclamation.	Text changed to reflect comment.
912	Keystone	109	9/24/2007	email	LNU	3.9.3.2 Windbreaks, Shelterbelts, and Living Snow Breaks states "Keystone should implement all Mitigation Plan measures pertaining to impacts, mitigation, and reclamation in forested areas for impacts on windbreaks, shelterbelts, and living snow fences. Keystone should provide non-vegetative remediation for affected windbreaks, shelterbelts, and living snow fences within the permanent and construction ROWs in the form of windbreak nets, mesh, or fencing and snow fencing." Keystone will address mitigation, reclamation, and remediation measures, including the possible use of non-vegetative remediation pertaining to impacts to windbreaks, shelterbelts, and living snow fences with individual landowners and will comply with any applicable state requirements.	Text changed to reflect comment.
913	Keystone	109	9/24/2007	email	LNU	3.9.3.5 Residences and Planned Development states "Keystone should prohibit all construction work during weekends and major holidays in the vicinity of residences." This recommended measure is not practicable. In order to minimize overall disturbance and the duration of construction, it is essential that construction progress on the basis of a 6-day per week work week for normal operations. Skipping areas in the "vicinity" (an undefined term) of residences because such construction falls on a weekend, and coming back to that location at a later time, would significantly increase construction disturbance. If an individual landowner is concerned with noise levels associated with weekend construction, mitigation of those concerns may be discussed with Keystone's land agents.	Comment acknowledged; DEIS text amended to reflect that construction on weekends is necessary. Text remains unchanged for construction on holidays.
914	Keystone	109	9/24/2007	email	LNU	3.9.3.7 Forests and Woodlands states "Keystone should consult with state wildlife management and natural resource officials to schedule construction activities in order to avoid important recreational periods (such as hunting seasons) and to create a maintenance plan for the permanent ROW that avoids important recreational periods and results in minimal disturbance to the area. Where the pipeline follows an existing ROW in forested areas, Keystone should attempt to route the pipeline as close as possible to the existing ROW in order to minimize the overall Project footprint." Keystone will consult with land managers on state and federal lands regarding any necessary construction and maintenance restrictions consistent with management and use of such lands. Damages from disruption of recreational uses of private lands will be the subject of compensation negotiations with individual landowners. Where the pipeline follows an existing ROW in forested areas, Keystone will attempt to route the pipeline as close as practical to the existing ROW.	Text changed to reflect comment.
915	Keystone	109	9/24/2007	email	LNU	3.9.3.7 Privately Owned Conservation Areas states "Keystone should consult with owners of private conservation areas and local advocacy groups to schedule construction activities in order to avoid important recreational periods (such as hunting seasons), and to create a maintenance plan for the permanent ROW that avoids important recreational periods and results in minimal disturbance to the area. Where the pipeline follows an existing ROW, Keystone should attempt to route the pipeline as close as possible to the existing ROW in order to minimize the overall footprint of these features in privately owned conservation areas." Keystone will consult with the owners of private conservation areas regarding any concerns related to disruption of recreational uses of such areas. Damages from disruption of recreational uses of private lands will be the subject of compensation negotiations with individual landowners Where the pipeline follows an existing ROW in privately owned conservation areas, Keystone will attempt to route the pipeline as close as practical to the existing ROW.	Text changed to reflect comment.

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
916	Keystone	109	9/24/2007	email	LNU	3.9.3.7 Riverlands Environmental Demonstration Areas states "Keystone should attempt to route the pipeline as close as possible to the existing ROW (Platte pipeline) in order to minimize the overall footprint of these features in Riverlands. Keystone should pay special attention to the soils in the Mississippi-Missouri confluence region and their uniqueness, taking care to avoid alteration of the hydrology of the area due to disruption of the ridge/swale topography. Keystone should minimize construction impacts by scheduling construction activities in Riverlands during early summer and ending construction prior to autumn." Keystone has re-routed the pipeline to address USACE, MODNR, and USFWS concerns in the Confluence Park area. A detailed plan, similar to one prepared for the crossing of Carlyle Lake, is being prepared and will be provided once it has been approved by the agencies listed above, which is expected in mid-October 2007.	Keystone has re-routed to avoid the Riverlands Environmental Demonstration Area, but crossings would still occur through numerous Conservation Opportunity Areas and through Confluence Point State Park. Keystone has also re-routed within Confluence Point State Park to avoid some areas trafficked more frequently by visitors. DEIS text amended to include reference to the site-specific crossing plan for the confluence area.
917	Keystone	109	9/24/2007	email	LNU	3.9.3.7 Wildlife Management Areas and Hunting states "Keystone should consult with public land managers to schedule construction activities in wildlife management and public conservation areas to avoid important recreational periods, and to create a maintenance plan for the permanent ROW that avoids important recreational periods and results in minimal disturbance to these areas. Where the pipeline follows an existing ROW in a wildlife management or public conservation area, Keystone should attempt to route the pipeline as close as possible to the existing ROW in order to minimize the overall footprint of these features in wildlife management and public conservation areas." This concern will be addressed through individual negotiations with land managers. Where the pipeline follows an existing ROW in privately owned conservation areas, Keystone will attempt to route the pipeline as close as practical to the existing ROW	Text changed to reflect comment.
918	Keystone	109	9/24/2007	email	LNU	3.9.3.7 Off-road Vehicles and Trespassing states "Keystone should use fencing and gates to prevent unauthorized access to the ROW immediately following the start of construction activities. Keystone should maintain and monitor fences and gates until permanent mitigation measures can be put in place. Keystone should commit to prevention of trespass in all of its potential forms on the construction and permanent ROW, using the stated mitigation measures, to be implemented at the time of restoration and mitigation." Prevention of trespass through the use of fencing and gates can only be effective in areas where there are already existing fencing and gates and in forested areas. Keystone's CMR Plan addresses this issue in Section 2.0. Specific landowner concerns regarding trespass issues will be addressed in individual landowner consultation.	Comment acknowledged; DEIS text amended to reflect fencing limitations and to include addressing individual landowner concerns on a case-by-case basis.
919	Keystone	109	9/24/2007	email	LNU	3.9.3.7 Agricultural Lands and Rangelands states "Aboveground facilities should be painted with a non-reflective coating similar in color to the surrounding terrain and several shades darker, using colors that account for seasonal change in landscape colors. Keystone should use a vegetative barrier to shield a facility from sight when it is within viewing distance of a residence, or when otherwise appropriate." Keystone will comply with standard industry painting practices with respect to above-ground facilities. Keystone will address any visual esthetics issues with landowners in individual consultations.	Text changed to reflect comment.
920	Keystone	109	9/24/2007	email	LNU	3.9.4.7 Wilderness Areas states "Keystone should develop a site-specific crossing plan for the Milford Wildlife Area. Keystone should work with Milford Wildlife Area managers to schedule construction activities in order to avoid seasonal hunting conflicts with the public hunting area." Keystone is working with Milford Lake Wildlife Area personnel and agencies to develop a crossing plan similar to what was provided at Carlyle Lake for their review and approval. Disruption of seasonal hunting activities will be the subject of discussion with the applicable land managers.	Comment acknowledged; DEIS text amended to reflect development of site-specific crossing plan for Milford Lake area.
921	Keystone	109	9/24/2007	email	AIR01	3.12.1.3 recommends that Keystone cover all open-bodied trucks while in motion to minimize fugitive dust emissions. The recommended measure is not practical. Keystone will comply with all applicable state and local regulations with respect to truck transportation and fugitive dust emissions.	Revised DEIS text to state that this was a measure that could be done to further reduce impacts.
922	Keystone	109	9/24/2007	email	AIR01	3.12.2.3 Construction Impacts. Keystone will set up a toll free telephone line for landowners to utilize to report any construction related issues including noise issues. Ldn is a 24-hour day/night noise weighing average, and has significance in terms of a contour of noise exposure. It is not practical to perform noise assessment surveys during construction since it is understood that during occasional, short-term intervals, noise levels will exceed 55dBa. There are no regulations in rural areas along the pipeline route applicable to construction noise. In municipal areas, pipeline construction noise levels will comply with any applicable municipal regulations. In areas near residences and businesses where construction activities or noise levels may be considered disruptive, Keystone will coordinate work schedules to minimize disruption.	Revised DEIS section - added that they will have a telephone line and would coordinate work schedules. For other parts, added as a measure that could be done to further reduce impacts.
923	Keystone	109	9/24/2007	email	SAF	3.13.6 Mitigation Measures includes numerous recommendations for spill prevention, control and countermeasures. Keystone will comply with these recommended measures.	No response needed if Keystone agrees to the mitigation measures.
924	Keystone	110	9/24/2007	email	HYD	ES.6.7 states "There is a risk that non-native species could be introduced into receiving waters during the disposal of hydrostatic testing water." Keystone has committed to no basin transfers of hydrostatic water. Therefore non-native species would not be introduced into receiving waters during the disposal of hydrostatic testing water.	Revised text in section ES-6.7 in response to Keystone's commitment.
925	Keystone	110	9/24/2007	email	EDT	ES.6.9 states "Keystone is planning to undertake construction over an 18 month period during which agricultural lands in the ROW would not be farmed." Although the overall construction of the Project is planned over a period of 18 months, construction at any given point will take place over a short period of time. Accordingly, the text should be revised to "Keystone is planning to undertake construction over an 18 month period. During a short portion of that period while construction is underway in a specific area, agricultural lands in that area of the ROW would not be farmed.	Comment accepted and DEIS text changed as requested
926	Keystone	110	9/24/2007	email	LND	ES.6.9 Keystone will restore all disturbed CRP lands in consultation with the local FSA and NRCS offices. All CRP lands would therefore remain eligible for continued enrolment in the programs. Should any lands not be restored, such as forested CRP lands within the permanent ROW or should a pump station be sited on CRP lands, Keystone will compensate the landowners for demonstrated costs or lost revenue associated with the CRP programs. Keystone will work with each individual landowner where CRP lands are encountered. Keystone will assist landowners to inform the local FSA and to develop restoration plans to the satisfaction of the FSA and NRCS.	Comment acknowledged; DEIS text changed to reflect the information stated here, and Keystone's role in facilitating landowners to contact local FSA offices.
927	Keystone	110	9/24/2007	email	CUL03	ES.6.11 If Keystone discovers potentially NRHP eligible sites, Keystone will consider site avoidance, or further studies to confirm site eligibility. If, after further study, a site is determined to be eligible by the SHPO and the DOS, then further options, including further investigations under an approved treatment plan will considered. Keystone will construct across NRHP eligible sites only if approvals have been received from the SHPO and the DOS.	Comment accepted and DEIS text changed as requested
928	Keystone	110	9/24/2007	email	EDT	ES.6.14 The executive summary section for Reliability and Safety is very confusing as it goes back and forth continuously between construction and operation impacts. To avoid confusion, the section should be restructured to first discuss construction matters and then discuss operation matters.	Comment accepted and DEIS text changed as requested

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
929	Keystone	110	9/24/2007	email	EDT	Section 1.2. Keystone believes that this section should be restructured and modified to better reflect the purpose and need for the project. Keystone submits that the primary purpose of the project is to allow the replacement of crude oil from other sources (currently discussed in section 1.2.3). This rationale should be presented first. The secondary rationales (Western Canadian Sedimentary Basin crude oil supply and the U.S. crude oil market demand) should be presented after and qualified as such. Keystone is providing an edited version of Section 1.2 to address that concern (See Attachment 1).	No change to DEIS
930	Keystone	110	9/24/2007	email	T&E	Section 1.3.2.5. In discussing the role of USFWS, there is no mention of the Migratory Bird Treaty Act or other potentially applicable statutes. The following sentence should be added at the end of the paragraph: In addition, the USFWS is responsible for the implementation of the provisions of the Migratory Bird Treaty Act, 16 U.S.C. 703, and the Bald and Golden Eagle Protection Act, 16 U.S.C. 688(a).	Revised text in Section 1.3.2.5 as suggested.
931	Keystone	110	9/24/2007	email	EDT	Section 1.3.2.8 should be revised to state that WAPA will need to comply with NEPA in responding to requests from its Network customers, and that such compliance is being satisfied by WAPA using DOE procedures under NEPA to adopt this EIS.	The statement is correct as written. WAPA would need determine on a case by case basis if proposed modifications are adequately covered by this EIS or if other measures are required to comply with NEPA.
932	Keystone	110	9/24/2007	email	EDT	Section 1.7 States "When actual power contracts are consummated and specific transmission line and substation locations are identified, additional NEPA compliance analyses may be required prior to the issuance of construction permits." This should be omitted as it amounts to volunteering a legal opinion in the absence of any facts that might warrant such a conclusion. It also undercuts WAPA's reliance and adoption upon this document.	Section 1.7 has been revised to read: When actual power contracts are consummated and specific transmission line and substation locations are identified, WAPA would determine if this EIS provides the required compliance with NEPA or if additional NEPA compliance analyses may be required prior to the issuance of construction permits.
933	Keystone	110	9/24/2007	email	EDT	Table 1.5.1-1 References to "expected life of the pipeline" in paragraph 1 and to "use of abandoned rail ROWs" in paragraph 3 should be deleted to ensure congruity of the table with the content of the respective chapters.	Comment accepted. Table 1.5.1-1 has been revised as suggested.
934	Keystone	110	9/24/2007	email	EDT	Table 1.6-1 Some of the information contained in the referenced table is inaccurate. Keystone has submitted a revised table, labeled Table 1.4-1, in the revised ER table submitted in the September 2007 Supplemental Filing.	Comment accepted. Table 1.6-1 has been revised to include the provided updated information.
935	Keystone	110	9/24/2007	email	EDT	Section 2.1 All reference to "approximately 600,000 bpd" should be changed to "591,000 bbl".	Comment accepted and DEIS text changed as requested
936	Keystone	110	9/24/2007	email	EDT	Section 2.1.2.3 As shown in the preferred route filed as part of the September 10, 2007 Supplemental Filing, Keystone is not proposing to construct a lateral to Ponca City on the Cushing Extension.	Comment accepted and DEIS text changed as requested
937	Keystone	110	9/24/2007	email	EDT	Section 2.2.1.2 Keystone will comply with local open burning ordinances. Where open burning is permitted, such burning would occur within the 110-foot wide cleared construction ROW, which would provide an adequate distance buffer from adjacent agricultural or forested lands to prevent the spread of fire. Keystone would not open burn adjacent to any structure that abuts the ROW. Burning debris in pipes and barrels is impractical and unnecessary.	Comment accepted and DEIS text changed as requested
938	Keystone	110	9/24/2007	email	ERO	Section 2.2.1.2 Keystone will install sediment control structures along the construction right of way edges prior to vegetation removal. Sediment control structures across the right of way will be installed immediately after vegetation removal as specified in Sections 4.5 and 7.7 of Keystone's CMR Plan.	Comment accepted. FEIS text will reflect Keystone's commitment.
939	Keystone	110	9/24/2007	email	SOI	Section 2.2.1.3, paragraph 2. In the first sentence, the words "in all cases" should be replaced by "in agricultural and certain wetland areas, as specified in Keystone's CMR Plan." Further, the location of the topsoil placement and storage location will be based on the topography and other obstructions and may not always be as shown in the typical drawings shown in Figures 2.21-2 through Figure 2.1-9.	Comment accepted. FEIS text will reflect Keystone's commitment.
940	Keystone	110	9/24/2007	email	SOI	Section 2.2.1.3, para 3. Hard and soft plugs will be installed in consultation with affected landowners.	Comment accepted. FEIS text will reflect Keystone's commitment.
941	Keystone	110	9/24/2007	email	WAT	Section 2.2.2.1 states "Permits will be required to cross water distribution systems. In South Dakota, the Keystone Mainline Project would cross the Bon Homme-Yankton water delivery utility lines at 27 locations. The lines that would be crossed are PVC or iron pipes ranging in diameter from 1.5 to 18 inches. The water district requires a separation distance of 18 inches, and cathodic protection must be provided by Keystone to protect iron lines and miscellaneous vaults. Permits will be required that detail the responsibilities, process, and methodology associated with crossing these and all water lines." Keystone will provide the pipe separation that is negotiated with the Bon Homme-Yankton water delivery utility.	Comment acknowledged.
942	Keystone	110	9/24/2007	email	FSH	Section 2.2.2.3 para 4, Keystone does not agree that temporary bridges need to be installed across all perennial waterbodies. The need for temporary bridges will be based on the quality of the fishery in the stream (if present), consistent with Detail 12a in the Keystone CMRP.	This wording is straight from their BA (pg 2-15). Equipment bridges are not required at **minor** waterbodies unless it supports a state designated fishery (CMRP, pg 48). No change in the text in the DEIS.
943	Keystone	110	9/24/2007	email	WET	Section 2.2.2.4 states "Clearing of vegetation in wetlands would be limited to trees and shrubs cut flush with the ground surface and removed from the wetland. Stump removal, grading, topsoil segregation, and excavation would be limited to the area immediately over the trench." The statement should be revised to: "Clearing of vegetation in palustrine forested wetlands and shrub/scrub wetlands…."	Revise text in Section 2.2.2.4 as suggested.
944	Keystone	110	9/24/2007	email	EDT	Section 2.2.4 states "Keystone proposes to construct the Mainline Project using four to five construction spreads and the Cushing Extension using one or two spreads (Table 2.2-4). Construction would occur simultaneously on all Mainline Project spreads. Each spread would require 15 months to complete." The statement is inaccurate and should be replaced with the following: Keystone proposes to construct the Mainline Project using eight construction spreads and the Cushing Extension using three spreads (Table 2.2-4). Construction would occur simultaneously on Spreads 1, 2, and 3 in 2008, and Spreads 4, 5, 6, 7, and 8 in 2009. Each spread would require 6 months to complete. Further, similar inferences to the number of spreads occur in the DEIS and should be amended to reflect the correct number of spreads and time required for each spread.	Comment accepted and DEIS text changed as requested
945	Keystone	110	9/24/2007	email	SAF	Section 2.3.2 para1, 49 CFR 195.56(8) indicates that a report must be filed for a reportable leak, including the anticipated schedule for restarting the flow. However, the DOT regulations do not require DOT approval prior to resumption of operation for the affected segment.	Comment accepted and DEIS text changed as requested
946	Keystone	110	9/24/2007	email	SAF	Section 2.3.2.1 states "Keystone would be required to prepare site-specific ERPs for the system, which would be submitted to and approved by OPS prior to operation." Prior to operation, Keystone will submit a system-wide ERP, which will be reviewed by the OPS. The statement should be revised to "Keystone would submit an ERP for the system to OPS for its review prior to operation.	Comment accepted and DEIS text changed as requested
947	Keystone	110	9/24/2007	email	EDT	Section 2.3.2.2 para 4, The last two bullets should be deleted from the DEIS since natural resource damage assessments would only occur in the event a state files for such damages in the event of a very large spill. It is therefore a separate action from the remediation steps previously described. The text implies that natural resource damages would always be assessed, which is not accurate.	Comment accepted and DEIS text changed as requested

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
948	Keystone	110	9/24/2007	email	SOI	Section 3.2.2.1 para 2 Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for any losses associated with decreased productivity resulting from pipeline operation.	Comment accepted. FEIS text will reflect Keystone's commitment.
949	Keystone	110	9/24/2007	email	SOI	3.2.2.1 In the event Keystone encounters previously contaminated soils during construction, Keystone will stop work immediately, contact the appropriate state agency, and consult with the agency with respect to an acceptable plan of action. While Keystone may elect to remediate areas of pre-existing contamination, Keystone is not responsible for such remediation and in most cases will develop a route deviation to avoid the contaminated area. Keystone will also notify the landowner if contamination if discovered.	Comment accepted. FEIS text will reflect Keystone's commitment.
950	Keystone	110	9/24/2007	email	SOI	3.2.2.2 Keystone recognizes its responsibility to restore agricultural productivity on the pipeline ROW. Keystone's easement agreements with landowners require Keystone to restore the productivity of the ROW and to compensate landowners for demonstrated losses from decreased productivity resulting from pipeline operation. See Keystone's comment #7 in Table A.	Comment accepted. FEIS text will reflect Keystone's commitment.
951	Keystone	110	9/24/2007	email	SOI	3.2.2.1 Keystone will be providing native seed mixes for revegetation efforts but not plants.	Comment accepted. FEIS text will reflect Keystone's commitment.
952	Keystone	110	9/24/2007	email	EDT	3.3.2.2 Keystone proposes to cross the Pembina River using the HDD method. The Pembina River should therefore appear in the first bulleted list rather than the second one.	Comment accepted and DEIS text changed as requested
953	Keystone	110	9/24/2007	email	LND	3.4.2 Keystone is preparing a crossing plan for the Riverlands Management Area. This plan will include construction details and environmental protection measures similar to those included in the Carlyle Lake crossing plan previously submitted to the USACE and the Illinois DNR. Keystone will address any mitigation requirements directly with the USACE and the affected state agencies.	Comment acknowledged; DEIS text changed to reflect that Keystone is now avoiding the Riverlands Environmental Demonstration Area entirely.
954	Keystone	110	9/24/2007	email	WAT	3.4.2 States "Directionally drill large river crossings to minimize effects on streamside wetlands or floodplain forests" The statement should be qualified to indicate "except as indicated in section 3.3.2.2". Section 3.3.2.2 of the DEIS contains a list of water body with widths greater than 100 feet where HDD is not proposed.	Revised as suggested on page 3.4-13.
955	Keystone	110	9/24/2007	email	WAT	3.4.2 Normally success is based on meeting or exceeding a given density level compared to similar and adjacent off ROW total density. This typically will consist of any wetland species without regard to distribution of species within the wetland.	Revised "less than" to "at least" as suggested on page 3.4-15.
956	Keystone	110	9/24/2007	email	WET	3.4.3 states "Impacts to forested wetlands would be long-term and in Missouri typically would require a 6:1 compensatory mitigation for conversion and temporal loss (Doyle Brown, MDC, April 27, 2007)." Specific mitigation formulas will be developed in discussions with the states and the USACE, based on the quality of the habitats affected. No specific ratios have been determined or agreed to at this time.	Added the following to Section 3.4.3: "Many state and federal agencies have expressed concerns and recommendations for compensatory mitigation of wetland losses. The requirements for compensatory mitigation would depend on final decisions on jurisdictional delineations." This statement is followed by the recommendation for Keystone to develop a plan to compensate for permanent wetland losses that includes various recommendations provided by several agencies (pages 3.4-15 to 3.4-16).
957	Keystone	110	9/24/2007	email	EDT	3.5.5 The word "plan" should be replaced by "plant".	Comment accepted and DEIS text changed as requested
958	Keystone	110	9/24/2007	email	SOI	Section 3.5.5.1 The bullets should be qualified, as follow: • In non-cultivated agricultural lands, the actual depth of topsoil up to 12 inches shall be stripped from the areas to be excavated unless otherwise agreed to with the landowner; and • To prevent wind erosion, topsoil stockpiles will be tackified as necessary using either water or a suitable tackifier.	Comment accepted. FEIS text will reflect Keystone's commitment.
959	Keystone	110	9/24/2007	email	VEG	3.5.5.2 The section should indicate that "All tree wastes, stumps, tree crown, brushes, branches, and other forest debris will be either burned, chipped (using a mobile chipper), buried (with landowner approval), or removed from the ROW.	Revised text in Section 3.5.5.2 as suggested.
960	Keystone	110	9/24/2007	email	LNU	3.5.5.3 states "Keystone has committed to avoiding impacts to the three CRP lands potentially crossed by the Project ROW." The sentence should be deleted and replaced with: "Keystone has committed to avoiding two of the three NRCS Wetland Reserve Program (WRP) lands potentially crossed by the pipeline ROW. The NRCS has agreed that Keystone may cross the third WRP tract, subject to an appropriate restoration agreement."	Comment acknowledged; DEIS text changed accordingly.
961	Keystone	110	9/24/2007	email	VEG	3.5.5.4 The last sub-bullet (i.e., "monitoring restoration…") should be qualified to indicate "As required by federal and state regulators."	Revised text in Section 3.5.5.4 as suggested.
962	Keystone	110	9/24/2007	email	EDT	3.6.5 states "However, if disturbance involved important remnant habitats, such as prairie chicken leks or cricket frog marshes, habitat loss would significantly affect local populations" There is no basis to make such an absolute statement. The sentence should be made conditional by the substitution of "might" for "would."	No change to text in section 3.6.5. By definition the loss of "important remnant" habitats would be locally significant.
963	Keystone	110	9/24/2007	email	EDT	3.7.3 In order to accurately reflect Keystone CMR Plan, the section should be qualified by adding "unless appropriate Federal, State, and local permitting agencies grant written permission." See section 8.4 of the CMR Plan, page 59, last paragraph.	Text changed in DEIS.
964	Keystone	110	9/24/2007	email	T&E	3.8.1.1 This section should be revised, as follows, to reflect the latest developments and continued protection under the B&GEPA: The bald eagle is no longer federally listed as threatened; a final rule removing the bald eagle from the federal list of threatened species was adopted on June 28, 2007. However, it remains listed as threatened in South Dakota, Nebraska, Kansas, Illinois, and Oklahoma; and is state listed as endangered in Missouri. Historically, populations of bald eagles were drastically reduced by low productivity from the bioaccumulation of pesticides. Since organochlorine pesticides such as DDT have been banned, bald eagle numbers have been increasing—leading to the species being de-listed, as "recovered."	Revised text in Section 3.8.1.1 as suggested.
965	Keystone	110	9/24/2007	email	T&E	3.8.1.6 Keystone does not perform seismic exploration or timber harvesting operations. Based on prior discussions with the USFWS, and previous project experience, Keystone does not agree with a 2.5 mile buffer. For bald eagle communal winter roosts, USFWS recommends that disturbance be restricted within 1 mile of known communal winter roosts from November 1 to April 1. USFWS recommends that habitat-altering activities be prohibited within 0.5 mile of active roost sites year-round.	The 2.5 mile buffer was specific to blasting and was in correspondence related to the consultation between Keystone and USFWS.
966	Keystone	110	9/24/2007	email	HYD	3.8.1.6 It is not possible to conduct 3 separate hydrotests with this water in a 7 day period. The water will be returned as required by the permitting agency.	Acknowledged and removed from DEIS. This information was provided by Keystone. Section 3.8.1.6 was revised to include pertinent information from Keystone's Hydrostatic test plan, along with USFWS comments.
967	Keystone	110	9/24/2007	email	LNU	3.9.3.2 CRP lands crossed by the corridor would not be required to exit the program. Keystone will work with any affected landowners and the local FSA and NRCS offices to develop restoration programs that preserve eligibility in the program, as discussed with the FSA, and has been the practice in the past. In rare circumstances, such as in the case of a pump station sited within CRP lands, some lands may not be returned to the program. Should this occur, Keystone will fully compensate landowners for any costs and lost revenue associated with removal from the program	Comment acknowledged; DEIS text changed to reflect the information stated here, and Keystone's role in facilitating landowners to contact local FSA offices.
968	Keystone	110	9/24/2007	email	LNU	3.9.3.2 Construction activities on CRP lands will be conducted as agreed with the agencies. This may or may not include a restricted construction window.	DEIS text changed to omit the general use of "primary nesting season" and to include consultation with agencies on construction timing.
969	Keystone	110	9/24/2007	email	EDT	3.9.3.2 states "During operational life of Keystone…trees and brush would not be allowed to revegetate the permanent ROW." Portions of the ROW may be allowed to revegetate. Therefore, the statement should refer to the "maintained ROW" rather than the "permanent ROW."	Comment acknowledged; No change to DEIS.
970	Keystone	110	9/24/2007	email	LNU	3.9.3.2 Since only a portion of the permanent ROW through vegetative windbreaks, shelterbelts, and living snow fences would be permanently affected, there is no reason to believe that construction and operation would result in a significant impact (see page 3.0-1 of the DEIS where a significant impact is defined as "an impact resulting in a substantial adverse change in the environment"). Accordingly, the words "significant impacts" should be replaced by "but highly limited impacts."	Comment acknowledged. DEIS text changed to refer to impacts in vegetative windbreaks and shelterbelts as "permanent, but localized."
971	Keystone	110	9/24/2007	email	EDT	3.9.3.7 Keystone has already acquired a Special Use Permit from the NPS to conduct geotechnical drilling. This text should be deleted from the DEIS.	Comment accepted and DEIS text changed as requested

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Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
972	Keystone	110	9/24/2007	email	EDT	3.9.3.7 states "These activities would result in long-term impacts on vegetation and would induce habitat fragmentation, which would decrease enjoyment of private and public recreation resources" There is no basis to make such an absolute statement. The sentence should be made conditional by the substitution of “might” for “would.”	Comment accepted and DEIS text changed as requested
973	Keystone	110	9/24/2007	email	LNU	3.9.3.7 There is no basis to suggest that permanent clearance of portions of forested areas in the permanent ROW would result in a substantial adverse change in recreational use of these areas (see page 3.0-1 of the DEIS where a significant impact is defined as “an impact resulting in a substantial adverse change in the environment”). Accordingly, the words “significant impacts” should be replaced by “but highly limited impacts.”	Comment acknowledged. DEIS text changed to refer to impacts in forested areas as "permanent, but localized."
974	Keystone	110	9/24/2007	email	LNU	3.9.3.7 There is no basis to suggest that construction and operation impacts on wooded conservation areas would be significant. Accordingly, the word “significant” should be replaced by “but highly limited.”	Comment acknowledged. DEIS text changed to refer to impacts in wooded conservation areas as "permanent, but localized." For construction ROW parts of wooded conservation areas, the impact will be "long-term, but localized."
975	Keystone	110	9/24/2007	email	LNU	There is no basis to suggest that permanent clearance of portions of forested areas in the permanent ROW through wildlife management areas would result in a substantial adverse change in these areas, or of hunting use of these areas (see page 3.0-1 of the DEIS where a significant impact is defined as “an impact resulting in a substantial adverse change in the environment”). Accordingly, the words “significant impacts” should be replaced by “but highly limited impacts.”	Comment acknowledged. DEIS text changed to refer to impacts in forested areas as "permanent, but localized."
976	Keystone	110	9/24/2007	email	EDT	3.10.2 Police assistance will only used on a case by case basis. Generally, construction personnel can control traffic to ensure public safety.	Comment acknowledged; text changed to indicate that contractor personnel will be used to control traffic during most construction activities; local police assistance would be used as necessary.
977	Keystone	110	9/24/2007	email	VAL	3.10.2.1 in the property damage paragraph.....There is no basis to conclude that Keystone’s acquisition of permanent easements along the ROW would cause any permanent reductions in agricultural production or values in the region. The mitigation and reclamation measures set forth in the CMR Plan are designed to return agricultural lands to their pre-construction level of productivity in a few years. Moreover, because agricultural lands will be returned to pre-construction level of productivity, there will be no permanent reduction in the value of those lands.	Comment acknowledged, text changed as requested
978	Keystone	110	9/24/2007	email	VAL	3.10.2.2 The vast majority of the lands impacted by the Keystone project are agricultural. Because agricultural lands will be returned to pre-construction level of productivity, there will be no permanent reduction in the value of those lands. In the event that a landowner demonstrates that installation of the pipeline negatively impacts a non-agricultural development opportunity, any demonstrated diminution in the value of that land will be compensated in the easement acquisition process.	Comment acknowledged, text changed as requested
979	Keystone	110	9/24/2007	email	RUR	3.10.2.2 This section creates the misleading impression that the pipeline is routed through rural areas because it is preferable to expose a smaller number of rural residents to risk of injury, as opposed to a larger number of residents in more densely populated areas. Keystone submits that, because of the stringent safety and integrity measures incorporated in the design, construction, and operation of the pipeline, and the governing PHMSA pipeline safety regulations, there is not a significant risk of injury to residents along the route, whether in rural or residential areas. Moreover, the PHMSA pipeline Class regulations are based on the reduced likelihood of third-party damage to pipelines in rural areas, not a preference for exposing rural residents to a risk of injury.	Comment acknowledged, text changed as requested
980	Keystone	110	9/24/2007	email	CUL01	3.11.1.2 Keystone met with the SD SHPO on June 21, 2007, to review the comments on the draft December 2006 inventory report. Subsequent to the meeting, Keystone made revisions to the report based on SHPO comments and re-submitted the revised draft to the SD SHPO and DOS in August 2007.	DEIS will be updated to reflect most recent consultation between the DOS and the SD SHPO.
981	Keystone	110	9/24/2007	email	CUL01	Section 3.11.1.5 states "USACE sent a reply to ARG on March 8 2007 that agreed with the survey effort but requested additional subsurface testing at one of the three archeological sites found within the area (Site ARG-02; see Table 3.11.2-8)." Keystone conducted additional site testing at site ARG-2 in spring 2007. The results of the site testing were submitted to the USACE on July 6, 2007 and to the DOS in August 2007.	DEIS will be updated to reflect the most recent cultural resource survey information provided by the Applicant and reviewed by DOS.
982	Keystone	110	9/24/2007	email	CUL04	3.11.1.6 states "The SHPO responded in a letter dated March 1, 2007 that agreed with the essential components of the plan but noted how the SHPO expected historic structures and buildings to be recorded." Keystone will be submitting a full technical report to the OK SHPO in September 2007 which will address these issues.	DEIS will be updated to reflect the most recent cultural resource survey information provided by the Applicant and reviewed by DOS.
983	Keystone	110	9/24/2007	email	CUL03	3.11.2 Keystone cannot make a blanket commitment to avoid all cultural sites. If Keystone discovers potentially NRHP eligible sites, Keystone will consider site avoidance, or further studies to confirm site eligibility. If a site is determined to be eligible by the SHPO and the DOS, then further options, including treatment of the site will considered.	DEIS will be reworded to reflect DOS's efforts to avoid, minimize adverse effects to historic properties in a manner consistent with NEPA and Section 106. If Keystone discovers potentially NRHP eligible sites during additional survey work conducted under the Programmatic Agreement, Keystone shall consider site avoidance, or further studies to confirm site eligibility. If a site is determined to be eligible by the DOS, then further options, including treatment of the site will be considered by the DOS in consultation with all consulting parties under the Programmatic Agreement.
984	Keystone	110	9/24/2007	email	EDT	3.11.2 states "If adverse effects do occur, they will be resolved through consultation with the Advisory Council on Historic Preservation" The statement should state that “If any adverse effects do occur, they would be resolved through the application of Programmatic Agreement.”	Statement will be modified to read If any adverse effects do occur, they would be resolved under the Programmatic Agreement and through consultation with all consulting parties.”
985	Keystone	110	9/24/2007	email	CUL01	3.11.2.8 states "Before construction, Western would perform a Class III (100% of surface) cultural survey on all areas to be disturbed " The utilities will construct additional substations and power lines in accordance with regulatory requirements. It is not within Keystone’s ability to control the work of an independent utility provider.	WAPA will be conducting connected actions that require Section 106 compliance. WAPA will be individually responsible for complying with Section 106 when those actions occur.
986	Keystone	110	9/24/2007	email	CUL01	3.11.2.8 The utilities will construct additional substations and power lines in accordance with regulatory requirements. It is not within Keystone’s ability to control the work of an independent utility provider.	WAPA will be conducting connected actions that require Section 106 compliance. WAPA will be individually responsible for complying with Section 106 when those actions occur.
987	Keystone	110	9/24/2007	email	CUL04	3.11.3 This section should be updated to reflect the result of consultations State has held with tribes officials regarding Unanticipated Discoveries.	DEIS will be updated to reflect the most recent consultation efforts by the DOS with Indian Tribes and other consulting parties.
988	Keystone	110	9/24/2007	email	CUL01	3.11 overall comment. The various survey status tables and related discussions do not appear to reflect the latest information provided by Keystone. Status reports containing updated site/survey information for each state were provided in late August 2007. Full technical reports containing updated site/survey information for the Nebraska Mainline, Nebraska Cushing, and Kansas Cushing were also provided in late August 2007. The revised South Dakota 2006 Inventory Report was sent in mid-August 2007. The remaining full technical reports with updated site/survey information for North Dakota, Missouri, Illinois, and Oklahoma will be sent at the end of September 2007. The schedule for these report submittals was provided on August 27, 2007. The FEIS should reflect the latest information contained in these filings.	DEIS will be updated to reflect the most recent cultural resource survey information provided by the Applicant and reviewed by DOS.
989	Keystone	110	9/24/2007	email	CUL08	3.11.5.3 Keystone’s proposed pipeline centerline is located 50 feet to the east of the Pleasant Hill Cemetery fence line. Neither the temporary work space nor any additional temporary work space will impact the cemetery.	DEIS will be updated to reflect the most recent cultural resource survey and routing information provided by the Applicant and reviewed by DOS.
990	Keystone	110	9/24/2007	email	CUL08	3.11.5.4 Keystone’s proposed pipeline route is 206 feet west of the Brethren in Christ Cemetery. Neither the temporary work space nor any additional temporary work space will impact the cemetery.	DEIS will be updated to reflect the most recent cultural resource survey and routing information provided by the Applicant and reviewed by DOS.
991	Keystone	110	9/24/2007	email	CUL08	3.11.5.5 Keystone’s proposed pipeline route is 137 feet north of the Barnett Cemetery. Neither the temporary work space nor any additional temporary work space will impact the cemetery.	DEIS will be updated to reflect the most recent cultural resource survey and routing information provided by the Applicant and reviewed by DOS.
992	Keystone	110	9/24/2007	email	CUL01	3.11.5.6 JM-14 is recommended as ineligible for the NRHP; therefore, no adverse effects will occur. Once access has been obtained at 11MS0178, subsurface testing will be conducted and the results submitted to the SHPO and DOS. Site testing at ARG-2 was conducted in June and the results of the testing were submitted to the USACE and DOS in July and August, respectively.	DEIS will be updated to reflect the most recent cultural resource survey information provided by the Applicant and reviewed by DOS.
993	Keystone	110	9/24/2007	email	AIR01	3.12.1.3 Keystone is providing an edited version of the section to update the status of air quality permitting for the Wood River Refinery (See Attachment 2).	Comment accepted and DEIS text changed as requested

TABLE 2 COMMENTS TAKEN FROM LETTERS AND EMAILS

Comment Number	Commentor Name	Letter Number	Date	Comment Method	Issue Code	Comment	DOS Response
994	Keystone	110	9/24/2007	email	NOI02	3.12.2.3 Since noise levels are regulated and controlled on a State or local level the EIS should reference this and the fact that Keystone will comply with all these regulatory requirements and any agreements made with these regulators.	As per discussion with Keystone original text not changed - comment rejected
995	Keystone	110	9/24/2007	email	EDT	3.13.1.3 CSA Z662-03 and Z662.1-03 are Canadian standards that are nor applicable in the U.S. Any references to these standards should be removed from the DEIS.	Comment accepted and DEIS text changed as requested
996	Keystone	110	9/24/2007	email	OIL	3.13.2.3 These examples of spill do not reflect the risks associated with the Keystone pipeline project and are thus not relevant to the EIS.	The section encompasses the *types* of risks that Keystone pipeline will face in construction and operation in those states traversed. There is nothing unique about the Keystone pipeline location or operation compared to other pipelines in the region but it is newer, subject to more stringent standards, and under more public scrutiny than older pipelines were at the time of construction. The *magnitude* of risks from the Keystone pipeline, in terms of frequency, size and duration is generally likely to be less than those obtained from the PHMSA data base because of the current regulatory requirements. Even using the statistics and causes from the PHMSA data base, the EIS analyses show that the risk of oil spills from the Keystone pipeline are small and unlikely to result in a significant environmental impact. In addition, we did parse many of the spills from the data base when they were associated with events that were very dissimilar to the operation of the Keystone pipeline.
997	Keystone	110	9/24/2007	email	oil	The DEIS notes that the projected spill incidents shown at Table 3.13.3-1 is an order of magnitude higher than the spill frequency provided by Keystone as shown at Table 3.13.3-2. Table 3.13.3-1 was developed based on the PHMSA incident database and includes a substantial amount of older pipe, which was not constructed, maintained, or operated using modern materials and techniques. Approximately 65 percent of oil pipeline infrastructure in the U.S. was constructed prior to 1970. Accordingly, the PHMSA database is not representative of newly constructed pipelines. The DNV study submitted by Keystone was based on the same database, but was modified to account for improved pipeline materials and coatings, hydrostatic testing, cathodic protection, depth of cover, route location, and other risk modifying factors. This accounts for the difference between the tables. Even with these modifications, the analysis remains conservative.	The Keystone comment is generally relevant as written and follows on from the previous one here. However, the DNV analysis provided by Keystone did not include the numerous external causes of oil spills such as floods and erosion, idiots with guns [Alyeska Pipeline 400 spill] or explosives, earthquakes, saboteurs and terrorists, etc. These are all realities that have caused spills and we do not believe they can be ignored in an EIS. It may be difficult to obtain adequate information to calculate a risk to the Keystone pipeline from each of these factors alone or in aggregate, and to compare that risk to those analyzed in the DNV report. This uncertainty may be covered by they conservative nature of the analyses conducted by both DNV and ENTRIX in the DEIS. In any case, the probability of an oil spill that would affect the natural environment is still very low.
998	Keystone	110	9/24/2007	email	EDT	3.13.5.3 states "During the life of the Keystone Project, potential minor short- to long-term groundwater quality degradation is possible from equipment and vehicle spills or leaks. Routine operation and maintenance is not expected to affect groundwater resources; however, if a crude oil release occurred, crude oil could migrate into subsurface aquifers and into areas where these aquifers are used for water supplies. Keystone's draft ERP (Appendix C of the main document) describes actions to be taken in the event of a crude oil release or other accident. As noted earlier, the ERP would be finalized prior to initiation of construction." The last word in the statement should be operation instead of construction.	Comment accepted and DEIS text changed as requested
999	Keystone	110	9/24/2007	email	OIL	Keystone believes that Chapter 3.13 would benefit from including a discussion of the various spill prevention measures and emergency measures that Keystone will be implementing. This would provide more context to the extensive discussion of oil spill risk currently contained in the chapter. In order to provide this context, Keystone is providing a proposed addition for insertion prior to Section 3.13.5 that contains a summary discussion of the processes, procedures, and systems that it will implement to prevent, detect, and mitigate potential oil spills (See Attachment 3).	Attachment 3 contains relevant information and could be included as response to a comment. However, it is in need of serious technical editing for clarity, composition, grammar, spelling, punctuation, format, and of technical review to delete irrelevant material. The Keystone section (Attachment 3) with edits could be inserted as section 3.13.4.6 because it is a "Factor Affecting Spill Impacts". That is, the human response is as important or more important than some of the other factors when it comes to the ultimate environmental impact of a spill.
1000	Keystone	110	9/24/2007	email	CME02	3.14.2.1 The existing WEB Water Development Association water service is not a cumulative impact and should not be discussed in this section. In a NEPA sense, Keystone and the WEB Water Development Association are not "co-located" any more than a proposed shopping center or other structure may be anticipated along the ROW. The WEB service was not planned in order to be near the pipeline (fuel source), nor is there any interdependence between it and Keystone.	Comment acknowledged. No change to DEIS.
1001	Keystone	110	9/24/2007	email	CME02	3.14 The numbers contained in the reference are incorrect. There will be a total of 106 acres of land required for above-ground facilities for the Keystone mainline and 18 acres of land required for the Cushing Extension. Please see revised ER tables filed on September 10, 2007.	Comment accepted and DEIS text changed as requested
1002	Keystone	110	9/24/2007	email	CME02	3.14.3.12 The DEIS suggests that there could be cumulative air quality impacts from Keystone pump stations. Because all pump stations will be electric powered, there will be no air quality impacts from pump stations.	Comment accepted and DEIS text changed as requested
1003	Keystone	110	9/24/2007	email	ALT	Section 4.1 Keystone believes that this section should be restructured and modified to better reflect the purpose and need for the project. Keystone is providing an edited version of the No Action Alternative discussion to reflect the focus on prevention of energy and economic disruption if crude oil supply from less reliable supply sources were halted or curtailed (See Attachment 4).	Comment acknowledged no change to text
1004	Keystone	110	9/24/2007	email	EDT	4.1.1 states "The final design alignment would, where feasible, consider these minor route variations and would attempt to address additional landowner requirements, such as crossing property along quarter section lines." The referenced statement should end after "landowner requirements" rather than speculate on the typos of concerns landowners may raise.	Comment accepted and DEIS text changed as requested
1005	Keystone	110	9/24/2007	email	EDT	Table 4.4-1 should appear prior to Table 4.4-2.	Table has been relocated to the proper position.
1006	Keystone	110	9/24/2007	email	ALT	Table 4.4-1, which shows proposed route variations for the Keystone Project, should include the Audubon reroute on Cushing extension, which is currently not included.	Update FEIS incorporates most up-to-date routes and variations.
1007	Keystone	110	9/24/2007	email	EDT	5.9.1 Although the overall construction of the Project is planned over a period of 18 months, construction at any given point will take place over a short period of time. Accordingly, the text should be revised to "Keystone is planning to undertake construction over an 18 month period. During a short portion of that period while construction is underway in a specific area, agricultural lands in that area of the ROW would not be farmed."	Comment accepted and DEIS text changed as requested
1008	Keystone	110	9/24/2007	email	EDT	General. The DEIS makes several references to compressor stations. These should be changed to refer to pump stations.	Comment accepted and DEIS text changed as requested
1009	Keystone	110	9/24/2007	email	EDT	General. The DEIS makes several references to densitometer sites, which are no longer part of the project. These references should be removed.	Comment accepted and DEIS text changed as requested

TABLE 3 - ISSUE CODES AND CORRESPONDING ISSUE STATEMENTS

Issue Code	Issue Statement
ACK	Comment Acknowledged; subject matter determined not to be substantive; generally no change to DEIS
AIR01	Concerned about air quality impacts of construction equipment.
AIR02	Concerned about air quality impacts of refinery upgrades and of refining tar sands
ALT	The range of alternatives presented in Chapter 4 is insufficient, the routes need to be explained better belongs in a different EIS section
ATT	Concerned about animals, insects or plants being attracted to the pipeline and causing impacts, includes noxious weeds and introduced species
CME01	Concerned about cumulative effects of several pipelines through their land/area, or of impacts due to connected actions
CME02	The DEIS should analyze impacts of mining tar sands on the environment in Alberta
CME03	Analysis is incomplete, not all cumulative actions are identified (roads, transmission lines, highways, railroads)
CON	The EIS should analyze the impacts of other connected actions such as other refineries in the Midwest that would receive keystone crude
CUL01	Cultural resource surveys are incomplete, inconsistent, incorrect, and/or inadequate
CUL02	Consultation under section 106 and with THPOs has been inadequate and should be completed prior to issuing FEIS; consultation to date should be presented accurately, the timeline is unrealistic
CUL03	Cultural Resources are important, mitigation of culture resources impacts is not an option, cultural resources should be avoided
CUL04	Terminology is inappropriate in the document (archaeological sites, historic properties, TCPs, Cultural resources, and Native American Groups etc).
CUL05	Language and content of Section 3.11 are acceptable
CUL06	DOS should be clear about how historic preservation issues addressed in the DEIS will factor into Section 106 review
CUL07	Gov't to gov't consultation as related to tribes should be discussed better in the EIS
CUL08	Questions on Cultural resources section
EDT	Editorial comment on DEIS; specific wording or punctuation change
ELE	Questions/comments regarding electrical lines and service
ENR	Alternative energy forms should be investigated rather than building this pipeline
ERO	Concerned about soil and erosion (construction concerns)
ERP	Comments on Keystone's Emergency Response Plan
EXP	Keystone has no experience operating high pressure crude oil lines
FAV	Favorable; in favor of project; happy with discussions to date
FIG	Comments on figures, general and specific
FLD	Concerned about floodplains
FSH	Concerned about fish habitat or fishery resources
GBW	Pipeline/use of tar sands will contribute to global warming
HUM	Human health effects are not considered in the DEIS
HYD	Concerned about hydrostatic testing or disposal of test waters
HYP	The Hyperion Oil refinery is a connected action and should be included in the analysis
JUS	The Draft EIS fails to assess any environmental justice impact from the project.
KAR	Comments related to geology and karst issues
KEY	Keystone is being unreasonable in wanting access to the whole property not just the right of way
LIA	Liability Issues…who will pay
LND	Loss of land resources, environmentally sensitive area

TABLE 3 - ISSUE CODES AND CORRESPONDING ISSUE STATEMENTS

Issue Code	Issue Statement
LNU	Land use section comments
MIT	Suggested or required mitigation or comments on mitigation plans
MOR	More information needed
NOI01 -	Concerned about noise impacts on animals during construction and operation
NOI02	Concerned about noise impacts on people and towns or residences
NOT	Was not notified that pump station or pipeline would be located close to their land (but not on their land)
OIL	Concerned about spills and leaks from the pipeline causing environmental damage
OPP	Did not have an opportunity to participate in scoping process due to route changes, DEIS comment meets were not easy to attend
ORG	Concerned about effects on organic farming
PER	Additional permits may be required as described
PIP	Concerned about pipe thickness, size, and materials and depth of burial, and abandonment plans
PUM	Concerned about location of pump station near their property
PUR	The purpose of the project is merely to increase oil imports from the tar sands
RDS	Concerned about increased traffic and effects of heavy equipment on local roads
REC	Concerned about impacts on recreational areas or recreation
REG	Concerned about pipeline regulatory oversight and inspections
RES	No local/state response team capabilities, local EMS would be overloaded in an spill or emergency
RTE01	Seward reroute comments
RTE02	Proposed route crosses too much private land
RTE03	Proposed route is environmentally sensitive and should be moved to use existing road or pipeline corridors, or less sensitive areas
RTE04	Does not want pipeline on their property or through their state
RTE05	Proposed route is too close to a farm, irrigation system, center pivot, house, or other facility
RTE06	The route Keystone is proposing now is not the one analyzed in the DEIS
RTE07	Would like a different, specific route considered
RUR	Concerned about disproportionate effects on rural communities which must be protected
SAF	Concerned about safety issues related to the pipeline
SOI	Impacts on soil especially compaction and temperature changes
T&E	Comments regarding T&E species
TAX01	Tax benefits will be out weighed by costs to repair roads and clean up spills etc.
TAX02	There are errors in calculations for taxes, local will not see the benefits of the taxes
UNA	Unable to access paper or electronic copy of EIS, EIS provided too late to review, 45 day review period insufficient, EIS written to quickly
UNE	Pipeline is unnecessary because existing pipelines can be used or there are enough other fuel sources
VAL	Concerned about property value or payment for ROW, or loss of crops
VEG	Comment on vegetation impacts or revegetation methods
VIS	Concerned about visual impacts
WAT	Concerned about impact on water resources (private wells, farm ponds, groundwater, etc.)
WET	Concerned with wetlands impacts and mitigation measures
WIL	Concerned with wildlife impacts and mitigation measures

Appendix B

Construction, Mitigation and Reclamation Plans

1) **Keystone Pipeline Project Construction Mitigation and Reclamation Plan**

2) **Standard Mitigative Measures for Construction, Operation and Maintenance of Western Facilities**

3) **Western Area Power Administration Construction Standards - Standard 13**

KEYSTONE PIPELINE PROJECT

CONSTRUCTION MITIGATION AND RECLAMATION PLAN

Prepared By

April 4, 2006
Rev. 3

1.0 INTRODUCTION

The construction mitigation and reclamation requirements described in this Plan apply to work on all project lands including the following:

- Uplands including agricultural (cultivated or capable of being cultivated) lands, pasture lands; range lands; grass lands; forested lands; lands in residential, commercial, or industrial areas; lands in public rights of way; and lands in private rights of way
- Wetlands
- Waterbodies and Riparian lands

Keystone shall implement the construction mitigation and reclamation actions contained in this Plan to the extent that they do not conflict with the requirements of any applicable federal, state and local rules and regulations and other permits and approvals that are obtained by Keystone for the Project. Additionally, Keystone may deviate from specific requirements of this Plan on specific private lands as determined through negotiations with Landowners or as required to suit actual site conditions as determined and directed by Keystone. All work must be in compliance with federal, State, and Local permits.

2.0 GENERAL CONDITIONS

2.1 Training

The Contractor shall ensure that all persons (Contractor's and Subcontractors' Personnel) engaged in work associated with the pipeline's construction are informed of the construction issues and concerns, and that they attend and receive training regarding these requirements as well as all laws, rules and regulations applicable to the work.

Different levels of training shall be required for different groups of Contractor personnel. Contractor supervisors, managers, field foremen and other Contractor personnel designated by Keystone shall attend a full-day, comprehensive environmental training session. All other Contractor personnel shall attend a one-to-two-hour group training session before the beginning of construction, and during construction as environmental issues and incidents warrant. Additional training sessions shall be held for newly assigned personnel.

All Contractor personnel shall attend the training session prior to entering the construction right-of-way. All Contractor personnel shall sign an acknowledgement of having attended the appropriate level of training and shall display a hard hat sticker acknowledging attendance at environmental training. In order to insure successful compliance, Contractor personnel shall attend repeat or supplemental training, if compliance is not satisfactory or as new, significant issues arise.

All visitors and any other personnel without specific work assignments shall be required to attend a brief safety and environmental awareness orientation.

Experienced, well-trained personnel are essential for the successful implementation of this Plan. Keystone and its Contractors shall undergo prevention and response, as well as safety training. The program shall be designed to improve awareness of safety requirements, pollution control laws and procedures and proper operation and maintenance of equipment.

2.2 Advance Notice of Access to Property Prior to Construction

Prior to the start of construction of the pipeline, Keystone shall provide the Landowner or tenant with a minimum of 24 hours prior notice (unless otherwise negotiated with the landowner and as described in the project line list) before accessing his/her property for the purpose of constructing the pipeline. Additionally, the Landowner or tenant shall be provided with Keystone contact information. Landowners may utilize contact information to inform Keystone of any concerns related to the work. Keystone

Prior notice shall first consist of a personal contact or a telephone contact, whereby the Landowner or tenant is informed of Keystone's intent to access the land. If the Landowner or tenant cannot be reached in person or by telephone, Keystone shall mail or hand deliver to the Landowner or tenant's home a dated, written notice of Keystone's intent. The Landowner or tenant need not acknowledge receipt of the written notice before Keystone can enter the Landowner's property.

2.3 Other Notifications

The Contractor shall notify, in writing, both Keystone's Representative and the authority having jurisdiction over any road, railroad, canal, drainage ditch, river, foreign pipeline, or other utility, at least 48 hours (excluding Saturdays, Sundays, and Statutory Holidays), or as specified on the applicable permit(s), prior to commencement of pipeline construction, in order that the said authority may appoint an Inspector to ensure that the crossing is constructed in a satisfactory manner.

The Contractor shall notify Keystone immediately of any spill of a potentially hazardous substance as well as any existing soil contamination discovered during construction.

The Contractor shall immediately notify Keystone of the discovery of previously unreported historic property, other significant cultural materials, or suspected human remains uncovered during pipeline construction activities.

2.4 Damages to Private Property

Pipeline construction activities shall be confined to the construction right-of-way, temporary work space, and additional temporary work space and approved access routes.

Keystone shall reasonably compensate Landowners for any construction-related damages caused by Keystone which occur on or off of the established pipeline construction right-of-way.

Keystone shall reasonably compensate Landowners for damages to private property caused by Keystone beyond the initial construction and reclamation of the pipeline, to include those damages caused by Keystone during future construction, operation, maintenance, and repairs relating to the pipeline.

2.5 Appearance of Worksite

The construction right-of-way shall be maintained in a clean neat condition at all times. At no time shall litter be allowed to accumulate at any location on the construction right-of-way. The Contractor shall provide a daily garbage detail with each major construction crew to keep the construction right-of-way clear of trash, pipe banding and spacers, waste from coating products, welding rods, timber skids, defective materials and all construction and other debris immediately behind construction operations unless otherwise approved by Keystone. Paper from wrapping or coating products or lightweight items shall not be permitted to be scattered around by the wind.

The traveled surfaces of roads, streets, highways, etc. (and railroads when applicable) shall be cleaned free of mud, dirt or any debris deposited by equipment traversing these roads or exiting from the construction right-of-way.

2.6 Access

Prior to the pipeline's installation, Keystone and the Landowner shall reach a mutually acceptable agreement on the route that shall be utilized by the Contractor for entering and exiting the pipeline construction right-of-way should access to the construction right-of-way not be practicable or feasible from adjacent segments of the pipeline construction right-of-way or from public highway or railroad right-of-way.

All construction vehicles and equipment traffic shall be confined to the public roads, private roads acquired for use by Keystone and the construction right of way. If temporary alternative private roads for access are constructed they shall be designed to not impede proper drainage and shall be built to minimize soil erosion.

Sufficiently sized gaps shall be left in all spoil and topsoil wind rows at all temporary private access roads and obvious livestock or wildlife trails unless agreed with the Landowner prior to construction that these access points can be blocked during construction.

All construction related private roads and access points to the right of way shall be marked with signs. Any private roads not to be utilized during construction shall also be marked.

2.7 Above-Ground Facilities

Locations for above-ground facilities shall be selected in a manner so as to be as unobtrusive as reasonably possible to on-going agricultural or other Landowner activities occurring on the lands adjacent to the facilities. If this is not feasible,

such facilities shall be located so as to incur the least hindrance to the adjacent agricultural operations (i.e., located in field corners or areas where at least one side is not used for cropping purposes) provided the location is consistent with the design constraints of the pipeline. Additionally, they shall be located to avoid existing drain tile systems to the extent possible.

2.8 Minimum Depth of Cover

The pipeline shall be installed so that the top of the pipe and coating is:

- A minimum depth of 4 feet below the surface of all uplands and wetlands except in consolidated rock where the minimum shall be 3 feet
- A minimum clearance of 1 foot below any existing foreign pipeline, utility, drain tile or any other existing underground facility and a minimum of 4 feet below the surface of all uplands and wetlands. Should any existing foreign pipeline, utility, drain tile or any other existing underground facility owner permit the pipeline to cross above, there must be a minimum 1 foot clearance and a minimum of 4 feet below the surface of all uplands and wetlands
- At a minimum depth of 5 feet below the bottom of road ditches
- At a minimum depth of 5 feet below the bottom of waterbodies including rivers, creeks, streams, ditches and drains. This depth shall normally be maintained over a distance of 15 feet on each side of the waterbody measured from the top of the defined stream channel

If concrete weights are utilized for negative buoyancy of the pipeline, the minimum depth of cover shall be measured from the top of the concrete weight to the original ground contour.

Depth of cover requirements may be modified by Keystone based on site specific conditions. However, all depths shall be in compliance with all established codes.

2.9 Threatened and Endangered Species

Keystone will contract a qualified biologist to conduct a survey of sensitive species associated with native tall-grass prairie. The biologist will document locations of the sensitive species found during the survey. If sensitive species are identified in the construction right of way, Keystone will work with the relevant regulatory authorities to determine if any additional protection measures would be required. Once construction is complete, disturbance in native prairie will be reclaimed to native prairie species using native seed mixes specified by applicable state and federal agencies with the intent there will be no net loss of native prairie habitat.

A number of sensitive species are associated with native tall-grass prairie, especially where larger remnant tracts are present. In order to minimize impacts to native prairie, no permanent developments such as access roads or pump stations will be constructed in native prairie tracts if possible. Where avoidance of native tall-grass prairie by the pipeline ROW is unfeasible, appropriate surveys

will be implemented to ensure populations of sensitive wildlife species are not affected.

Keystone will contract a qualified biologist to conduct a survey of breeding bird habitat within 330 feet (100 meters) from proposed surface disturbance activities that would occur within the breeding season. The biologist will document active nests, bird species, and other evidence of nesting (e.g., mated pairs, territorial defense, birds carrying nesting material, transporting of food). If an active nest for Important Migratory Bird Species (USFWS BCC, PIF Priority Bird Species, State Sensitive Species) is documented during the survey, Keystone will work with the relevant regulatory authorities to determine if any additional protection measures would be required.

Immediately prior to construction activities during the raptor breeding season (February 1 – July 31), breeding raptor surveys will be conducted by a qualified biologist through areas of suitable nesting habitat to identify any potentially active nest sites in the project area. If raptors are identified within 0.5 mile to the construction right of way, Keystone will work with the relevant regulatory authorities to develop mitigation measures. These measures will be implemented on a site-specific and species-specific basis in coordination with state agency wildlife biologists.

Along the ROW within historical range of Indiana bat and gray bat (Missouri, Illinois and eastern Oklahoma), Surveys shall be completed during the roosting season in suitable woodland habitats to determine if any active maternity roosts are present in or near the pipeline ROW. If a maternity roost is located, then applicable mitigation will be developed in consultation with USFWS and state wildlife agency personnel.

Prior to surface disturbance activities within karst terrain, a geological investigation will be completed to determine the presence and type of karst features. The investigation will identify the location, distribution, and dimensions of rock cavities within the potential influence zone of construction. In addition, a qualified biologist will conduct surveys for exposed caves that may contain sensitive resources (e.g., bat roosts and nesting raptors) within 0.25 mile from surface disturbance activities. In the event that cave features or sensitive resources are identified, the USFWS or appropriate state wildlife agency will be contacted and applicable mitigation measures developed.

2.10 Non-Hazardous Waste Disposal

Non-hazardous pipeline construction wastes include human waste, trash, pipe banding and spacers, waste from coating products, welding rods, timber skids, cleared vegetation, stumps, rock and all other construction debris.

All waste which contains (or at any time contained) oil, grease, solvents, or other petroleum products falls within the scope of the oil and hazardous substances control, clean up and disposal procedures. This material shall be segregated for handling and disposal as hazardous wastes.

The Contractor shall be responsible for human wastes to be handled and disposed of exclusively by means of portable self-contained toilets during all construction operations. Wastes from these units shall be collected by a licensed Contractor for disposal only at licensed and approved facilities.

The Contractor shall remove all trash from the construction right-of-way on a daily basis unless otherwise approved or directed by Keystone.

The Contractor shall dispose of all drill cuttings and drilling mud at a Keystone-approved location. Disposal options may include spreading over the construction right-of-way in an upland location approved by Keystone, hauling to an approved licensed landfill, or other site approved by Keystone.

The Contractor shall remove all extraneous vegetative, rock and other natural debris from the construction right-of-way by the completion of clean-up

The Contractor shall remove all trash and wastes from Contractor yards, pipe yards and staging areas when work is completed at each location.

The Contractor shall dispose of all waste materials at licensed waste disposal facilities. Wastes shall not be disposed of in any other fashion such as un-permitted burying or burning.

2.11 Hazardous Wastes

The Contractor shall ensure that all hazardous and potentially hazardous materials are transported, stored and handled in accordance with all applicable legislation. Workers exposed to or required to handle dangerous materials shall also be trained in accordance with the applicable legislation and the manufacturer's recommendations.

The Contractor shall dispose of all hazardous materials at licensed waste disposal facilities. Hazardous wastes shall not be disposed of in any other fashion such as un-permitted burying or burning.

All transporters of oil, hazardous substances, and hazardous wastes shall be licensed and certified according to the applicable state vehicle code. Incidents on public highways shall be reported to the appropriate agencies.

All hazardous wastes being transported off-site shall be manifested. The manifest shall conform to requirements of the appropriate state agency. The transporter shall be licensed and certified to handle hazardous wastes on the public highways. The vehicles as well as the drivers must conform to all applicable vehicle codes for transporting hazardous wastes. The manifest shall conform to regulations of the DOT 49 CFR 172.101, 172.202, and 172.203.

If toxic or hazardous waste materials or containers are encountered during construction, the Contractor shall stop work immediately to prevent disturbing or further disturbing the waste material and shall immediately notify Keystone. The Contractor shall not restart work until clearance is granted by Keystone.

2.12 Noise Control

The Contractor shall minimize noise during non-daylight hours and within 1 mile of residences or other noise-sensitive areas such as hospitals, motels or campgrounds. Keystone shall attempt to abide by municipal bylaws regarding noise near residential and commercial/industrial areas. The Contractor shall provide notice to Keystone if noise levels are expected to exceed bylaws for a short duration.

The Contractor shall minimize noise in the immediate vicinity of herds of livestock or poultry operations, which are particularly sensitive to noise.

Keystone shall install noise attenuation, if necessary, to ensure that noise levels from Keystone's above-ground facilities comply with the applicable state or local standards.

2.13 Weed Control

The Contractor shall thoroughly clean all construction equipment, including timber mats, prior to moving the equipment to the job site to limit the potential for the spread of noxious weeds, insects and soil-borne pests. The Contractor shall clean the equipment with high-pressure washing equipment.

Prior to construction, Keystone will mark all areas of the right of way which contain infestations of noxious, invasive species or soil borne pests. Such marking will clearly indicate the limits of the infestation along the right of way. During construction, the Contractor shall clean the tracks, tires, and blades of equipment by hand (track shovel) or compressed air to remove excess soil prior to movement of equipment out of weed and/or soil-borne pest infested areas.

The Contractor shall use mulch and straw or hay bales that are free of noxious weeds for temporary erosion and sediment control.

The Contractor shall implement pre-construction treatments such as mowing prior to seed development or herbicide application to areas of noxious weed infestation prior to other clearing, grading, and trenching or other soil disturbing work at the identified locations as indicated on the construction drawings.

The Contractor shall apply herbicides, where required, within 1 week, or as deemed necessary for optimum mortality success, prior to disturbing the area by clearing, grading, trenching or other soil disturbing work. Herbicides shall be applied by applicators appropriately licensed or certified by the state in which the work is conducted. All herbicides applied preconstruction shall be non-residual or shall have a significant residual effect no longer than 30 days. Herbicides applied during construction shall be non-residual.

The Contractor shall not use herbicides in or within 100 feet of a wetland or waterbody.

After pipeline construction, on any construction right-of-way over which Keystone has jurisdiction as to the surface use of such land (i.e., valve sites, metering

stations, pump stations, etc.), Keystone shall provide for weed control to limit the potential for the spread of weeds onto adjacent lands used for agricultural purposes. Any weed control spraying performed by Keystone shall be done so by a State licensed pesticide applicator.

Keystone shall be responsible for reimbursing all reasonable costs incurred by owners of land adjacent to above-ground facilities when the Landowners must control weeds on their land which can be reasonably determined to have spread from land with Keystone's above-ground facilities.

2.14 Dust Control

The Contractor shall at all times control air borne dust levels during construction activities to levels acceptable to Keystone. The Contractor shall employ water trucks, sprinklers or calcium chloride as necessary to reduce dust to acceptable levels. Utilization of calcium chloride would be limited to roads.

Dust shall be strictly controlled where the work approaches dwellings, farm buildings and other areas occupied by people and when the pipeline parallels an existing road or highway. This shall also apply to access roads where dust raised by construction vehicles may irritate or inconvenience local residents. The speed of all Contractor vehicles shall be controlled while in these areas.

The Contractor shall take appropriate precautions to prevent fugitive emissions caused by sand blasting operations from reaching any residence or public building. The Contractor shall place curtains of suitable material, as necessary, to prevent wind-blown particles from sand blasting operations from reaching any residence or public building.

2.15 Off Road Vehicle Control

Keystone shall offer to Landowners or managers of forested lands to install and maintain measures to control unauthorized vehicle access to the construction right-of-way where appropriate. These measures may include the following unless otherwise approved or directed by Keystone based on site specific conditions or circumstances:

- Signs;
- Fences with locking gates;
- Slash and timber barriers, pipe barriers, or boulders lined across the construction right-of-way; and
- Conifers or other appropriate trees or shrubs across the construction right-of-way.

2.16 Fire Prevention and Control

The Contractor shall comply with all Federal, State, County and Local fire regulations pertaining to burning permits and the prevention of uncontrolled fires. The following mitigative measures shall be implemented to prevent fire hazards and control of fires:

- A list of relevant Authorities and their designated representative to contact shall be maintained on the construction site by construction personnel
- Adequate fire fighting equipment in accordance with the regulatory requirements shall be available on site.
- The level of forest fire hazard shall be posted at the construction office (where visible for all workers) and make them aware of it and related implications.
- The Contractor shall provide equipment to handle any possible fire emergency. This shall include, although not be limited to, water trucks, portable water pumps, chemical fire extinguishers, hand tools such as shovels, axes, chain saws, etc. and heavy equipment adequate for the construction of fire breaks when required.
- Specifically, the Contractor shall supply and maintain in working order an adequate supply of fire extinguishers for each crew that is engaged in work such as welding, cutting, grinding, burning of brush or vegetative debris, etc.
- In the event of a fire, the Contractor shall immediately use resources required to contain the fire. The Contractor shall then notify local emergency response personnel.
- All tree clearing activities are to be carried out in accordance with local rules and regulations for the prevention of forest fires.
- Burning shall be done in compliance with state and/or county regulations and in the center of the right of way and in small piles to avoid overheating or damage to trees or other structures along the right of way.
- Flammable wastes shall be removed from the construction site on a regular basis.
- Flammable materials kept on the construction site must be stored in approved containers away from ignition sources.
- Smoking shall be prohibited around areas with flammable products.
- Smoking shall be prohibited on the construction site when the fire hazard is high.

2.17 Road and Railroad Crossings

Railroad and highway crossings shall be bored or where permitted by the local road authorities having jurisdiction, open-cut. The pipeline shall be installed without casing unless required by permit. Generally, secondary and unimproved roads, public and private roads, shall be open-cut.

The Contractor shall maintain access across all open-cut roads during construction where an alternate bypass is not available.

At all road crossings and/or contiguous construction where workers and equipment are working, approaching traffic shall be cautioned to reduce speed

by road signs. All signage shall be in accordance with crossing permits and state or county highway regulations.

2.18 Adverse Weather

The Contractor shall restrict certain construction activities and work in cultivated agricultural areas in excessively wet soil conditions to minimize rutting and soil compaction. In determining when or where construction activities should be restricted or suspended during wet conditions, the Contractor shall consider the following factors:

- the extent that rutting may cause mixing of topsoil with subsoil layers or damage to tile drains.
- excessive buildup of mud on tires and cleats.
- excessive ponding of water at the soil surface.
- the potential for excessive soil compaction.

The Contractor shall implement mitigative measures as directed by Keystone in order to minimize rutting and soil compaction in excessively wet soil conditions which may include:

- restricting work to areas on the spread where conditions are not prohibitive.
- using low ground weight or wide-track equipment or other low impact construction techniques.
- limiting work to areas that have adequately drained soils or have a cover of vegetation such as sod, crops or crop residues sufficient to prevent mixing of topsoil with subsoil layers or damage to drain tiles.
- installing geotextile material or construction mats in problem areas.

3.0 SPILL PREVENTION AND CONTAINMENT

Spill prevention and containment applies to the use and management of hazardous materials on the construction right-of-way and all ancillary areas during construction. This includes the refueling or servicing of all equipment with diesel fuel, gasoline, lubricating oils, grease, hydraulic and other fluids during normal upland applications and special applications within 100 feet of perennial streams or wetlands.

3.1 Spill Prevention

3.1.1 Staging Areas

Staging areas (including Contractor yards and pipe stockpile sites) shall be set up for each construction spread. Hazardous materials at staging areas shall be stored in compliance with federal and state laws. The following spill prevention measures shall be implemented by the Contractor:

- Contractor fuel trucks shall be loaded at existing bulk fuel dealerships or from bulk tanks set up for that purpose at the staging area. In the former case, the bulk dealer is responsible for preventing and controlling spills;

- Fuels and lubricants shall be stored only at designated staging areas. Storage of fuel and lubricants in the staging area shall be at least 100 feet away from the water's edge. Refueling and lubrication of equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands;
- Contractors shall be required to perform all routine equipment maintenance at the staging area and recover and dispose of wastes in an appropriate manner;
- Temporary liners and berms and/or dikes (secondary containment) shall be constructed around the above-ground bulk tanks, so that potential spill materials shall be contained and collected in specified areas isolated from any waterbodies. Tanks shall not be placed in areas subject to periodic flooding or washout;
- Drivers of tank trucks are responsible for safety and spill prevention during tank truck unloading. Procedures for loading and unloading tank trucks shall meet the minimum requirements established by the Department of Transportation;
- Warning signs requiring drivers to set brakes and chock wheels shall be displayed at all tanks. Proper grounding of equipment shall be undertaken during fuel transfer operations. Drivers shall observe and control the fueling operations at all times to prevent over-filling the temporary tank;
- Prior to departure of any tank truck, all vehicle outlets shall be closely examined by the driver for leakage, and tightened, adjusted or replaced to prevent liquid leakage while in transit;
- A supply of sorbent and barrier materials sufficient to allow the rapid containment and recovery of any spill shall be maintained at the construction staging areas. Sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas;
- Shovels and drums shall be kept at each of the individual staging areas. In the event that small quantities of soil become contaminated, shovels shall be utilized to collect the soil and the material shall be stored in 55 gallon drums. Large quantities of contaminated soil may be bio-remediated on-site, subject to government approval, or collected utilizing heavy equipment, and stored in drums or other suitable containers prior to disposal. Should contamination occur adjacent to staging areas as a result of runoff, shovels and/or heavy equipment shall be utilized to collect the contaminated material. Contaminated soil shall be disposed of in accordance with state and federal regulations;
- Temporary above-ground tanks shall be subject to visual inspection on a monthly basis and when the tank is refilled. Inspection records shall be maintained. Operators shall routinely keep tanks under close surveillance and potential leaks or spills shall be quickly detected;
- Visible fuel leaks shall be reported to the Contractors' designated representative and corrected as soon as conditions warrant. Keystone's designated representative shall also be informed;
- Drain valves on temporary tanks shall be locked to prevent accidental or unauthorized discharges from the tank.

Keystone may allow modification of the above specifications as necessary

to accommodate specific situations or procedures. Any modifications must comply with all applicable regulations and permits.

3.1.2 Construction Right-of-way

Rubber-tired vehicles (pick-up trucks, buses) shall normally refuel at the construction staging areas or commercial gas stations. Tracked machinery (backhoes, bulldozers) shall be refueled and lubricated on the construction right-of-way. Equipment maintenance shall be conducted in staging areas when practical. When impractical, repairs to equipment can be made on the construction right of way when approved by Keystone's representative.

The following preventive measures apply to refueling and lubricating activities on the construction right-of-way:

- Construction activities shall be conducted to allow for prompt and effective clean up of spills of fuel and other hazardous materials. Each construction crew, including clean-up crews shall have on hand sufficient tools and material to stop leaks and supplies of absorbent and barrier materials to allow rapid containment and recovery of spilled materials and must know and follow the procedure for reporting spills;
- Refueling and lubrication of construction equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands. Where this is not possible (e.g., trench dewatering pumps), the equipment shall be fueled by designated personnel with special training in refueling and spill containment and clean up. The Environmental Inspector shall ensure that signs are installed identifying restricted areas;
- Spent oils, lubricants, filters, etc. shall be collected and disposed of at an approved location in accordance with state and federal regulations;
- Equipment shall not be washed in streams.

Keystone may allow modification of the above specifications as necessary to accommodate specific situations or procedures. Any modifications must still comply with all applicable regulations and permits.

3.2 Contingency Plans

The Contractor shall develop emergency response procedures for all incidents (e.g., spills, leaks, fires) involving hazardous materials which could pose a threat to human health and/or the environment. The procedures shall address activities in all work areas, as well as during transport to and from the construction right-of-way and to any disposal or recycling facility.

3.3 Equipment

The Contractor shall retain emergency response equipment that shall be available at all areas where hazardous materials are handled or stored. This equipment shall be readily available to respond to a hazardous material emergency. Such equipment shall include, but not be limited to, the following:

- first aid kit/supplies
- phone or communications radio
- protective clothing (tyvek suit, gloves, goggles, boots)
- hand held fire equipment
- absorbent material and storage containers
- non-sparking bung wrench and shovel
- brooms and dust pan

Hazardous material emergency equipment shall be carried in all mechanic and supervisor vehicles. This equipment shall include, at a minimum:

- first aid kit/supplies
- phone or communications radio
- 2 sets of protective clothing (tyvek suit, gloves, goggles, boots)
- 1 non-sparking shovel
- 6 plastic garbage bags (20 gallon)
- 10 absorbent socks and spill pads
- hand held fire extinguisher
- barrier tape
- 2 orange reflector cones

Fuel and service trucks shall carry a minimum of 20 pounds of suitable commercial sorbent material.

The Contractor shall inspect emergency equipment weekly, and service and maintain equipment regularly. Records shall be kept of all inspections and services.

3.4 Emergency Notification

Emergency notification procedures between the Contractor and Keystone shall be established in the preplanning stages of construction, and the Keystone representative shall be identified to serve as contact in the event of a: spill during construction activities. In the event of a spill which meets government reporting criteria, the Contractor shall notify the Keystone representative immediately who, in turn, shall notify the appropriate regulatory agencies.

If a spill occurs into navigable waters of the United States, Keystone shall notify the National Response Center (NRC) at 1·800-424-8802. For spills which occur on public lands, into surface waters or into sensitive areas the appropriate governmental agency's district office shall also be notified.

3.5 Spill Containment and Countermeasures

In the event of a spill of hazardous material, Contractor personnel shall:

- notify the appointed Keystone representative;
- identify the product hazards related to the spilled material and implement appropriate safety procedures, based on the nature of the hazard;

- control danger to the public and personnel at the site;
- implement spill contingency plans and mobilize appropriate resources and manpower;
- isolate or shutdown the source of the spill;
- block manholes or culverts to limit spill travel;
- initiate containment procedures to limit the spill to as small an area as possible, to prevent damage to property or areas of environment concern (e.g., watercourses);
- commence recovery of the spill and clean-up operations.

When notified of a spill, the Keystone representative shall immediately ensure that:

- action is taken to control danger to the public and personnel at the site;
- spill contingency plans are implemented and that necessary equipment and manpower are mobilized;
- measures are taken to isolate or shutdown the source of the spill;
- all resources necessary to contain, recover and clean up the spill are available;
- any resources requested by the Contractor from Keystone are provided;
- the appropriate agencies are notified. For spills which occur on public lands, into surface waters or into sensitive areas the appropriate federal or state managing office office shall also be notified and involved in the incident.

On a land spill, berms shall be constructed with available equipment to physically contain the spill. Personnel entry and travel on contaminated soils shall be minimized. Sorbent materials shall be applied or, if necessary, heavily contaminated soils shall be removed to an approved facility. Contaminated sorbent materials and vegetation shall also be disposed of at an approved facility.

On a spill threatening a water body, berms and/or trenches shall be constructed to contain the spill prior to entry into a water body. Deployment of booms, skimmers and sorbent materials shall be necessary if the spill reaches the water. The spilled product shall be recovered and the contaminated area shall be cleaned up with in consultation with spill response specialists and appropriate government agencies.

4.0 UPLANDS (AGRICULTURAL, FOREST, PASTURE, RANGE AND GRASS LANDS)

4.1 Interference with Irrigation Systems

If existing irrigation systems (pivot, wheel or other type spray irrigation systems), irrigation ditches, or sheet flow irrigation shall be impacted by the construction of the pipeline, the following mitigative measures shall be implemented unless otherwise approved or directed by Keystone:

- If it is feasible and mutually acceptable to Keystone and the Landowner or Landowner's designate, temporary measures shall be implemented to

allow an irrigation system to continue to operate across land on which the pipeline is also being constructed.

- If the pipeline and/or temporary work areas intersect an operational (or soon to be operational) pivot or other spray irrigation system, Keystone shall establish with the Landowner or Landowner's designate an acceptable amount of time the irrigation system may be out of service or if, as a result of pipeline construction activities, an irrigation system interruption results in crop damages, either on the pipeline construction right-of-way or off the construction right-of-way, the Landowner shall be reasonably compensated for all such crop damages.
- If the pipeline and/or temporary work areas intersect an operational sheet flow irrigation system, Keystone shall establish with the Landowner or Landowner's designate an acceptable amount of time the irrigation system may be out of service or if, as a result of pipeline construction activities, an irrigation system interruption results in crop damages, either on the pipeline construction right-of-way or off the construction right-of-way, the Landowner shall be reasonably compensated for all such crop damages.
- Irrigation ditches that are active at the time of construction shall not be stopped or obstructed except for the length of time to install the pipeline beneath the ditch (typically, one day or less) unless otherwise approved or directed by Keystone.

4.2 Clearing

The objective of clearing is to provide a clear and unobstructed right of way for efficient construction of the pipeline. The following mitigative measures shall be implemented:

- construction traffic shall be restricted to the construction right-of-way, existing roads and approved private roads
- construction right-of-way boundaries including pre-approved temporary workspace shall be clearly staked to prevent disturbance to unauthorized areas
- if crops are present, they shall be mowed or disced to ground level unless an agreement is made for the Landowner to remove for personal use.
- burning is prohibited on cultivated land.
- construction right of way at timber shelterbelts in agricultural areas shall be reduced to the minimum necessary to construct the pipeline

4.3 Topsoil Removal and Storage

The objective of topsoil handling is to maintain topsoil capability by conserving topsoil for future replacement and reclamation and to minimize the degradation of topsoil from compaction, rutting, loss of organic matter, or soil mixing so that successful reclamation of the right of way can occur. The following mitigative measures shall be implemented during topsoil removal and storage unless otherwise approved or directed by Keystone based on site specific conditions or circumstances However, all work shall be conducted in accordance with applicable permits.

- In cultivated agricultural lands, unless otherwise specified by the Landowner, the actual depth of the topsoil shall be stripped from the area to be excavated above the pipeline to a maximum of 12 inches. When grading is required, the topsoil shall be removed from the entire area to be graded and stored. When grading is required, the topsoil shall be removed from the entire area to be graded and stored.
- In non-cultivated agricultural lands, the actual depth of topsoil shall be stripped from the area to be excavated above the pipeline. When grading is required, the topsoil shall be removed from the entire area to be graded and stored.
- Stripped topsoil is to be stockpiled in a windrow along the edge of the right of way. The Contractor shall perform its work in order to minimize the potential for subsoil and topsoil to be mixed.
- Under no circumstances shall the Contractor use topsoil to fill a low area
- If required due to excessively windy conditions, following the removal of the topsoil, topsoil piles shall be tackified using either water or a suitable tackifier.
- The surface drainage network in the vicinity of the right of way shall be maintained by keeping gaps in the rows of topsoil in order to prevent any accumulation of water on the land.
- Topsoil shall not be utilized to construct ramps at road or waterbody crossings.

4.4 Grading

The objective of grading is to develop a right of way that allows the safe passage of equipment and meets the bending limitations of the pipe. The following mitigative measures shall be implemented during grading unless otherwise approved or directed by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- All grading shall be undertaken with the understanding that original contours and drainage patterns shall be re-established during clean up.
- Agricultural areas that have been land formed with terraces shall be surveyed to establish pre-construction contours to be utilized for restoration of the terraces after construction.
- On steep slopes, or wherever erosion potential is high, temporary erosion control measures shall be implemented.
- Bar ditches adjacent to existing roadways that shall be crossed during construction shall be adequately ramped with grade or ditch spoil to prevent damage to the road shoulder and ditch.
- Where the construction surface remains inadequate to support equipment travel, timber mats, timber riprap or other method shall be used to stabilize surface conditions.

The Contractor shall limit the interruption of the surface drain network in the vicinity of the right of way, using the appropriate methods:

- Providing gaps in the rows of subsoil and topsoil in order to prevent any accumulation of water on the land.
- Preventing obstructions in furrows, furrow drains and ditches.
- Installing flumes and ramps in furrows, furrow drains and ditches to facilitate water flow across the construction right of way and allow for construction equipment traffic.
- Installing flumes over the trench for any watercourse where flow is continuous during construction.

4.5 Temporary Erosion and Sediment Control

4.5.1 General

Temporary erosion and sediment control measures shall be installed immediately after initial disturbance of the soil and maintained throughout construction (on a daily basis) and reinstalled as necessary until replaced by permanent erosion control structures or restoration of the construction right-of-way is complete.

Specifications and configurations for erosion and sediment control measures may be modified by Keystone as necessary to suit actual site conditions. However, all work shall be conducted in accordance with applicable permits.

The Contractor shall inspect all temporary erosion control measures at least daily in areas of active construction or equipment operation, weekly in areas with no construction or equipment operation, and within 24 hours of each significant rainfall event. The Contractor shall repair all ineffective temporary erosion control measures as expediently as practicable.

4.5.2 Sediment Barriers

Sediment barriers shall be constructed of silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travel lanes), sand bags, or other appropriate materials.

The Contractor shall install sediment barriers in accordance with **Details 1 and 2** or as otherwise approved or directed by Keystone. The aforementioned sediment barriers may be used interchangeably or together depending on site specific conditions. In most cases, silt fences shall be utilized where longer sediment barriers are required.

Sediment barriers shall be installed below disturbed areas where there is a hazard of off-site sedimentation. These areas include:

- The base of slopes adjacent to road crossings
- The edge of the construction right-of-way adjacent to and up gradient of a roadway, flowing stream, spring, wetland or impoundment
- At trench or test water discharge locations where required

- Where waterbodies or wetlands are adjacent to the construction right-of-way, the Contractor shall install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way
- Across the entire construction right-of-way at flowing waterbody crossings
- Right-of-way immediately upslope of the wetland boundary at all standard (saturated or standing water) wetland crossings as necessary to prevent sediment flow into the wetland. Sediment control barriers are not required at "dry" wetlands
- Along the edge of the construction right-of-way within standard (saturated or standing water) wetland boundaries as necessary to contain spoil and sediment within the construction right-of-way. Sediment control barriers are not required at "dry" wetlands

Sediment barriers placed at the toe of a slope shall be set with sufficient distance from the toe of the slope, if possible, in order to increase ponding volume.

Sediment control barriers shall be placed so as not to hinder construction operations. If silt fences or straw bale sediment barriers in lieu of driveable berms are placed across the entire construction right-of-way at waterbodies, wetlands, or upslope of roads, a provision shall be made for temporary traffic flow through a gap for vehicles and equipment to pass within the structure. Immediately following each day's shutdown of construction activities, a row of straw bales or a section of silt fence shall be placed across the up-gradient side of the gap with sufficient overlap at each end of the barrier gap to eliminate sediment bypass flow, followed by bales tightly fitted to fill the gap. Following completion of the equipment crossing, the gap shall be closed using silt fence or straw bale sediment barrier.

The Contractor shall maintain straw bale and silt fence sediment barriers by removing collected sediment and replacing damaged bales. If sediment loading is greater than approximately 40% full behind a straw bale or silt fence sediment barrier, or if directed by Keystone, sediment shall be removed and placed in an area where it shall not reenter the barrier. If straw bale filters cannot be cleaned out due to access problems, the Contractor shall place a new row of sediment barriers upslope.

The Contractor shall use mulch and straw bales that are free of noxious weeds. Mulch or straw bales that contain evidence of noxious weeds or other undesirable species shall be rejected by the Contractor.

The Contractor shall remove sediment barriers except those needed for permanent erosion and sediment control during clean up of the construction right-of-way.

4.5.3 Trench Plugs

The Contractor shall use trench plugs at the edge of flowing waterbody crossings and at the edge of wetlands with standing water to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody. Trench plugs shall be of sufficient size to withstand upslope water pressure.

4.5.4 Temporary Slope Breakers (Water Bars)

The Contractor shall not install temporary slope breakers (water bars) in cultivated land.

The Contractor shall install temporary slope breakers on slopes greater than approximately 5% in non-cultivated lands where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following recommended spacing:

Slope (%)	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

The gradient of each slope breaker shall be 2 to 8 percent.

Temporary slope breakers shall be constructed of soil, silt fence, staked straw bales, sand bags or similar materials authorized by Keystone.

The Contractor shall direct the outfall of each temporary slope breaker to a stable, well vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way as shown in **Detail 3.** The outfall of each temporary slope breaker shall be installed to prevent sediment discharge into wetlands, waterbodies, or other sensitive resources.

Specifications and configurations for temporary slope breakers may be modified by Keystone as necessary to suit actual site conditions. However, all work shall be conducted in accordance with applicable permits.

4.5.5 Drainage Channels or Ditches

Drainage channels or ditches shall be used on a limited basis to provide drainage along the construction right-of-way and toe of cut slopes as well as to direct surface runoff across the construction right-of-way or away from disturbances and onto natural undisturbed ground. Channels or ditches shall be constructed by the Contractor during grading operations. Where there is inadequate vegetation at the channel's or ditch's outlet, sediment barriers, check berms or other appropriate measures shall be used to control erosion.

4.5.6 Temporary Mulching

The Contractor shall install temporary mulch before seeding if construction or restoration activity is interrupted for extended periods. The Contractor shall not apply temporary mulch in cultivated areas unless specifically requested by the Landowner. The Contractor shall not apply mulch within wetland boundaries.

Temporary mulch applied on slopes shall be spread uniformly to cover at least 75 percent of the ground surface at an approximate rate of 2 tons/acre of straw or its equivalent. Mulch application on slopes within 100 feet of waterbodies and wetlands shall be increased to an approximate rate of 3 tons/acre of straw or equivalent

4.5.7 Tackifier

When inordinately windy conditions result in excessive topsoil movement and topsoil piles wetted with water is not preventing wind erosion, the Contractor shall temporarily suspend topsoil handling operations and apply a tackifier to topsoil stockpiles at the rate recommended by the manufacturer.

Should construction traffic, cattle grazing, heavy rains, or other related construction activity disturb the tackified topsoil piles and there is a potential for wind erosion, additional tackifier shall be applied by the Contractor.

4.6 Stringing

The objective of stringing is to place the line pipe along the construction right of way for bending and welding in an expedient and efficient manner.

The Contractor shall utilize one or more of the following mitigation measures as applicable and when necessary to reduce compaction on the working side of the right of way or as directed by Keystone. However, all work shall be conducted in accordance with applicable permits.

- Prohibiting access by certain vehicles.
- Using only machinery possessing low ground pressure (tracks or extra-wide tires).
- Control access thus minimizing the frequency of all vehicle traffic.
- Hastening drainage through digging drainage ditch to re-establish surface drainage as required.
- Using timber riprap, matting, or geotextile fabric overlain with soil.
- Stopping construction entirely for a period of time.

4.7 Trenching

The objective of trenching is to provide a ditch of sufficient depth and width with a bottom to continuously support the pipeline. During trenching operations, the following mitigative measures shall be implemented unless otherwise approved or directed by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- Segregating subsoil materials from topsoil in separate, distinct rows with a separation that shall limit any admixing of topsoil and subsoil during handling of these materials.
- Gaps must be left in the spoil piles that coincide with breaks in the strung pipe to facilitate natural drainage patterns and to allow the passage of livestock or wildlife.
- Trenching operation shall be followed as closely as practicable by lower-in and backfill operations to minimize the length of time the ditch is open
- Construction debris (e.g., welding debris) and other garbage shall not be deposited in the ditch.

Should blasting be necessary for removal of rock, the following mitigation measures shall be implemented:

- Where blasting is required, operations shall be done accordingly to laws and regulations governing explosives.
- Prior to using explosives, the Contractor shall advise residents of the immediate area, in order to prevent any risk of accidents or undue disturbances.
- Blasting mats or subsoil shall be piled over the trench line to prevent any rocks from being blown outside the construction right of way.
- Each blasting location shall be cleared and cleaned up before and after all blasting operations
- Blasting shall be carried out during regular daylight working hours.

4.7.1 Trench Dewatering/Well Points

The Contractor shall make all reasonable efforts to discharge trench water in a manner that avoids damage to adjacent agricultural land, crops and pasture. Damage includes, but is not limited to the inundation of crops for more than 24 hours, deposition of sediment in ditches, and the deposition of gravel in fields or pastures.

If trench dewatering is necessary in an area where salt damage to adjacent crops is evident, the Keystone Inspector shall conduct a field conductivity test on the trench water before it is discharged. If the conductivity of the trench water is determined to potentially affect soil quality, it shall not be discharged to areas where salt damage to crops is evident, but shall be directed as feasible so that water flows over a well vegetated, non-cropland area or through an energy dissipater and sediment barrier, then directed to nearby ditches or brackish wetlands or waterbodies.

When pumping water from the trench for any reason the Contractor shall ensure that adequate pumping capacity and sufficient hose is available to permit dewatering as follows:

- No heavily silt-laden trench water shall not be allowed to enter a waterbody or wetland directly but shall instead be diverted through a well vegetated area, a geotextile filter bag or a permeable berm (straw bale or Keystone approved equivalent); and

- Trench water shall not be disposed of in a manner which could damage crops or interfere with the functioning of underground drainage systems.

The Contractor shall screen the intake hose and keep the hose either one foot off the bottom of the trench or in a container to minimize entrainment of sediment.

4.8 Welding, Field Joint Coating, and Lower In

The objectives of welding, field joint coating and lower in are to provide continuous segments of pipeline, to provide corrosion protection to the weld areas of the pipeline, and to place the pipeline in the center of the trench, without stress, at the required depth of cover. The following mitigative measures shall be followed during pipe welding, field joint coating, and lower in, unless otherwise specified by Keystone in response to site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- Shavings produced during bevelling of the line pipe are to be removed immediately following this operation to ensure that livestock and wildlife do not ingest this material. When welding operations have created a continuous line of pipe that may be left on the right of way for an extended period of time due to construction or weather constraints, a gap in the welded pipe shall be provided to allow for access at farm road crossings and also for passage of livestock and/or wildlife.
- Prior to the application of epoxy powder, urethane epoxy or other approved pipe coatings, a tarp shall be placed underneath the pipe to collect any overspray of epoxy powder and/or liquid drippings. Excess powder and/or liquid or other hazardous materials (e.g. brushes, rollers, gloves, etc.) shall be continuously collected and removed from the construction right-of-way.

4.9 Padding and Backfilling

The objective of padding (when required) and backfilling is to cover the pipe with material that is not detrimental to the pipeline and pipeline coating. The following mitigative measures shall be utilized during backfilling, unless otherwise approved or directed by Keystone based on site specific conditions or circumstances. All work shall be conducted in accordance with applicable permits.

- Excessive water accumulated in the trench shall be eliminated prior to backfilling.
- In the event it becomes necessary to pump water from open trenches, the Contractor shall pump the water and discharge it into existing water drainages in a manner that shall avoid damaging adjacent agricultural land, crops, and/or pasture.
- If it is impossible to avoid water-related damages (including inundation of crops for more than 24 hours, deposition of sediment in ditches and other water courses, and the deposition of gravel in fields, pastures, and any water courses), Keystone shall reasonably compensate the Landowners for the damages or shall correct the damages so as to restore the land, crops, pasture, water courses, etc. to their pre construction condition.
- All pumping of water shall comply with existing drainage laws and local ordinances relating to such activities and provisions of the Clean Water Act.
- Prior to backfilling, all drain tile shall be permanently repaired, inspected and the repair documented as described in Section 5.5
- Prior to backfilling, trench breakers shall be installed on slopes where required to minimize the potential for water movement down the ditch and potential subsequent erosion.
- In backfilling the trench, the stockpiled subsoil shall be placed back into the trench before replacing the topsoil.
- Topsoil shall not be utilized for padding the pipe.
- Backfilling shall be done without mixing spoil with topsoil.
- Backfill shall be compacted to a minimum of 90% of pre-existing conditions where the trench line crosses tracks of wheel irrigation systems (pivots).
- To reduce the potential for ditch line subsidence, spoil shall be replaced and compacted by backhoe bucket and/or by the wheels or tracks of equipment traversing down the trench.
- The top 4 feet or the actual depth of top cover, whichever is less, within the pipeline trench, bore pits, or other excavations shall not be backfilled with soil containing rocks of any greater concentration or size than existed prior to the pipeline's construction.

4.10 Clean Up

The objective of clean up activities shall be to prepare the right of way and other disturbed areas to approximate pre-activity ground contours where appropriate and to replace spoil and stockpiled material in a manner which preserves soil capability and quality to a degree reasonably equivalent to the original or that of representative undisturbed land. The following mitigative measures shall be utilized during clean up, unless otherwise approved or directed by Keystone based on specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- Clean up shall occur immediately following backfilling operations when weather allows it.
- All garbage and construction debris (i.e., lathing, ribbon, welding rods, pipe bevel shavings, pipe spacer ropes end caps, pipe skids, etc.) shall be collected and disposed of at approved disposal sites.

- The right of way shall be re-contoured with spoil material to approximate pre-construction contours and as necessary to limit erosion and subsidence. Loading of slopes with unconsolidated spoil material shall be avoided during slope re-contouring. Topsoil shall be replaced after re-contouring of the grade with subsoil. The topsoil shall be replaced on the subsoil storage area and over the trench so that after settling occurs, the topsoil's approximate original depth and contour (with an allowance for settling) shall be achieved.
- Surface drainage shall be restored and re-contoured to conform to the adjacent land drainage system.
- Erosion control structures such as permanent slope breakers and cross ditches shall be installed on steep slopes where necessary to control erosion by diverting surface run-off from the right of way, to stable and vegetated off right of way areas.
- After construction, all temporary access shall be returned to prior construction conditions unless specifically agreed with the Landowner or otherwise specified by Keystone.
- Installation of warning signs, aerial markers, and cathodic protection test leads in locations that shall not impair farming operations and are acceptable to the Landowner
- All bridges, fences and culverts existing prior to construction shall be restored to meet or exceed approximate pre-construction conditions. Caution shall be utilized when re-establishing culverts to ensure that drainage is not improved to a point that would be detrimental to existing waterbodies and wetlands.
- All temporary gates installed during construction shall be replaced with permanent fence unless otherwise requested by the Landowner.

4.11 Reclamation and Re-vegetation

The objectives of reclamation and re-vegetation are to return the disturbed areas to approximately pre-construction use and capability. This involves the treatment of soil as necessary to preserve approximate pre-construction capability and the stabilization of the work surface in a manner consistent with the initial land use. The following mitigative measures will be utilized unless otherwise approved or directed by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

4.11.1 Relieving Compaction

- Compaction shall be alleviated on all agricultural land traversed by construction equipment. Cropland that has been compacted shall be ripped a minimum of 3 passes at least 18 inches deep and all pasture and woodland shall be ripped or chiseled a minimum of three passes at least 12 inches deep.
- Areas of the construction right of way that were stripped for topsoil salvage shall be ripped a minimum of 3 passes (in cross patterns) prior to topsoil replacement. The approximate depth of ripping shall be 18 inches (or a lesser depth if damage may occur to existing drain tile systems). Following ripping, the subsoil surface shall be graded

smooth and any subsoil clumps broken up (disc and harrow) in an effort to avoid topsoil mixing.

- The decompacted construction right of way shall be tested by the Contractor at regular intervals for compaction in agricultural and residential areas disturbed by construction activities. Tests shall be conducted on the same soil type under similar moisture conditions in undisturbed areas immediately adjacent to the right of way to approximate pre-construction conditions. Penetrometers or other appropriate devices shall be used to conduct tests
- Topsoil shall be replaced to pre-existing depths once ripping and discing of subsoil is complete. Topsoil compaction on cultivated fields shall be alleviated by cultivation.
- If there is any dispute between the Landowner and Keystone as to what areas need to be ripped or chiseled, the depth at which compacted areas should be ripped or chiseled, or the necessity or rates of lime and fertilizer application, the appropriate county Soil and Water Conservation District's opinion shall be considered by Keystone and the Landowner.

Plowing under of organic matter including wood chips, manure, or planting of a new crop, such as alfalfa, to decrease soil bulk density and improve soil structure or any other measures in consultation with the Soil Conservation service shall be considered if mechanical relief of compaction is deemed not satisfactory.

4.11.2 Rock Removal

- In agricultural land, rocks that are exposed on the surface due to construction activity shall be removed from the right of way prior to and after topsoil replacement to an equivalent quantity, size and distribution of rocks to that of adjacent lands.
- Clearing of rocks may be carried out with a mechanical rock picker or by manual means, provided that preservation of topsoil is assured. Rock removed from the right of way shall be hauled off the Landowner’s premises or disposed of on the Landowner’s premises at a location that is mutually acceptable to the Landowner and to Keystone.

4.11.3 Soil Additives

If site specific conditions warrant and if agreed to by the Landowner, the Contractor shall apply amendments (fertilizer and soil pH modifier materials and formulations) that are commonly used for agricultural soils in the area in which they are applied and in accordance with written recommendations from the local soil conservation authority, land management agencies, or Landowner. Amendments shall be incorporated into the normal plow layer as soon as possible after application.

4.11.4 Seeding

- The final seed mix shall be based on input from the local Soil Conservation Services and the availability of seed at the time of reclamation. The Landowner may request specific seeding requirements during easement negotiations.
- Certificates of seed analysis are required for all seed mixes to limit the introduction of noxious weeds.
- Seed not utilized within 12 months of seed testing shall be approved by Keystone prior to use.Seeding shall follow clean up and topsoil replacement as closely as possible. Seed shall be applied to all disturbed surfaces (except cultivated fields unless requested by the Landowner) as indicated on the Consruction Drawings
- If mulch was applied prior to seeding for temporary erosion control, the Contractor shall remove and dispose of the excess mulch prior to seedbed preparation to ensure that seedbed preparation equipment and seed drills do not become plugged with excess mulch; to ensure that seed can adequately contact the soil surface; and to ensure that seed incorporation or soil packing equipment can operate without becoming plugged with mulch.
- The Contractor may evenly re-apply and anchor (straw crimp) the removed temporay mulch on the construction right-of-way following seeding.
- Identified seeding areas shall be seeded at a rate appropriate for the region and stability of the reclaimed surface. Seeding rates shall be based on Pure Live Seed.
- Weather conditions, construction right-of-way constraint, site access, and soil type shall influence the seeding method to be used (i.e., drill seeding versus broadcast seeding). All areas seeded by the Contractor, except for temporary cover crops, shall be drill seeded unless the right of way is too steep to facilitate drill seeding. Temporary cover crop seed shall be broadcast.
- The Contractor shall delay seeding as necessary until the soil is in the appropriate condition for drill seeding.
- The Contractor shall use a Truax (brand) or equivalent-type drill seeder equipped with a cultipacker designed and equipped to apply grass and grass-legume seed mixtures with mechanisms such as seed box agitators to allow even distribution of all species in each seed mix, with an adjustable metering mechanism to accurately deliver the specified seeding rate and with a mechanism such as depth bands to accurately place the seed at the specified depth.
- The Contractor shall operate drill seeders at an appropriate speed so the specified seeding rate and depth is maintained.
- The Contractor shall calibrate drill seeders so that the specified seeding rate is planted. The row spacing on drill seeders shall not exceed 8 inches.
- The Contractor shall plant seed at depths cosistent with the local or regional agricultural practices.
- Broadcast or hydro seeding used, in lieu of drilling, shall utilize double the recommended seeding rates. Where seed is broadcast, the Contractor shall use a harrow, cultipacker or other equipment

immediately following broadcasting to incorporate the seed to the specified depth and to firm the seedbed.

- The Contractor shall delay broadcast seeding during high wind conditions if even distribution of seed is impeded.
- The Contractor shall hand rake all areas that are too steep, or otherwise cannot be safely harrowed or cultipacked, in order to incorporate the broadcast seed to the specified depth.
- Hydro-seeding may be used, on a limited basis, where the slope is too steep or soil conditions do not warrant conventional seeding methods. Fertilizer, where specified, may be included in the seed, virgin wood-fiber, tackifier and water mixture. When hydro-seeding, virgin wood-fiber shall be applied at the rate of approximately 3,000 pounds per acre on an air-dry weight basis as necessary to provide at least 75% ground cover. Tackifier shall consist of biodegradable, vegetable-based material and shall be applied at the rate recommended by the manufacturer. The seed, mulch and tackifier slurry shall be applied so that it forms a uniform, mat-like covering of the ground.
- Keystone shall work with Landowners to discourage cattle from using the construction right-of-way during the first growing season by utilization of temporary fencing or deferred grazing.

4.11.5 Permanent Erosion and Sediment Control

The Contractor shall restore all existing Landowner soil conservation improvements and structures disturbed by pipeline construction to the approximate pre-construction line and grade. Soil conservation improvements and structures include, but are not limited to, grassed waterways, toe walls, drop inlets, grade control works, terraces, levees and farm ponds.

4.11.5.1 Trench Breakers

The Contractor shall install trench breakers in steep terrain where necessary to limit the potential for trench line erosion and at the base of slopes adjacent to waterbodies and wetlands.

Trench breakers shall be constructed of materials such as sand bags, sand/cement bags, bentonite bags, or polyurethane foam by the Contractor **(Detail 7)**. The Contractor shall not use topsoil in trench breakers.

4.11.5.2 Permanent Slope Breakers (Water Bars)

Permanent slope breakers (water bars) shall be constructed of soil or, in some instances, sand bags.

The Contractor shall construct permanent slope breakers (water bars) on the construction right-of-way where necessary to limit erosion, except in cultivated and residential areas. Slope breakers shall divert surface runoff to adjacent stable vegetated areas or to energy-dissipating devices as shown on **Detail 3.** Permanent slope breakers (water bars) shall be installed as specified on the Construction Drawings or generally with a minimum spacing as shown on the following table:

Slope (%)	Spacing (feet)
5 - 15	300
>15 – 30	200
>30	100

The gradient (fall) for each slope breaker shall be two percent (2%) to eight percent (8%) unless otherwise approved by Keystone based on site specific conditions.

The Contractor shall construct slope breakers to divert surface flow to a stable, well-vegetated area. In the absence of a stable area, the Contractor shall construct appropriate energy-dissipating devices at the end of the slope breaker and beyond the area disturbed by construction. .

4.11.5.3 Mulching

The Contractor shall apply mulch on all areas with high erosion potential and on slopes greater than 8 percent unless otherwise approved by Keystone based on site specific conditions or circumstances. The Contractor shall spread mulch uniformly over the area to cover at least 75 percent of the ground surface at an approximate rate of 2 tons/acre of straw or its equivalent.

Mulch application includes straw mulch or hydro mulch and tackifier. The Contractor shall not apply mulch in cultivated areas unless requested by the Landowner.

The Contractor shall use mulch that is free of noxious weeds.

The Contractor shall apply mulch immediately following seeding. The Contractor shall not apply mulch in wetlands.

If a mulch blower is used, the majority of strands of the mulching material shall not be shredded to less than 8 inches in length to allow anchoring. The Contractor shall anchor mulch immediately after application to minimize loss by wind and water.

When anchoring (straw crimping) by mechanical means, the Contractor shall use a tool specifically designed for mulch anchoring with flat, notched disks to properly crimp the mulch to a depth of approximately 2 to 3 inches. A regular farm disk shall not be used to crimp mulch.

In soils possessing high erosion potential, the Contractor may be required to make two passes of the mulch-crimping tool, passes must be as perpendicular to the others as possible.

When anchoring with liquid mulch binders (tackifiers), the Contractor shall use a biodegradable tackifier derived from a vegetable-based, organic source. The Contractor shall apply mulch binders at rates recommended by the manufacturer.

The Contractor shall limit the use of liquid mulch binders (tackifiers) for anchoring straw and the use of hydromulch and tackifier to areas that are too steep or rocky to safely or effectively operate mechanical mulch-anchoring tools.

4.11.5.4 Erosion Control Matting

Erosion control matting shall be applied where shown on the Construction Drawings as shown on **Detail 4.** The Contractor shall anchor the erosion control matting with staples or other approved devices.

The Contractor shall use erosion control matting made of biodegradable, natural fiber such as straw or coir (coconut fiber).

The Contractor shall prepare the soil surface and install the erosion control matting to ensure it is stable and the matting makes uniform contact with the soil of the slope face or stream bank underneath with no bridging of rills, gullies or other low areas.

4.11.5.5 Riprap and Stream Bank Stabilization

In most cases, the banks and streambeds of waterbodies shall be restored to their approximate original contours. Erosion protection shall be applied as specified in the construction drawings.

Generally most restored banks will be protected through the use of flexible channel liners installed as specified in **Detail 19.**

If the original stream bank is excessively steep and unstable and/or flow conditions are severe, a more stable final contour

may be specified and alternate stabilization measures may be installed.

Alternate stabilization measures may consist of rock rip rap, or bio-stabilization or engineered structures such as brush layering, logwalls, cribwalls, or vegetated geo-grids. See **Details 20, 22, 23, and 24.**

Stream bank riprap structures shall consist of a layer of stone, underlain with approved filter fabric or a gravel filter blanket. Riprap shall extend from the stabilized streambed to the top of the stream bank, where practicable, native rock shall be utilized.

4.11.6 Fences

Upon completion of all backfilling, clean-up and restoration including mulching and seeding of the construction right-of-way, permanent repairs shall be made to all fences by using either the original material or good quality new material similar to existing fences.

Early or historic fences shall be carefully reassembled by hand from the original material. Where the original material has deteriorated to a state that makes it unsalvageable, replacement material similar to the original shall be used if possible.

4.11.7 Right-of-way and Pipeline Markers

Upon completion of all backfilling, clean-up and restoration including mulching and seeding of the construction right-of-way and during the time when the Contractor is making permanent repairs to fences, the Contractor shall install pipeline markers on each side of all roads, railroads, fence lines, stream crossings and other areas where the pipeline markers do not conflict with intended land use.

4.12 Pasture and Range Lands

The following mitigative measures shall be implemented in addition to the requirements previously stated in Sections 4.1 thru 4.11 unless otherwise approved by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- Access across the right of way during construction shall be provided at locations requested by Landowners, if practicable.
- Bevel shavings produced during pipe bevel operations are to be removed immediately to ensure that livestock and wildlife do not ingest this material.
- Litter and garbage shall be collected and removed from the construction site at the end of the day's activities.
- Temporary gates shall be installed at fence lines for access to the construction right of way. These gates shall remain closed at all times. Upon completion of construction, the temporary gates shall be removed and the permanent fence replaced.

- Feeding or harassment of livestock or wildlife is prohibited.
- Construction personnel shall not be permitted to have firearms or pets on the construction right-of-way.
- All food and wastes shall be stored and secured in vehicles and/or appropriate facilities.
- Areas of disturbance in native range shall be seeded with a native seed mix after topsoil re-placement.
- Improved pasture shall be seeded with a seed mix approved by individual Landowners.

4.13 Forested Lands

Mitigation measures are required to ensure that pipeline construction activities have a minimal impact on forested lands and their habitat.

Clearing, grubbing and grading of trees, brush and stumps shall be performed in accordance with the following mitigative measures in addition to the requirements previously stated in Sections 4.1 thru 4.11 unless otherwise approved or directed by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- Prior to the start of clearing activity, right of way boundaries including pre-approved temporary workspaces shall be clearly staked to prevent disturbance to unauthorized areas.
- If trees are to be removed from the construction right-of-way, Keystone shall consult with the Landowner or Landowner's designate to see if there are trees of commercial or other value to the Landowner. Timber shall be salvaged as per Landowner request.
- If there are trees of commercial or other value to the Landowner, Keystone shall allow the Landowner the right to retain ownership of the trees with the disposition of the trees to be negotiated prior to the commencement of land clearing and included in the easement agreement.
- If not performed by the Landowner, the construction right of way Contractor shall salvage all merchantable timber from designated areas.
- Tree stumps shall be grubbed only 5 feet either side of the trench line and where necessary for grading a level surface for pipeline construction equipment to operate safely
- Keystone shall follow the Landowner's or Landowner designate's desires as stated in the easement agreement regarding the disposal of trees, brush, and stumps of no value to the Landowner by burning, burial, etc., or complete removal from any affected property.
- Timber salvage operations shall use cut off-type saw equipment. Felling shall be undertaken in a manner that minimizes butt shatter, breakage and off right of way disturbance. Skidders or alternate equipment shall be used to transport salvaged logs to stacking sites.
- Trees shall be felled in such a way that they fall toward the centre line of the right of way to avoid breaking trees and branches off right of way. Leaners or felled trees that inadvertently fall into adjacent undisturbed vegetation shall be salvaged.
- Trees and slash falling outside the right of way shall be recovered and disposed of

- Salvaged logs shall be limbed and topped before removal from the construction right-of-way. Log decks (if required) shall be oriented to best facilitate loading by picker trucks and be located adjacent to the working side of the right of way where possible.
- The Contractor shall not be allowed to dispose of woody debris in wooded areas along the pipeline right of way.
- Pruning of branches hanging over the right of way shall be done only when necessary for construction. Any branch that is broken or seriously damaged should be cut off near its fork and the collar of the branch preserved.
- All tree wastes, stumps, tree crowns, brushes, branches and other forest debris shall be either burned, chipped (using a mobile chipper) or removed from the right of way according to Keystone instructions contained in the specific mitigation measures. Burial of this waste material on the site by the Contractor shall require the Landowner's specific authorization. Chips must not be spread over cultivated land. However, they may be spread and incorporated with mineral soil over the forest floor at a density that shall not prevent re-vegetation of grass.
- Stump removal and brush clearing shall be done with bulldozers equipped with brush rakes to preserve organic matter.
- Decking sites shall be established, approximately 2000 feet apart in timbered areas, on sites located on approved temporary workspace in existing cleared areas, in non-merchantable stands of timber or, if no other options are available, in merchantable timber stands. Deck sites shall be appropriately sized to accommodate the loading equipment.
- The Contractor shall remove decked timber from the construction right-of-way and transport to a designated all weather access point or mill if the Landowner does not want the timber.

4.14 Residential and Commercial/Industrial Areas

4.14.1 Residential Area

The principal measures that shall be used to mitigate impacts on existing residential areas include the following unless otherwise directed or approved by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- notifying Landowners prior to construction;
- posting warning signs as appropriate
- reducing the width of construction right of way, if practicable, by eliminating the construction equipment passing lane, reducing the size of work crews, or utilizing the "stove pipe" or "drag section" construction techniques;
- removing fences, sheds, and other improvements as necessary for protection from construction activities;
- preserving, to the extent possible, mature trees and landscaping while ensuring the safe operation of construction equipment;
- fencing the edge of the construction work area adjacent to a residence for a distance of 100 feet on either side of the residence to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area;

- limiting the hours during which operations with high-decibel noise levels (i.e., drilling and boring) can be conducted;
- limiting dust impact through prearranged work hours and by utilizing dust minimization techniques;
- ensuring that construction proceeds quickly through such areas (thus, minimizing exposure to nuisance effects such as noise and dust);
- maintaining access and traffic flow during construction activities, particularly for emergency vehicles;
- cleaning up construction trash and debris daily;
- fencing or plating open ditches during non-construction activities;
- immediately after backfilling the trench, restoring all lawn areas, shrubs, specialized landscaping, fences and other structures, etc. within the construction work area consistent with its pre-construction appearance or the requirements of the Landowner. Restoration work shall be done by personnel familiar with local horticultural and turf establishment practices;
- If the pipeline centerline is within 25 feet of a residence, ensuring that the trench is not excavated until the pipe is ready for installation and that the trench shall be backfilled immediately after pipe installation.

4.14.2 Commercial / Industrial Area

Commercial/industrial areas traversed by the pipeline would be subjected to both short and long-term impacts similar to residential areas. Temporary, short-term construction impacts may include disruption, inconvenience, and loss of potential revenues.

The principal measures that shall be used to mitigate impacts on existing commercial/industrial areas are as follows unless otherwise directed or approved by Keystone based on site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- notifying business owners prior to construction;
- reducing the width of construction right of way, if practicable, by eliminating the construction equipment passing lane, reducing the size of work crews, or utilizing the “stove pipe” or “drag section” construction techniques;
- removing fences and other improvements as necessary for protection from construction activities;
- fencing the edge of the construction work area adjacent to a business for a distance of approximately 100 feet on either side of the commercial/industrial building to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area;
- preserving, to the extent possible, mature trees and landscaping while ensuring the safe operation of construction equipment;
- limiting the hours during which operations with high-decibel noise levels (i.e., drilling and boring) can be conducted;
- limiting dust impact through prearranged work hours and by utilizing dust minimization techniques;

- ensuring that construction proceeds quickly through such areas (thus, minimizing exposure to nuisance effects such as noise and dust);
- maintaining access and traffic flow during construction activities, particularly for emergency vehicles;
- cleaning up construction trash and debris daily;
- fencing or plating open ditches during non-construction activities;
- immediately after backfilling the trench, restoring all lawn areas, shrubs, specialized landscaping, fences and other structures, etc. within the construction work area consistent with its pre-construction appearance or the requirements of the business owner. Restoration work shall be done by personnel familiar with local horticultural and turf establishment practices;
- If the pipeline centerline is within 25 feet of a commercial/industrial building, ensuring that the trench is not excavated until the pipe is ready for installation and that the trench shall be backfilled immediately after pipe installation.

4.14.3 Site – Specific Plans

For any residence or commercial/industrial building closer than 25 feet to the construction work area, Keystone shall prepare a site-specific construction plan. The plan shall include:

- a description of construction techniques to be used;
- a dimensioned site plan that shows, as a minimum:
    - the location of the residence or commercial/industrial area in relation to the new pipeline;
    - the edge of the construction work area;
    - the edge of the new permanent construction right-of-way; and
    - other nearby topographical obstacles including landscaping, trees, structures, roads, parking areas, or ditches/streams, etc.
- a description of how Keystone would ensure that the trench is not excavated until the pipe is ready for installation and that the trench is backfilled immediately after pipe installation.

Figure 1 represents a typical site specific plan.

4.14.4 Landowner Complaint Resolution Procedure

Keystone shall implement a Landowner complaint procedure as follows:

- Landowners should first contact the construction spread office to express their concern over restoration and/or mitigation of environmental damages on their property. The Construction Manager, or his designated representative, shall respond to the Landowner within approximately 24 hours of receipt of the phone call.
- If the Landowner has not received a response or are not satisfied with the response, they can then contact Keystone's representative at XXX-

XXX-XXXX. The Landowners should expect a response within 48 hours.

- If the Landowner has not received a response or is not satisfied with the response, they should contact Keystone's Hotline at XXX-XXX-XXXX.

4.15 Operations and Maintenance

Operations and maintenance programs such as vegetation management, pipeline maintenance, integrity surveys, hydrostatic testing or other programs may have an impact on the final reclamation of the right of way. To ensure that the integrity of the facility and land surface reclamation of the right of way is maintained after completion of construction and that regulatory requirements are adhered to during operations, the following measures shall be implemented unless otherwise directed by Keystone in response to site specific conditions or circumstances. However, all work shall be conducted in accordance with applicable permits.

- Keystone shall monitor the pipeline right of way and all stream crossings for erosion or other potential problems that could affect the integrity of the pipeline. Any erosion identified shall be reclaimed as expediently as practicable by Keystone or by compensation of the Landowner to reclaim the area.
- Trench depressions on ditch line which may interfere with natural drainage, vegetation establishment or land use shall be repaired as expediently as practicable by Keystone or by compensation of the Landowner to repair the area.
- Post construction monitoring inspections shall be conducted of disturbed areas after the first growing season to determine the success of revegetation. Areas which have not been successfully re-established shall be revegetated by Keystone or by compensation of the Landowner to reseed the area. If, after the first growing season, revegetation is successful, no additional monitoring shall be conducted.
- In non-agricultural areas, revegetation shall be considered successful if, upon visual survey, the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands.
- In agricultural areas, revegetation shall be considered successful if crop yields are similar to adjacent undisturbed portions of the same field.
- Restoration shall be considered successful if the surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless requested otherwise by the Landowner or land managing agency), revegetation is successful, and drainage has been restored.
- Weed control measures shall be implemented as required in conjunction with the Landowner.
- Keystone shall be responsible for correcting all tile line repairs or irrigation systems that fail due to pipeline construction, provided those repairs were made by Keystone. Keystone shall not be responsible for tile line repairs which Keystone compensates the Landowner to perform.
- When requested by Landowners, in cultivated land, Keystone shall monitor the yield of land impacted by construction with the help of agricultural specialists. If alterations are indicated from that of adjacent lands, Keystone

will compensate the Landowner for reduced yields and shall implement procedures to return the land to equivalent capability.

- In residential areas, Landowners may use the right-of-way provided they do not interfere with the rights granted to Keystone. Trees or bushes, structures, including houses, toolsheds, garages, poles, guy wires, catch basins, swimming pools, trailers, leaching fields, septic tanks, and any other objects not easily removable, shall not be permitted on the permanent construction right-of-way without the written permission of Keystone, because they could impair access for maintenance of the pipeline.
- Keystone shall maintain communication with the Landowner and or tenant throughout the operating life of the pipeline to allow expedient communication of issues and problems as they occur. Keystone shall provide the Landowners with corporate contact information for these purposes. Keystone shall work with Landowners to prevent excessive erosion on lands disturbed by construction. Reasonable methods shall be implemented to control erosion. This may not be implemented if the property across which the pipeline is constructed is bare cropland which the Landowner intends to leave bare until the next crop is planted.
- If the Landowner and Keystone cannot agree upon a reasonable method to control erosion on the Landowner's property, the recommendations of the appropriate county Soil and Water Conservation District shall be considered by Keystone and the Landowner.

5.0 DRAIN TILE SYSTEMS

5.1 General

If underground drainage tile is damaged by the pipeline installation, it shall be repaired in a manner that assures the tile line's proper operating condition at the point of repair. Keystone may elect to negotiate a fair settlement with the affected county or Landowner for repair of the damaged drain tile. In the event the Landowner chooses to have the damaged tile repaired by Keystone, the Contractor shall follow these guidelines and procedures to identify the location of drain tiles; to mitigate damages to drain tiles prior to and during construction; to repair drain tiles damaged during installation of the pipeline; to inspect the proper repair of drain tiles; and to provide post-construction monitoring to determine any impacts caused by repair of drain tiles. Since all public and private drain tile systems are unique, i.e., varying age, depth of cover, type of material, geometry on the land, etc., it is not possible to develop a standard procedure for resolving each county's or Landowner's drain tile issues. These guidelines provide a basis on which to develop site specific methodology to mitigate damage and to repair drain titles affected by construction of the Keystone pipeline. Actual measures will be developed based on site specific information unique to specific installations. However, all work will be conducted in accordance with applicable permits.

5.2 Identification and Classification of Drain Tile Systems

Personnel shall attempt to identify and classify existing drain tile systems by meeting with local public officials and county engineers, and meeting with individual private Landowners and/or tenants.

5.2.1 Publicly Owned Drain Tiles

Personnel shall identify and meet with the responsible county or local authority responsible for publicly owned drain tiles. Publicly owned drain tiles shall be identified and documented onto Keystone's 1" = 2000' USGS quad strip maps and additional data collected for input into an electronic spreadsheet by county; township, range, and section; responsible agency; and size, type, and depth of cover (if known). This data shall be cross referenced to the centerline survey to be completed by Keystone. Additionally, any public records including maps or easement instruments on the drain tiles shall be acquired as well as any requirements of the local authority for installation of the Keystone pipeline.

5.2.2 Privately Owned Drain Tiles

Right-of-way agents shall meet with Landowners and tenants of privately owned land along Keystone's pipeline route. As a minimum, the right-of-way agents shall ascertain the data concerning drain tiles outlined on a Landowner questionnaire. The questionnaire requests data concerning type of drain tile system; size, type of material and depth of cover; preference for repair of drain tiles; and identification of local drain tile contractors. These data shall be collected into an electronic spreadsheet for utilization by right-of-way personnel in negotiating payments for easements and damages and by engineering/construction personnel for inclusion in specifications for the construction contractor.

5.3 Mitigation of Damage to Drain Tile Systems

Keystone shall undertake mitigation measures to reduce damage to publicly and privately owned drain tile systems prior to and during installation of the pipeline.

5.3.1 Non-interference with Drain Tile

Keystone's pipeline shall be installed at a depth of cover and elevation to not interfere with the elevation and grade of existing drain tiles where practicable. Where not practicable, Keystone shall pursue alternative mitigation measures mutually acceptable to the Landowner and jurisdictional agencies. Typically, the pipeline shall be installed below the elevation of drain tiles with a minimum clearance of 12 inches. **Detail 25**, Typical ROW Layout/Soil Handling, represents a typical drain tile crossing by the pipeline with additional temporary work space to facilitate handling of topsoil and trench spoil created by the additional depth of cover for the pipeline.

5.3.2 Non-disturbance of Drain Tile Mains

Publicly owned and privately owned drain tile mains shall be identified through the processes identified in Section 5.2. Drain tile mains are essential to the overall drainage system of a land area and may cause the pipeline construction Contractor excessive pumping/dewatering of the pipe

trench unless temporarily repaired and maintained until permanently repaired.

Keystone shall review drain tile mains and consider their size, flow rate, type of material, depth of cover, and geographic location. If determined to be practicable and reasonable for construction, the drain tile main shall not be cut and repaired during mainline installation (a pipe section shall be left out and installed by a tie-in crew without damaging the drain tile main).

5.3.3 Relocation or Replacement of Existing Drain Tiles Prior to Construction

In many instances, drain tile systems that have been installed after the installation of adjacent existing pipelines, were installed with "headers" parallel to the existing pipeline with periodic jumpovers as depicted on **Detail 26**, Header/Main Crossovers of Keystone Pipeline. The distance of these headers from the existing pipeline may vary.

Some of these drain tile headers may be most effectively relocated and/or replaced to the east of the Keystone pipeline and the existing header capped and made into a single drain tile as depicted on **Detail 27**, Relocate/Replace Drainage Header/Main. This could reduce the number of drain tile crossings on a particular Landowner by a significant quantity, thereby reducing the risk that repairs will fail.

5.3.4 Future Drain Tiles/Systems

Personnel shall attempt to determine where public agencies and private Landowners or tenants are proposing to install drain tile systems in the future to the extent possible. These locations shall be input into an electronic spreadsheet by county; township, range, and section; Landowner or responsible public agency; and proposed size and depth of cover. Keystone shall endeavor to construct the pipeline at a depth and elevation to accommodate the future installation of the proposed drain tile systems.

5.3.5 Other Mitigation Measures

Other mitigation measures that may be implemented during installation of the pipeline are as follows:

- Not removing topsoil from the working side of the construction right-of-way to prevent crushing of drain tile by heavy equipment
- Spreading ditch and spoil side topsoil (not subsoil) over the working side to provide additional soil depth to protect existing drain tiles.
- The Contractor shall restrict the work, if practicable, of the pipe lower-in crew if ground conditions are too wet to adequately support the heavy equipment.
- Travel of heavy equipment shall be limited to the working lane of the construction right-of-way where possible.

- Travel of heavy equipment shall be limited to one pass over the drain tile per work crew where possible.
- Should tile be crushed on the working side of the right of way, the topsoil would be removed and replaced during the drain tile replacement.

5.4 Responsibility for Repair of Drain Tile Systems

Temporary and permanent drain tile repairs shall be the responsibility of the Contractor. The physical repairs shall be made by qualified and experienced drain tile repair personnel.

5.4.1 Local Drain Tile Contractor Repair

Keystone shall identify and qualify local drain tile contractors in the geographical area of the pipeline route from interviews with local public officials and Landowners/tenants as well as the drain tile contractors. The preferred responsibility for permanent repair of drain tiles shall be for the pipeline Contractor to subcontract the supervision and repair to local reputable drain tile contractors that are acceptable to the local Landowners/tenants.

5.4.2 Pipeline Contractor Repair

In the event local drain tile contractors are not available to subcontract the supervision and repair, responsibility for permanent repair shall be with the pipeline contractor's supervision, equipment, and labor.

5.4.3 Landowner/Tenant Repair

Keystone shall allow the Landowner or tenant responsibility for the permanent repair of his drain tiles if requested during negotiations for the easement and if not precluded by jurisdictional regulatory agencies. The Landowner/tenant shall be requested to ensure their ability to coordinate and complete the drain tile repair in a timely manner to accommodate the pipeline Contractor to allow the pipeline Contractor to completely backfill the damaged drain tile for repair by Landowner/tenant in the immediate future. Keystone shall require that its representative be present to ensure the permanent drain tile repairs are made in accordance with the minimum requirements of this manual.

5.5 Drain Tile Repairs

The Contractor shall endeavour to locate all tile lines within the construction right-of-way prior to and during the pipeline's installation so repairs can be made if necessary.

5.5.1 Temporary Repairs During Construction

Drain tiles damaged/cut by excavation of the pipeline trench shall be marked with a lath and ribbon in the spoil bank. Care shall be taken to locate markers where the chance of disturbance shall be minimized and a written record maintained of each drain tile crossing. A work crew following the pipeline trench crew shall complete a temporary repair to allow continuing flow. **Detail 28**, Temporary Drain Tile Repair, depicts the materials and installation to complete the temporary repair. If a drain tile

line shall not be temporarily repaired, the open ends of the drain tile shall be screened to prevent entry of foreign materials and small animals.

5.5.2 Permanent Repairs

Permanent repairs shall be made for all drain tiles damaged by installation of the pipeline.

5.5.2.1 Ditch Line Only Repairs

If water is flowing through a damaged tile line, the tile line shall be immediately and temporarily repaired until such time that permanent repairs can be made. If tile lines are dry and water is not flowing, temporary repairs are not required if the permanent repair is made within 7 days of the time damage occurred. The temporary repair shall be removed just prior to lowering-in the pipeline.

Drain tiles must be permanently repaired before the pipeline trench is backfilled and within 14 days of construction completion, weather and soil conditions permitting. All tile lines shall be repaired with materials of the same or better quality as that which was damaged. The drain tile marker shall not be removed until the tile repairs have been inspected, approved, and accepted by Keystone's inspectors, the Counties' inspectors, where applicable, and/or the Landowner or tenant. **Detail 29**, Permanent Repair Method of Drain Tiles, depicts the minimum materials and installation to complete a permanent repair.

5.5.2.2 Ditch Line and Temporary Work Space Repairs

Prior to making the permanent drain tile repair, the Contractor shall probe a segmented sewer rod with a plug that is not more than 15% smaller than the internal diameter of the drain tile to determine if additional damage has occurred to the drain tile. If the probe does not freely insert into the drain tile across the temporary workspace of pipeline construction, the Contractor shall excavate, expose and repair the damaged drain tile to its original or better condition.

5.6 Inspection/Acceptance of Drain Tile Repairs

Drain tile repairs shall be inspected by Keystone pipeline construction inspectors, County inspectors, as applicable, and the Landowner or tenant or their representative.

Keystone pipeline shall designate inspector(s) for the sole purpose and responsibility for inspection of repair of drain tiles. These inspectors shall be, if possible, employed from local drain tile installation contractors, local farmers with extensive drain tile experience, or previously employed or retired employees of local

jurisdictions familiar with drain tile installation and repair. In the event that a sufficient quantity of inspectors from the prior described sources are not available, Keystone shall conduct in-the-field training seminars on drain tile repair for additional inspection personnel.

Inspection personnel shall observe the permanent repair of all drain tiles to ensure utilization of the proper type and size of replacement drain tile; the drain tile is installed at the proper grade; the drain tile is properly supported; backfill beneath the drain tile is properly placed and compacted; and the replacement drain tile is properly tied into the existing drain tile. The inspections shall be documented on the Drain Tile Inspection Report Forms.

A drain tile repair shall not be accepted until Keystone's construction inspector AND the Landowner or tenant or their designated representative approves the inspection form.

6.0 WETLAND CROSSINGS

6.1 General

Aboveground facilities shall not be located in a wetland, except where the location of such facilities outside of wetlands would preclude compliance with U.S. Department of Transportation pipeline safety regulations.

Wetland boundaries shall be clearly marked in the field with signs and/or highly visible flagging during construction.

In the event a waterbody crossing is located within or adjacent to a wetland crossing, the measures of Section 7 shall be implemented to the extent practicable.

A "dry" wetland typically has groundwater level existing some depth below the surface. Trench excavations are typically stable and normal in width. Equipment can traverse the wetland without the support of mats or timber rip-rap.

A "standard" wetland environment typically has soils that are saturated and non-cohesive. Difficult trenching conditions are likely resulting in excessively wide trenches. In these wetland environmental types, supplemental support in the form of timber rip-rap or prefabricated equipment mats may be required for construction equipment to safely and efficiently operate.

A "flooded" wetland involves the presence of standing water over much of the wetland area. Equipment typically cannot traverse the wetland and must generally move around that portion of the area. Access is typically limited to marsh backhoes or equipment working from flexi floats or equivalent.

Keystone may allow modification of the following specifications as necessary to accommodate site specific conditions or procedures. Any modifications must still comply with all applicable regulations and permits.

6.2 Easement and Workspace

The Contractor shall maintain wetland boundary markers in place during construction in all areas and until permanent seeding are completed in non-cultivated areas.

The width of the construction right-of-way shall be reduced to 85 feet or less in "standard" wetlands unless non-cohesive soil conditions require utilization of a greater width.

The Contractor shall locate all extra work areas (such as staging areas and additional spoil storage areas) at least 10 feet away from wetland boundaries, where topographic conditions permit.

The Contractor shall limit clearing of vegetation between extra work areas and the edge of the wetland to the construction right-of-way and limit the size of extra work areas to the minimum needed to construct the wetland crossing.

6.3 Vehicle Access and Equipment Crossing

The only access roads, other than the construction right-of-way, that the Contractor shall use in wetlands are those existing roads shown on the Construction Drawings.

The Contractor's construction equipment operating in saturated wetlands or wetlands with standing water shall be limited to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way to the extent practicable

If equipment must operate within a wetland containing standing water or saturated soils, the Contractor shall use the following methods for equipment access unless otherwise approved by Keystone based on site specific conditions:

- Wide-track or balloon-tire construction equipment.
- Conventional equipment operated from timber and slash (riprap) cleared from the right of way, timber mats, or prefabricated equipment mats

6.4 Temporary Erosion and Sediment Control

The Contractor shall install sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary at all standard wetland crossings, as necessary, to prevent sediment flow into the wetland. Sediment barriers must be properly maintained by the Contractor throughout construction and reinstalled as necessary. In the travel lane, these may incorporate removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but shall be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent The Contractor shall maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. The

Contractor shall not install sediment barriers at wetlands designated as “dry” unless otherwise specified by Keystone.

Where standard wetlands are adjacent to the construction right-of-way, the Contractor shall install sediment barriers along the edge of the construction right-of-way as necessary to prevent a sediment flow into the wetland.

6.5 Wetland Crossing Procedures

The following general mitigative procedures shall be followed by the Contractor in all wetlands unless otherwise approved or directed by Keystone based on site specific conditions. However, all work shall be conducted in accordance with applicable permits.

- Minimizing the duration of construction-related disturbance within wetlands to the extent practicable.
- Attempting to use no more than two layers of timber riprap to stabilize the construction right-of-way.
- Cutting vegetation off at ground level leaving existing root systems in place and remove it from the wetland for disposal.
- Limiting pulling of tree stumps and grading activities to directly over the trench line. Not grading or removing stumps or root systems from the rest of the construction right-of-way in wetlands unless safety-related construction constraints require removal of tree stumps from under the working side of the construction right-of-way.
- Segregating the top 12 inches of topsoil from the area disturbed by trenching in standard wetlands, where practicable. After backfilling is complete, restoring topsoil to its approximate original stratum.
- Dewatering the trench in such a manner that does not cause erosion and heavily silt-laden water does not flow directly into any wetland or waterbody.
- The Contractor shall avoid sand blasting in wetlands to the extent practicable. If sandblasting is performed within a wetland, the Contractor shall place a tarp or suitable material in such a way as to collect as much waste shot as possible and dispose of the collected waste. The Contractor shall clean up all visible deposits of wastes and dispose of the waste at an approved disposal facility.
- Removing all timber riprap and prefabricated equipment mats upon completion of construction.
- Locating hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.
- Locating hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.
- Not storing hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating activities in a wetland, or within 100 feet of any wetland boundary.
- Attempting to refuel all construction equipment in an upland area at least 100 feet from a wetland boundary. If construction equipment must be refueled in a wetland or within 100 feet of any wetland boundary, follow the procedures outlined in Section 3.

- Where the pipeline trench may drain a wetland, the Contractor shall construct trench breakers and/or seal the trench to maintain the original wetland hydrology.
- After backfilling is complete, restoring the segregated topsoil to its approximate original location over the trench.

Specific procedures for each type of wetland crossing method are listed below and shall be designated on the Construction Drawings but may be modified depending on site conditions at the time of construction. However, all work shall be conducted in accordance with applicable permits.

6.5.1 "Dry" Wetland Crossing Method

Topsoil shall be segregated. Pipe stringing and fabrication may occur within the wetland adjacent to the trench line or adjacent to the wetland in a designated extra workspace.

The "dry" wetland crossing procedure depicted in **Detail 8** shall be used where this type of wetland is identified on the Construction Drawings. The following are exceptions to "standard" wetland crossing methods:

- The width of the construction right-of-way for upland construction is maintained through the wetland.
- Where extra work areas (such as staging areas and additional spoil storage areas) are designated on the Construction Drawings, they may be placed no closer than 10 feet from the wetland's edge.
- Sediment barriers are not required across or along the edges of the construction right-of-way.
- If the wetland is cultivated, the topsoil shall be stripped using the trench and spoil side method at the same depth as the adjacent upland areas
- Seeding requirements for agricultural lands shall be applied to farmed wetlands.

6.5.2 "Standard" Wetland Crossing Method

Topsoil stripping is impracticable due to the saturated nature of the soil. Pipe stringing and fabrication may occur within the wetland adjacent to the trench line or adjacent to the wetland in a designated extra workspace. Based upon the length of a standard wetland crossing and presence of sufficient water to float the pipe, the Contractor may elect to install a standard wetland crossing utilizing the “push/pull” method.

The standard wetland crossing procedure depicted in **Detail 9** shall be used where this type of wetland is identified on the Construction Drawings.

Procedures unique to standard wetlands include:

- Limiting construction right of way width to a maximum of 85 feet unless site conditions warrant a wider width
- Utilizing low ground pressure construction equipment or support equipment on timber rip rap or timber mats
- Installing sediment barriers across the entire right of way where the right of way enters and exits the wetland

6.5.3 Flooded "Push/Pull" Wetland Crossing Method

In these wetlands, standing surface water or high groundwater levels are present. Difficult trenching conditions may exist, and trench widths of up to 35 feet are common. Topsoil stripping is impossible due to the flooded conditions. Pipe stringing and fabrication is required adjacent to the wetland in a designated extra workspace. And the pipe pushed and/or pulled with floatation into place.

The "Push/Pull" Wetland crossing procedure as depicted in **Detail 10** shall be used where water is sufficient to float the pipeline in the trench and other site conditions allow.

Clean metal barrels or styrofoam floats may be used to assist in the flotation of the pipe. Metal banding shall be used to secure the barrels or floats to the pipe. All barrels, floats and banding shall be recovered and removed upon completion of lower-in. Back fill shall not be allowed before recovery of barrels, floats and banding.

6.6 Restoration and Reclamation

All timber riprap, timber mats, and prefabricated equipment mats shall be removed upon completion of construction. The Contractor shall replace topsoil, as applicable, and spread to its original contours in the wetland as possible with no crown over the trench. Any excess spoil shall be removed from the wetland. The Contractor shall stabilize wetland edges and adjacent upland areas by establishing permanent erosion control measures and re-vegetation, as applicable, during final clean up.

For each standard wetland crossed, the Contractor shall install a permanent slope breaker and trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. The Contractor shall locate the trench breaker immediately upslope of the slope breaker.

In the absence of detailed re-vegetation plans or until the appropriate seeding season for permanent wetland vegetation in standard wetlands, the Contractor shall apply a temporarily cover crop on the construction right-of-way at a rate adequate for germination and ground cover using annual ryegrass or oats unless standing water is present. The Contractor shall apply the temporary cover crop during final clean up. For farmed wetlands, apply seeding requirements for agricultural lands or as required by the Landowner.

The Contractor shall not use fertilizer, lime or mulch in wetlands unless required in writing by the appropriate land management or state agency.

6.7 Operations and Maintenance

Vegetation maintenance shall not be conducted over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 30 feet wide may be maintained in an herbaceous state. In addition, trees within 30 feet of the pipeline greater than 15 feet in height may be selectively cut and removed from the permanent right-of-way.

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

The success of wetland re-vegetation shall be monitored after construction until wetland re-vegetation is successful except in circumstances where property is purchased and developed.

Wetland re-vegetation shall be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. If re-vegetation is not successful at the end of 3 years, a remedial re-vegetation plan shall be developed in consultation with a professional wetland ecologist to actively re-vegetate the wetland. Re-vegetation efforts shall continue until wetland re-vegetation is successful.

7.0 WATERBODIES AND RIPARIAN LANDS

7.1 General

The Contractor shall comply with requirements of all permits issued for the waterbody crossings by Federal, State or local agencies.

"Waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:

- "Minor Waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of construction.
- "Intermediate Waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of construction.
- "Major Waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of construction.

In the event a waterbody crossing is located within or adjacent to a wetland crossing, the Contractor shall implement the provisions of Section 6, Wetland Crossings, to the extent practicable.

The Contractor shall supply and install advisory signs in a readily visible location along the construction right-of-way, a distance of approximately 100 feet on each

side of the crossing and on all roads which provide direct construction access to waterbody crossing sites. Signs shall be supplied, installed, maintained and then removed upon completion of the project. Additionally, signs shall be supplied and installed by the Contractor on all intermediate and major waterbodies accessible to recreational boaters warning boaters of pipeline construction operations.

The Contractor shall not store hazardous materials, chemicals, fuels, lubricating oils, or perform concrete coating within approximately 100 feet of any waterbody. The Contractor shall not refuel construction equipment within 100 feet of any waterbody. If the Contractor must refuel construction equipment within 100 feet of a waterbody, it must be done in accordance with the requirements outlined in Section 3.

Throughout construction, the Contractor shall maintain adequate flow rates to protect aquatic life and to prevent the interruption of existing downstream uses.

Keystone may allow modification of the following specifications as necessary to accommodate specific situations or procedures. Any modifications must comply with all applicable regulations and permits.

7.2 Easement and Work Space

The permanent easement, temporary work space, additional temporary work space and any special restrictions shall be depicted on the Construction Drawings. The work shall be contained within these areas and be limited in size to the minimum required to construct the waterbody crossing.

The Contractor shall locate all extra work areas (such as staging areas and additional spoil storage areas) at least 10 feet from the water's edge if practicable.

At all waterbody crossings, the Contractor shall install flagging across the construction right-of-way at least 10 feet from the banks prior to clearing and ensure that riparian cover is maintained where practicable during construction.

7.3 Vehicle Access and Equipment Crossings

The Contractor shall inspect equipment for fluid leaks prior to entering or crossing over waterbodies.

Equipment bridges are not required at minor waterbodies unless dry crossing procedures are specified or unless the waterbody supports a state designated fishery.

Equipment crossings shall be constructed as described in **Details 16, 17 and/or 18**.

Equipment crossings shall be perpendicular to drainage bottoms whenever possible.

The Contractor shall be responsible for the installation, maintenance and removal of all temporary access crossings including portable bridges, bridges made from timber or mats, flumes, culverts, sand bags, subsoil, or coarse granular material and riprap.

The Contractor shall ensure that culverts and flumes are sized and installed of sufficient diameter to accommodate the existing flow of water and those that may potentially be created by sudden runoffs. Flumes shall be installed with the inlet and outlet at natural grade if possible.

Where bridges, culverts or flumes are installed across the working area, the Contractor shall be responsible for maintaining them (e.g. preventing collapse, clogging or tilting). All flumes and culverts shall be removed as soon as possible upon completion of construction

The width of the temporary access road across culverts and flumes and the design of the approaches and ramps shall be adequate for the size of vehicle and equipment access required. The ramps shall be of sufficient depth and constructed to prevent collapse of the flumes, and the approaches on both sides of the flume shall be feathered.

Where culverts are installed for access and a waterbody is expected or possibly shall be constructed by the dry flume method, the culvert shall be of sufficient length to convey the stream flow through the construction zone.

The Contractor shall maintain equipment bridges to minimize soil from entering the waterbody.

7.4 Waterbody Crossing Methods

Construction methods pertinent to waterbody crossings are presented below. Selection of the most appropriate method at each crossing shall be depicted on the Construction Drawings but may be amended or changed based on site-specific conditions (i.e., environmental sensitivity of the waterbody, depth and rate of flow, subsurface soil conditions, site specific construction considerations, and the expected time and duration of construction) at the time of crossing. Each waterbody crossing shall be accomplished using one of the following construction methods:

- Non-flowing Open Cut Crossing Method - (**Detail 11**)
- Flowing Open Cut Crossing Method – Minor, Intermediate or Major Waterbody - (**Detail 12**)
- Flowing Open Cut Crossing – Dry Flume Method - (**Detail 13**)
- Flowing Open Cut Crossing – Dry Dam and Pump Method - (**Detail 14**)
- Horizontal Directional Drill Crossing - (**Detail 15**)
- Horizontal Bore Crossing - (**Detail 21**)

7.4.1 Non-flowing Open Cut Crossing Method

The Contractor shall utilize the Non-flowing Open Cut Crossing Method (**Detail 11**) for all waterbody crossings (ditches, gullies, drains, swales, etc.) with no perceptible flow at the time of construction. Should site conditions change and the waterbody is flowing at the time of construction, the Contractor shall install the crossing utilizing the flowing open cut crossing method unless otherwise approved by Keystone.

7.4.2 Flowing Open Cut Crossing Method of Minor, Intermediate and Major Waterbodies

For minor waterbody crossings, except where the flume method is used, the Contractor shall complete construction in the waterbody (not including blasting, if required) as shown on **Detail 12** within 24 hours if practicable.

For intermediate waterbodies, the Contractor shall attempt to complete trenching and backfill work within the waterbody (not including blasting if required) within 48 hours if practicable as shown on **Detail 12.**

The Contractor shall construct each major waterbody crossing in accordance with a Site Specific Plan as shown in the Construction Drawings. The Contractor shall complete in-stream construction activities as expediently as practicable.

7.4.3 Flowing Open Cut Crossing – Dry Flume Method

Where required, the Contractor shall utilize the Flowing Open Cut Crossing – Dry Flume Method as shown on **Detail 13** with the following "dry ditch" techniques:

- flume pipe shall be installed after blasting (if necessary), but before any trenching;
- sand bag or sand bag and plastic sheeting diversion structure or equivalent shall be used to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required in order to achieve an effective seal);
- flume pipe(s) shall be aligned to prevent bank erosion and streambed scour;
- flume pipe shall not be removed during trenching, pipe laying, or backfilling activities, or initial streambed restoration efforts; and
- all flume pipes and dams that are not also part of the equipment bridge shall be removed as soon as final clean up of the stream bed and bank is complete

7.4.4 Flowing Open Cut Crossing – Dry Dam and Pump Method

Where specified in the construction drawings, the Contractor shall utilize the Flowing Open Cut Crossing – Dry Dam and Pump Method as shown

on **Detail 14**. The dam and pump crossing method shall meet the following performance criteria:

- sufficient pumps shall be used to maintain 1.5 times the flow present in the stream at the time of construction;
- at least one back up pump must be available on site;
- dams shall be constructed with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);
- screen pump intakes shall be installed;
- streambed scour shall be prevented at pump discharge; and dam and pumps shall be monitored to ensure proper operation throughout the waterbody crossing.

7.4.5 Horizontal Directional Drill Crossings

Where required, the horizontal directional drill method **as shown on Detail 15** shall be utilized for designated major and sensitive waterbodies. The Contractor shall construct each directional drill waterbody crossing in accordance with a Site Specific Plan as shown in the Construction Drawings.

Drilling fluids and additives utilized during implementation of a directional drill shall be non-toxic to the aquatic environment.

The Contractor shall develop a contingency plan to address a frac-out during a directional drill. The plan shall include instructions for monitoring during the directional drill and mitigation in the event that there is a release of drilling fluids. Additionally, the waterbody shall be monitored downstream by the Contractor for any signs of drilling fluid.

The Contractor shall dispose of all drill cuttings and drilling mud at a Keystone-approved location. Disposal options may include spreading over the construction right-of-way in an upland location approved by Keystone, hauling to an approved licensed landfill, or other site approved by Keystone.

7.4.6 Horizontal Bore Crossings

Where required, the horizontal bore method **as shown on Detail 21** shall be utilized for crossing waterbodies. The Contractor shall construct each horizontal bore waterbody crossing in accordance with a Site Specific Plan as shown in the Construction Drawings.

7.5 Clearing

Except where rock is encountered and at non flowing open cut crossings, all necessary equipment and materials for pipe installation must be on-site and assembled prior to commencing trenching in a waterbody. All staging areas for materials and equipment shall be located at least 10 feet from the waterbody

edge. The Contractor shall preserve as much vegetation as possible along the waterbody banks while allowing for safe equipment operation.

Clearing and grubbing for temporary vehicle access and equipment crossings shall be carefully controlled to minimize sediment entering the waterbody from the construction right-of-way.

Clearing and grading shall be performed on both sides of the waterbody prior to initiating any trenching work. All trees shall be felled away from watercourses.

Plant debris or soil inadvertently deposited within the high water mark of waterbodies shall be promptly removed in a manner that minimizes disturbance of the waterbody bed and bank. Excess floatable debris shall be removed above the high water mark from areas immediately above crossings.

Vegetation adjacent to waterbodies which are to be installed by horizontal directional drill or boring methods shall not be disturbed except by hand clearing as necessary for drilling operations.

7.6 Grading

The construction right-of-way adjacent to the waterbody shall be graded so that soil is pushed away from the waterbody rather than towards it when possible.

In order to minimize disturbance to woody riparian vegetation within extra workspaces adjacent to the construction right-of-way at waterbody crossings, the Contractor shall minimize grading and grubbing of waterbody banks. Grubbing shall be limited to the ditchline plus an appropriate width to accommodate the safe installation of vehicle access and the crossing to the extent practicable.

7.7 Temporary Erosion and Sediment Control

The Contractor shall install sediment barriers across the entire construction right-of-way at all flowing waterbody crossings.

The Contractor shall install sediment barriers immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.

Where waterbodies are adjacent to the construction right-of-way, the Contractor shall install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way.

7.8 Trenching

The following requirements apply to all waterbody crossings except those being installed by the non-flowing open cut crossing method.

All equipment and materials shall be on site before trenching in the active channel of all minor waterbodies containing state designated fisheries, and in intermediate and major waterbodies. All activities shall proceed in an orderly manner without delays until the trench is backfilled and the stream banks stabilized. The Contractor shall not begin in-stream activity until the in-stream pipe section is complete and ready to be installed in the waterbody.

The Contractor shall use trench plugs at the end of the excavated trench to prevent the diversion of water into upland portions of the pipeline trench and to keep any accumulated upland trench water out of the waterbody. Trench plugs must be of sufficient size to withstand upslope water pressure.

The Contractor shall conduct as many in-stream activities as possible from the banks of the waterbodies. The Contractor shall limit the use of equipment operating in waterbodies to that needed to construct each crossing.

The Contractor shall place all spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas. No trench spoil, including spoil from the portion of the trench across the stream channel, shall be stored within a waterbody unless the crossing cannot be reasonably completed without doing so.

The Contractor shall install and maintain sediment barriers around spoil piles to prevent the flow of spoil into the waterbody.

Spoil removed during ditching shall be used to backfill the trench usually with a backhoe, clamshell or a dragline working from the waterbody bank. Sand, gravel, rockshield, or fill padding shall be placed around the pipe where rock is present in the channel bottom.

7.9 Pipe Installation

The following requirements apply to all waterbody crossings except those being installed by the non-flowing open cut crossing method.

A "free stress" pipe profile shall be used at all minor, intermediate, and major waterbodies with gradually sloping stream banks. The "box bend" pipe profile shall be used for intermittent and major waterbodies with steep stream banks.

The trench shall be closely inspected to confirm that the specified cover and that adequate bottom support can be achieved, and shall require Keystone approval prior to the pipe being installed. Such inspections shall be performed by visual inspection and/or measurement by a Keystone Representative. In rock trench, the ditch shall be adequately padded with clean granular material to provide continuous support for the pipe.

The pipe shall be pulled into position or lowered into the trench and shall, where necessary, be held down by weights, as-built recorded and backfilled immediately to prevent the pipe from floating.

The Contractor shall provide sufficient approved lifting equipment to perform the pipe installation in a safe and efficient manner. As the coated pipe is lowered in, it shall be prevented from swinging or rubbing against the sides of the trench. Only properly manufactured slings, belts and cradles suitable for handling coated pipe shall be used. All pipes shall be inspected for coating flaws and/or damage as it is being lowered into the trench. Any damage to the pipe and/or coating shall be repaired.

7.10 Backfilling

The following requirements apply to all waterbody crossings except those being installed by the non-flowing open cut crossing method.

Trench spoil excavated from waterbodies shall be used to backfill the trench across waterbodies.

After lowering-in has been completed, but before backfilling, the line shall be re-inspected to ensure that no skids, brush, stumps, trees, boulders or other debris is in the trench. If discovered, such materials or debris shall be removed from the trench prior to backfilling.

For each major waterbody crossed, the Contractor shall install a trench breaker at the base of slopes near the waterbody unless otherwise directed by Keystone based on site specific conditions. The base of slopes at intermittent waterbodies shall be assessed on-site and trench breakers installed only where necessary.

Slurred muck or debris shall not be used for backfill. At locations where the excavated native material is not acceptable for backfill or must be supplemented, the Contractor shall provide granular material approved by Keystone.

If specified in the Construction Drawings, the top of the backfill in the stream shall be armored with rock riprap or bio-stabilization materials as appropriate.

7.11 Stabilization and Restoration of Stream Banks and Slopes

The stream bank contour shall be re-established. All debris shall be removed from the streambed and banks. Stream banks shall be stabilized and temporary sediment barriers shall be installed within 24 hours of completing the crossing if practicable.

Approach slopes shall be graded to an acceptable slope for the particular soil type and surface run off controlled by installation of permanent slope breakers. Where considered necessary, the integrity of the slope breakers shall be ensured by lining with erosion control blankets.

Immediately following reconstruction of the stream banks, the Contractor shall install seed and flexible channel liners on waterbody banks as shown in **Detail 19**.

If the original stream bank is excessively steep and unstable and/or flow conditions are severe or if specified on the Construction Drawings, the banks

shall be stabilized with rock riprap, gabions, stabilizing cribs, or bio-stabilization measures to protect backfill prior to reestablishing vegetation.

Stream bank riprap structures shall consist of a layer of stone, underlain with approved filter fabric or a gravel filter blanket in accordance with **Detail 20**. Riprap shall extend from the stabilized streambed to the top of the stream bank, where practicable, native rock shall be utilized.

Bio-stabilization techniques which may be considered for specific crossings are shown in **Details 22, 23, and 24.**

The Contractor shall remove equipment bridges as soon as possible after final clean up.

8.0 HYDROSTATIC TESTING

8.1 Testing Equipment Location

The Contractor shall provide for the safety of all pipeline construction personnel and the general public during hydrostatic test operations by placing warning signs in populated areas.

The Contractor shall locate hydrostatic test manifolds 100 feet outside wetlands and riparian areas to the maximum extent practicable.

8.2 Test Water Source and Discharge Locations

Keystone is responsible for acquiring all permits required by federal, state and local agencies for procurement of water and for the discharge of water used in the hydrostatic testing operation. Keystone shall provide the Contractor with a copy of the appropriate withdrawal/discharge permit for hydrostatic test water. The Contractor shall keep the water withdrawal/discharge permit on site at all times during testing operations.

Any water obtained or discharged shall be in compliance with permit notice requirements and with sufficient notice for Keystone's Testing Inspector to make water sample arrangements prior to obtaining or discharging water. In some instances sufficient quantities of water may not be available from the permitted water sources at the time of testing. Withdrawal rates may be limited as stated by the permit. Under no circumstances shall an alternate water source be used without prior authorization from Keystone.

The Contractor shall be responsible for obtaining any required water analyses from each source to be used in sufficient time to have a lab analysis performed prior to any filling operations. The sample bottle shall be sterilized prior to filling with the water sample. The analysis shall determine the pH value and total suspended solids. Each bottle shall be marked with:

- Source of water with pipeline station number
- Date taken
- Laboratory order number

- Name of person taking sample

Staging/work areas for filling the pipeline with water shall be located a minimum of 50 feet from the waterbody or a wetland boundary if topographic conditions permit. The Contractor shall install temporary sediment filter devices adjacent to all streams that runoff may enter.

The Contractor shall screen the intake hose to prevent the entrainment of fish or debris. The hose shall be kept off the bottom of the waterbody. Refueling of construction equipment shall be conducted a minimum distance of 100 feet from the stream or a wetland. Pumps used for hydrostatic testing within 100 feet of any waterbody or wetland shall be operated and refueled in accordance with Section 3.

The Contractor shall maintain adequate flow rates in the waterbody to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.

The Contractor shall not use chemicals in the test water. The Contractor shall not discharge any water containing oil or other substances that are in sufficient amounts as to create a visible color film or sheen on the surface of the receiving water.

Potential hydrostatic water sources for the mainline and the Cushing Extension are as follows:

Table 1 – Mainline Drainage Basins and Water Sources

Drainage Basins & Water Sources	Approximate Location Where Pipeline Crosses Water Source (Mile Post)
Pembina River	7
Tongue River	17
Carter Creek	24
Branch Forest River	46
Sheyenne River	167
Logen Dam	290
Nat'l Wildlife Prod. Area	351
Rock Creek	358
Lutz Lake	363
Wolf Creek	387
James River	417
Missouri River	431
Elk Horn River	498
Shell Creek	527
Platte River	537
Big Blue River	568
West Fork Big Blue River	587
Big Blue River	652
Missouri River	743
Grand River	834
Mussel Fork River	850
Mussel Fork River	856
Silver Creek (East Fork)	865
South Fork Salt River	912
Culver River	972
Pardenne Creek Runs Into Miss. River	988
Mississippi River	1014
Cahokie Creek	1020
Shoal Creek	1048

Table 2 – Cushing Extension Drainage Basins and Water Sources

Drainage Basins & Water Sources	Approximate Location Where Pipeline Crosses Water Source (Mile Post)
Little Blue River	4.2
Republican River	52.1
Smokey Hill River	76.2
Cottonwood River	117.0
Whitewater River	158.0
Stewart Creek (0.3 mile upstream of Walnut River)	185.1
Arkansas River	206.1
Salt Fork Arkansas River	238.5
Cimarron River	284.4

Selected road, railroad, and river crossing pipe sections may be specified to be pre-tested for a minimum of 4 hours. The water for pre-testing of any road and railroad crossings shall be hauled by a tanker truck from an approved water source. Water for pre-testing of a river crossing may be hauled or taken from the respective river if it is an approved water source. Since the volume of water utilized in these pretests shall be relatively small, the water shall be discharged overland along the construction right-of-way and allowed to soak into the ground utilizing erosion and sediment control mitigative measures.

Selection of final test water sources will be determined based on site conditions at the time of construction and applicable permits.

8.3 Filling the Pipeline

After final positioning of the pipe, the Contractor shall fill the pipe with water. Pipe ends shall not be restrained during the fill. The fill pump shall be set on a metal catch pan of sufficient dimensions to contain all leaking lubricants or fuel and prevent them from entering the water source. The suction inlet must be placed in a screened enclosure located at a depth that shall not allow air to be drawn in with the water. The screened enclosure shall be such that the fill water is free of organic or particulate matter.

The Contractor shall provide a filter of the backflushing or cartridge type with a means of cleaning without disconnecting the piping. The filter shall have the specifications of 100 mesh screen. If the cartridge type is used, a sufficient quantity of cartridges shall be on hand at the filter location. The Contractor shall install the filter between the fill pump and the test header. The Contractor shall be responsible for keeping the backflush valve on the filter closed during the filling operation. The Contractor shall be responsible for the proper disposal of materials backflushed from the filter or filter cartridges. The Contractor shall not be allowed to backflush the filter into the stream or other water source.

During water-filling of the pipeline, the Contractor shall employ the use of fill pumps capable of injecting water into the pipeline at a maximum rate of approximately 0.7 to 1.0 mile per hour, except as limited by permits or the maintenance of adequate flow rates in the waterbody, as indicated approximately as follows:

Nominal OD	Max. GPM
30"	3000

The Contractor shall restrict flow rates if necessary to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.

8.4 Dewatering the Pipeline

The Contractor shall comply with state-issued NPDES permits for discharging test water.

The Contractor shall not discharge any water containing oil or other substances that are in sufficient amounts as to create a visible color film on the surface of the receiving water.

The Contractor shall not discharge into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, State, and local permitting agencies grant written permission.

The Contractor shall calculate, record and provide to Keystone the day, date, time, location, total volume, maximum rate and methods of all water discharged to the ground or to surface water in association with hydrostatic testing.

The Contractor shall regulate the pig velocity discharge rate (3000 gpm maximum), use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive stream flow. Water must be disposed of using good engineering judgment so that all federal, state, and local environmental standards are met. Dewatering lines shall be sufficient strength and be securely supported and tied down at the discharge end to prevent whipping during this operation.

To reduce the velocity of the discharge, The Contractor shall utilize an energy-dissipating device described as follows:

8.4.1 Splash Pup

A splash pup consists of a piece of large diameter pipe (usually over 20" O.D.) of variable length with both ends partially blocked that is welded perpendicularly to the discharge pipe. As the discharge hits against the inside wall of the pup, the velocity is rapidly reduced and the water is allowed to flow out either end. A variation of the splash pup concept, commonly called a diffuser, incorporates the same design, but with capped ends and numerous holes punched in the pup to diffuse the energy.

8.4.2 Splash Plate

The splash plate is a quarter section of 36-inch pipe welded to a flat plate and attached to the end of a 6-inch discharge pipe. The velocity is reduced by directing the discharge stream into the air as it exits the pipe. This device is also effective for most overland type discharge.

8.4.3 Plastic Liner

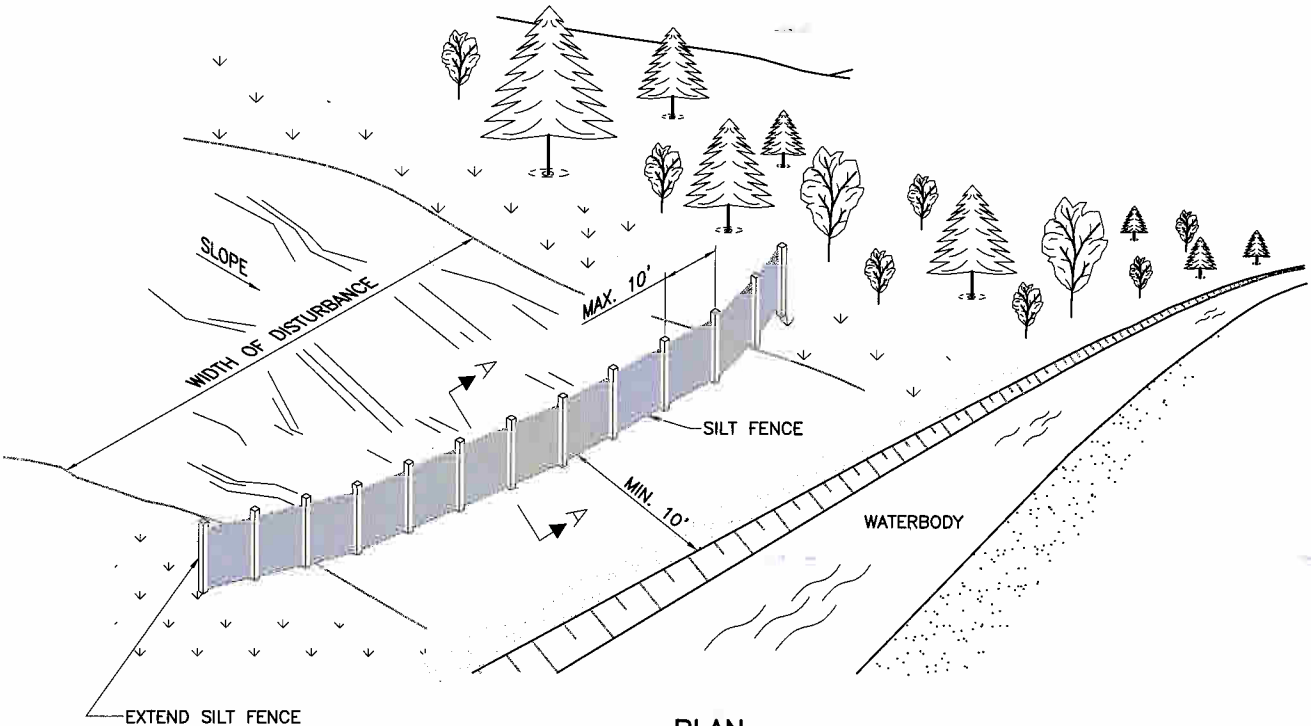
In areas where highly erodible soils exist or in any low flow drainage channel, it is a common practice to use layers of visqueen (or any of the new construction fabrics currently available) to line the receiving channel for a short distance. One anchoring method may consist of a small load of rocks to keep the fabric in place during the discharge.

8.4.4 Straw Bale Dewatering Structure

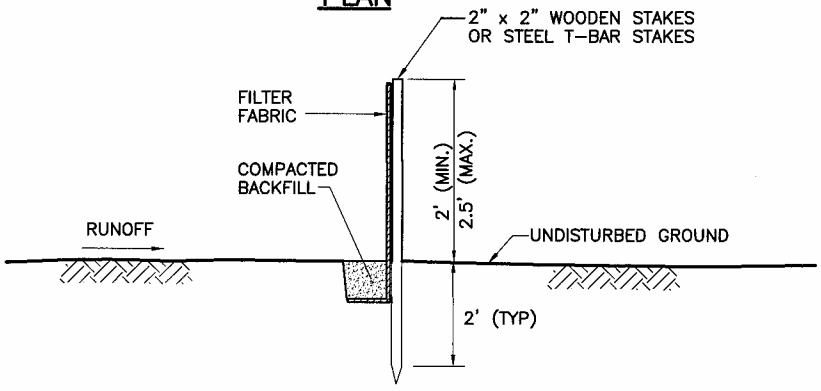
Straw bale dewatering structures are designed to dissipate and remove sediment from the water being discharged. Straw bale structures are used for on-land discharge of wash water and hydrostatic test water and in combination with other energy dissipating devices for high volume discharges. A straw bale dewatering structure is shown In Detail 6.

9.0 DRAWINGS AND FIGURES

Detail 1	Typical Silt Fence Barrier
Detail 2	Typical Straw or Hay Bale Barrier
Detail 3	Permanent Slope Breakers (Water Bars)
Detail 4	Erosion Control Matting Installation
Detail 5	Typical Dewatering Filter Bag
Detail 6	Typical Straw Bale Dewatering Structure
Detail 7	Typical Permanent Trench Breakers
Detail 8	”Dry” Wetland Crossing Method
Detail 9	Standard Wetland Crossing Method
Detail 10	Push/Pull Wetland Crossing Method
Detail 11	Non-Flowing Water Body Crossing Method
Detail 12	Typical Flowing Waterbody Crossing Method
Detail 13	Typical Dry Flume Crossing Method
Detail 14	Typical Dam & Pump Crossing
Detail 15	Typical Horizontal Drill (HDD) Site Plan & Profile
Detail 16	Typical Temporary Bridge Crossing
Detail 17	Typical Flume Bridge Crossing
Detail 18	Typical Railcar Bridge Crossing
Detail 19	Flexible Channel Liner Installation
Detail 20	Typical Rock Rip-Rap
Detail 21	Typical Road Bore Crossing
Detail 22	Streambank Reclamation – Brush Layer In Cross Cut Slope
Detail 23	Streambank Reclamation – Log Wall
Detail 24	Streambank Reclamation – Vegetated Geotextile Installation
Detail 25	Typical ROW Layout/Soil Handling
Detail 26	Header/Main Crossovers of Keystone Pipeline
Detail 27	Relocate/Replace Drainage Header/Main
Detail 28	Temporary Drain Tile Repair
Detail 29	Permanent Repair Method of Drain Tiles
Figure 1	Typical Site Specific Plan



PLAN



SECTION A–A

NOTES:

1. MATERIAL SHOULD BE WOVEN GEOTEXTILE FABRIC SUCH AS EXXON GTF 180 OR MIRAFI 600X, OR AN APPROVED EQUIVALENT. SECONDARY REINFORCEMENT, SUCH AS A CONSTRUCTION BARRIER FENCE OR WIRE MESH CAN ALSO BE USED BEHIND THE FILTER FABRIC.
2. SILT FENCE TO BE REINFORCED WITH 2" x 2" WOODEN STAKES OR STEEL T–BAR STAKES PLACED EVERY 8' OR CLOSER AS CONDITIONS REQUIRE.
3. ATTACH FILTER FABRIC AT EACH POST AT A MINIMUM OF 3 LOCATIONS.
4. THE FILTER FABRIC MINIMUM LENGTH OF 1' IS TO BE ANCHORED IN A TRENCH WITH WELL COMPACTED BACKFILL OVER THE FABRIC TO PREVENT UNDERMINING.
5. TO ELIMINATE POSSIBLE END FLOW, BOTH ENDS OF THE SILT FENCE SHALL BE TURNED AND EXTENDED UPSLOPE.
6. SILT FENCES ARE TO BE CHECKED AND MAINTAINED ON A REGULAR BASIS. REMOVE ANY BUILD–UP OF SEDIMENT.
7. WHERE ANCHORING CONDITIONS FOR THE SILT FENCE ARE POOR, PLACE STRAW BALES ON DOWNSTREAM SIDE OF THE SILT FENCE.
8. INSTALLATION TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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NO.	REVISION	DATE
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TYPICAL SILT FENCE BARRIER

PROJECT: 50388E

DETAIL 1

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:25pm

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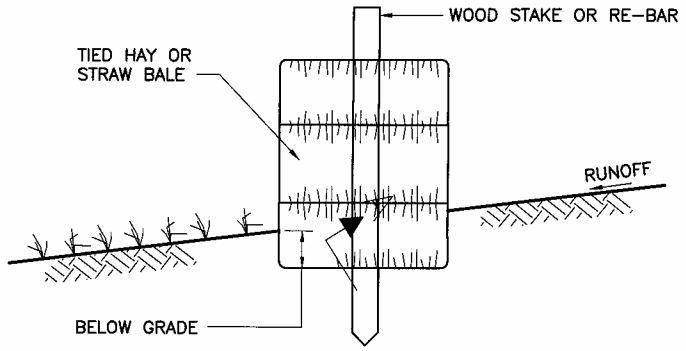

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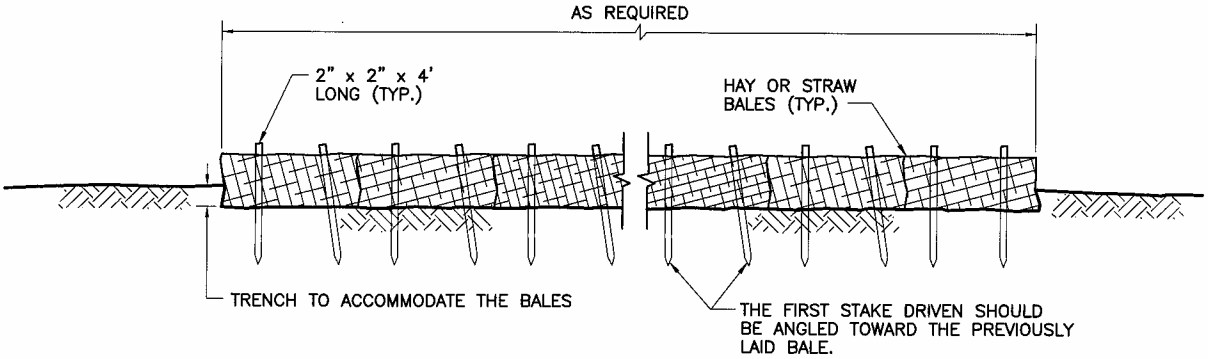

SECTION

NOTES:

1. TO ELIMINATE POSSIBLE END FLOW, BOTH ENDS OF THE STRAW BALE BARRIER SHOULD BE TURNED AND EXTENDED UPSLOPE.
2. EACH BALE SHOULD BE SECURED BY AT LEAST 2 STAKES. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. ANY GAPS CAN BE FILLED IN BY WEDGING LOOSE STRAW BETWEEN THE BALES. STAKES SHOULD BE DRIVEN. REBAR OR STANDARD "T" OR "U" STEEL POSTS CAN BE USED AS STAKES, BUT IT SHOULD BE NOTED THAT THEY MAY POSE A HAZARD TO EQUIPMENT IF THE BALES DISINTEGRATE.
3. COMPACT THE EXCAVATED SOIL AGAINST THE UPHILL SIDE OF THE BARRIER TO PREVENT PIPING.
4. STRAW OR HAY BALE BARRIERS REQUIRE CONTINUAL MAINTENANCE TO REMOVE COLLECTED SEDIMENT AND REPLACE DAMAGED BALES. PAY CLOSE ATTENTION TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
5. TO ELIMINATE POSSIBLE END FLOW, BOTH ENDS OF STRAW OR HAY BALE RUNS SHOULD BE TURNED AND EXTENDED UPSLOPE
6. INSTALLATION TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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TYPICAL STRAW OR HAY BALE BARRIER

PROJECT: 50388E

DETAIL 2

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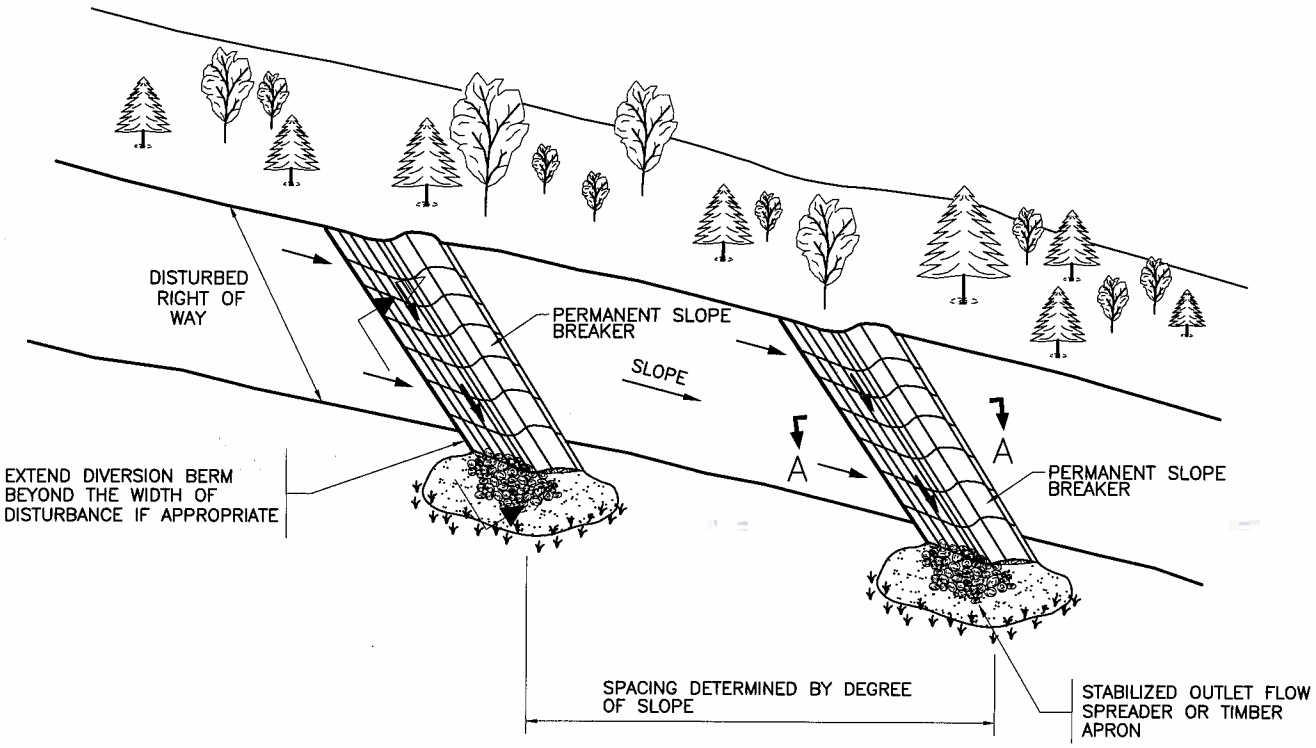
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:25pm



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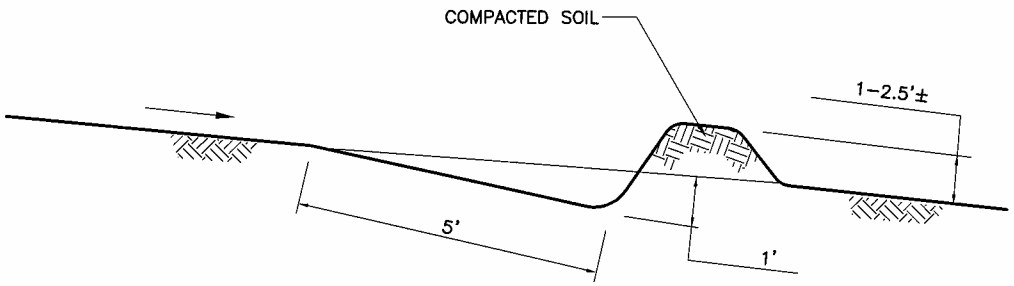

SECTION A–A

PERMANENT SLOPE BREAKER DETAIL

NOTES:

1. PERMANENT SLOPE BREAKERS TO PROVIDE POSITIVE DRAINAGE TO A STABILIZED OUTLET.
2. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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PERMANENT SLOPE BREAKERS (WATER BARS)

PROJECT: 50388E

DETAIL 3

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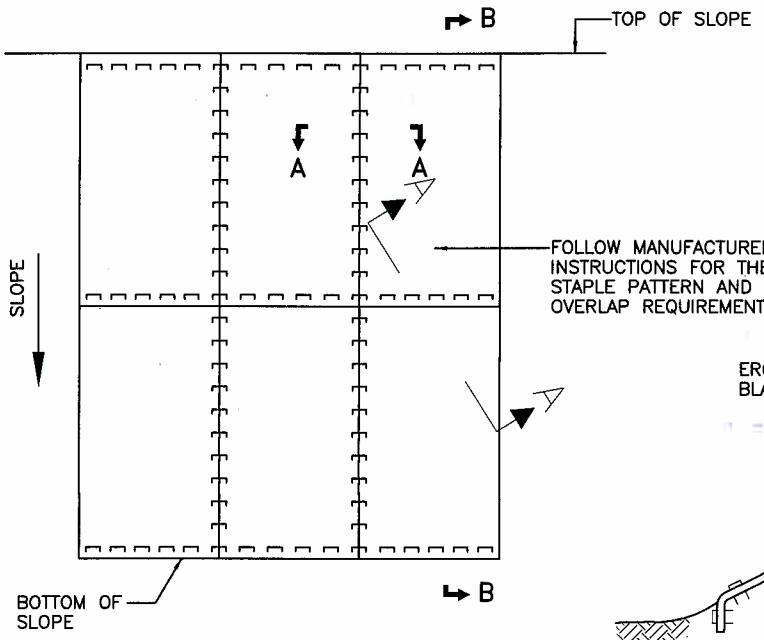
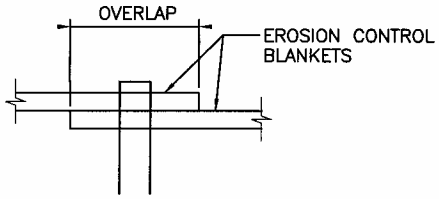
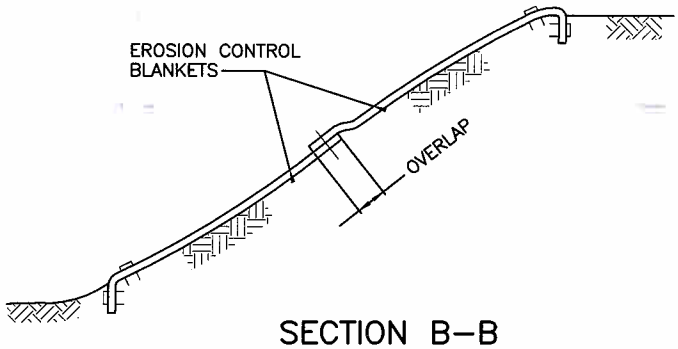
LAST PLOT DATE: Tue, 04 Apr 2006 - 3:25pm



PLAN VIEW



SECTION A–A



SECTION B–B

NOTES:

1. INSTALL MATTING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. PREPARE SOIL BEFORE INSTALLING MATTING, INCLUDING GRADING, REMOVAL OF LARGE ROCKS AND DEBRIS, AND THE APPLICATION OF SEED AND FERTILIZER IF NOT USING PRE–SEEDED MATTING.
3. EROSION CONTROL MATTING SHALL EXTEND COMPLETELY ACROSS DISTURBED AREAS TO PROTECT ERODIBLE SURFACES.
4. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE MATTING IN A TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
5. ROLL THE MATTING DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
6. AS AN ALTERNATIVE TO STAPLES, WOODEN STAKES CAN BE USED.
7. ENSURE COMPLETE CONTACT BETWEEN THE MATTING AND THE SLOPE FACE. ADDITIONAL STAPLES CAN BE USE TO ELIMINATE GAPS.
8. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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KEYSTONE PIPELINE PROJECT

EROSION CONTROL MATTING INSTALLATION

NO.	REVISION	DATE
1	GENERAL EDITORIAL REVISION	APR.04.2006
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

PROJECT: 50388E

DETAIL 4

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K-00-P-7000-300	ALS	JTG	RG

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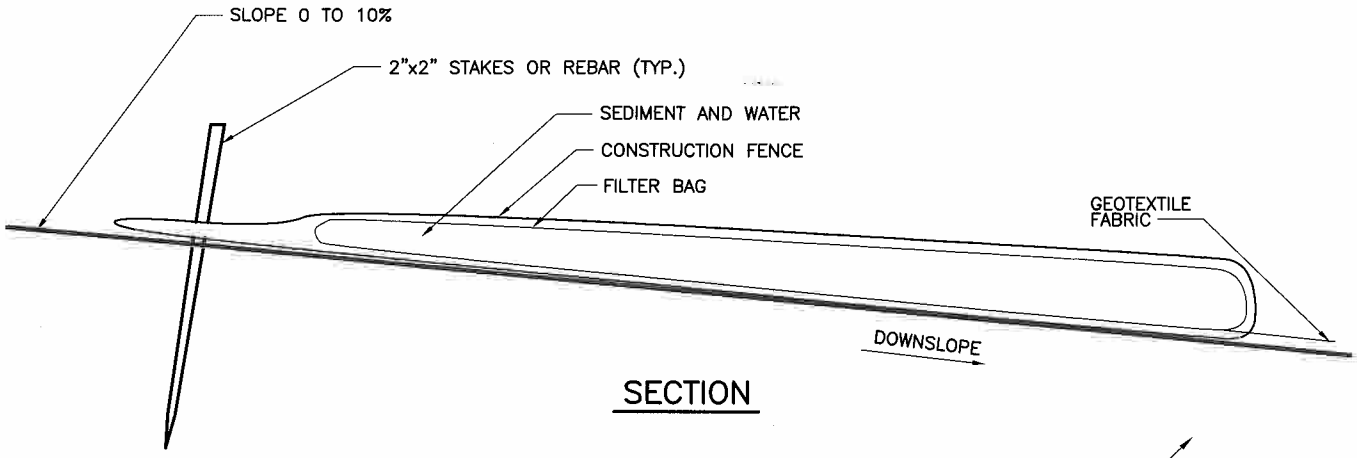
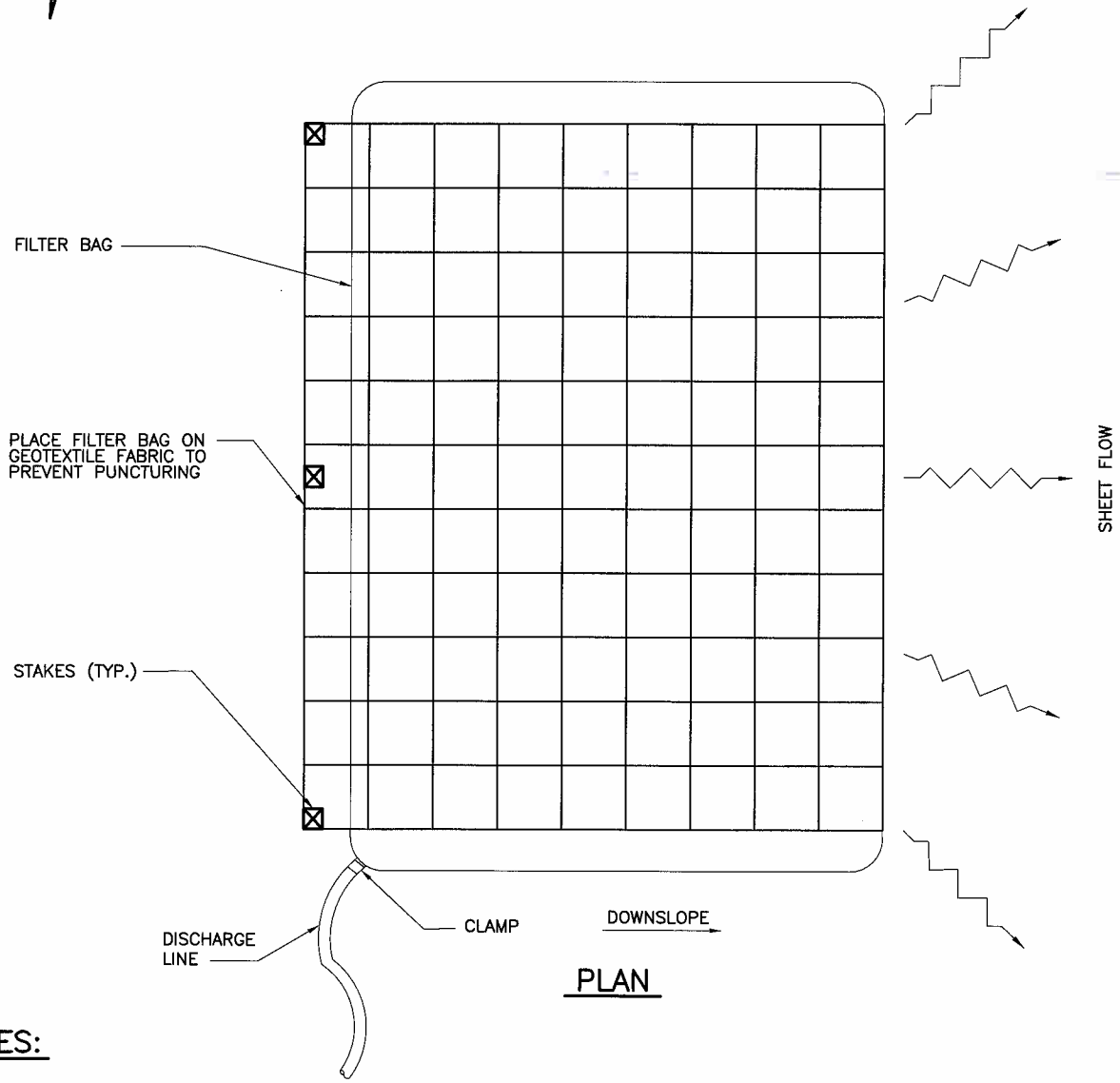


SECTION



PLAN

NOTES:

1. MANUFACTURED FILTER BAGS ARE A SUITABLE ALTERNATIVE TO STRAW BALE STRUCTURES FOR TRENCH DEWATERING. FILTER BAGS SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER.
2. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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TYPICAL DEWATERING FILTER BAG

PROJECT: 50388E

DETAIL 5

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 – 5:54pm

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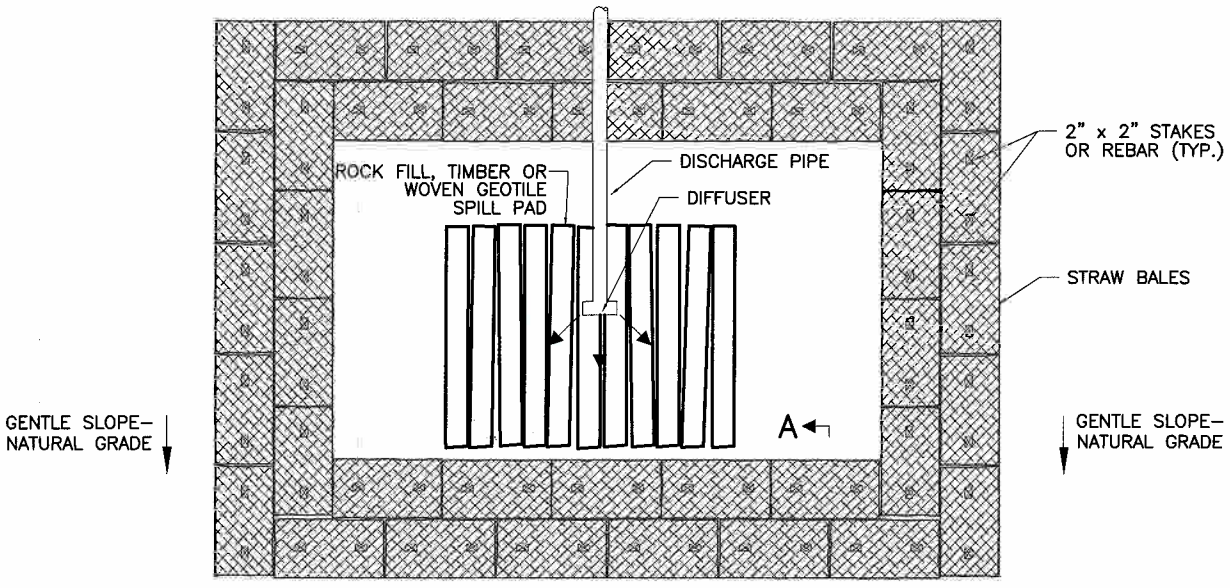
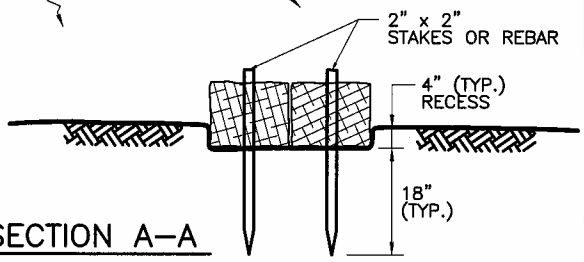


PLAN

SCALE: N.T.S.



SECTION A–A

NOTES:

1. INSTALL A STRAW BALE DEWATERING STRUCTURE WHEREVER IT IS NECESSARY AND AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATERBODIES OR WETLANDS.

2. DISCHARGE SITE SHOULD BE WELL VEGETATED AND LOCATED AT LEAST 50 FEET FROM ANY WATERBODY. THE TOPOGRAPHY OF THE SITE SHOULD BE SUCH THAT WATER WILL FLOW INTO THE DEWATERING STRUCTURE AND AWAY FROM ANY WORK AREAS. THE AREA DOWNSLOPE FROM THE DEWATERING SITE MUST BE REASONABLY FLAT OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.

3. DIRECT THE PUMPED WATER ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL, WEIGHTED TIMBERS, OR A WOVEN GEOTEXTILE STAKED TO THE GROUND SURFACE, SUCH AS MIRAFI 600X, TERRAFIX 400W, OR A COMPANY APPROVED EQUIVALENT. BEYOND THE SPILL PAD FORCE THE DISCHARGE WATER INTO SHEET FLOW USING STRAW BALES AND THE NATURAL TOPOGRAPHY.

4. DISCHARGE RATES SHOULD BE SUCH THAT THE CAPACITY OF THE STRUCTURE WILL NOT BE EXCEEDED.

5. DISCHARGE WATER SHALL BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD USING A COMBINATION OF STRAW BALES AND THE NATURAL TOPOGRAPHY. RECESS STRAW BALES. DRIVE TWO (2) STAKES OR REBAR INTO EACH BALE TO ANCHOR THEM IN PLACE.

6. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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TYPICAL STRAW BALE DEWATERING STRUCTURE

PROJECT: 50388E

DETAIL 6

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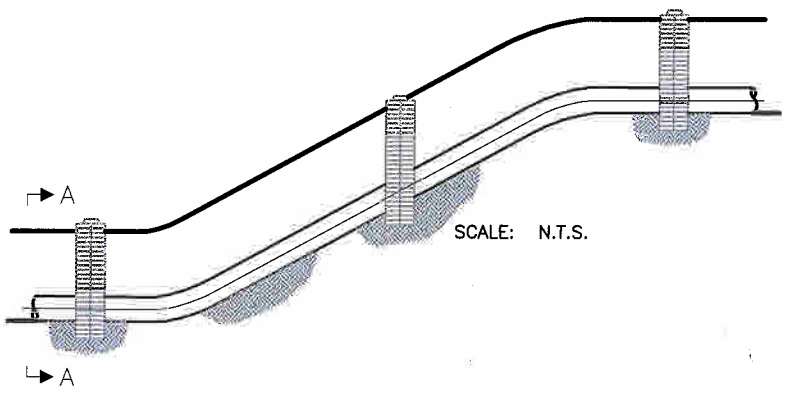

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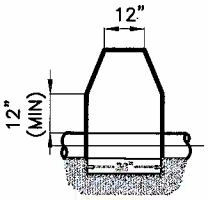
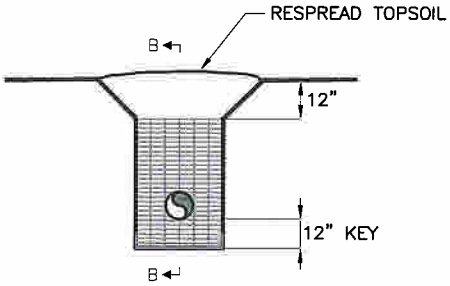


SECTION 'B–B'
SCALE: N.T.S.



SECTION 'A–A'
SCALE: N.T.S.

NOTES:

1. TRENCH BREAKERS TO BE INSTALLED AS SHOWN ON THE CONSTRUCTION DRAWINGS, WHERE DESCRIBED IN THE PLAN, AND AS DIRECTED BY KEYSTONE.

2. OPEN WEAVE HEMP OR JUTE SACKS SHALL BE FILLED WITH AN AVERAGE 55 LBS. MIXTURE OF:
   1) ONE (1) PART CEMENT AND SIX (6) PARTS SAND OR SUBSOIL, OR
   2) ONE (1) PART CEMENT, THREE (3) PARTS FLYASH, AND FIVE (5) PARTS SAND OR SUBSOIL
   3) SAND
   WITH JUST SUFFICIENT WATER TO PERMIT MIXTURE TO EXUDE AND BOND SACKS TOGETHER. TOPSOIL IS NOT TO BE USED IN SACKS.

3. KEY EACH TRENCH BREAKER A MINIMUM OF ONE (1) FT. INTO BOTTOMS AND SIDES OF TRENCH.

4. FOAM TRENCH BREAKERS MAY BE USED IN LIEU OF SAND SACK TRENCH BREAKERS.

5. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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TYPICAL PERMANENT TRENCH BREAKERS

PROJECT: 50388E

DETAIL 7

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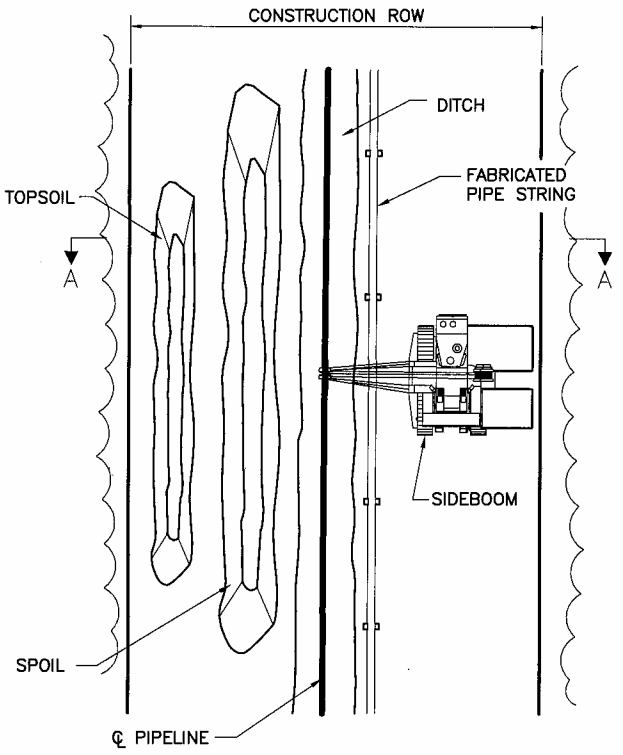
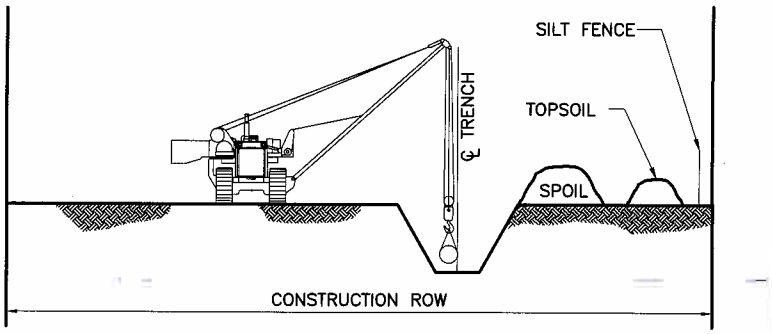


PLAN VIEW



SECTION "A–A"

CONSTRUCTION PROCEDURES:

1. IF A WETLAND IS BEING CULTIVATED AND BEING FARMED, NO WETLAND CONSTRUCTION PROCEDURES ARE REQUIRED.
2. FLAG WETLAND BOUNDARIES PRIOR TO CLEARING.
3. NO REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS APPROXIMATELY 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER KEYSTONE'S SPILL PREVENTION PROCEDURES.
4. INSTALL TEMPORARY SLOPE BREAKER UPSLOPE WITHIN 100 FEET OF WETLAND BOUNDARY IF DIRECTED BY KEYSTONE.
5. CONSTRUCT WHEN DRY, IF POSSIBLE. IF SITE BECOMES WET AT TIME OF TRENCHING, AVOID SOIL COMPACTION BY UTILIZING TIMBER RIP–RAP OR PREFABRICATED EQUIPMENT MATS.
6. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) AT DOWN SLOPE EDGE OF RIGHT–OF–WAY ALONG WETLAND EDGE IF EVIDENT, OTHERWISE INSTALL BARRIER ON BOTH EDGES.
7. RESTRICT ROOT GRUBBING TO ONLY THAT AREA OVER THE DITCHLINE AND REMOVE STUMPS FROM WETLAND FOR DISPOSAL.
8. CONDUCT TRENCH LINE TOPSOIL STRIPPING (IF TOPSOIL IS NOT SATURATED). SALVAGE TOPSOIL TO ACTUAL DEPTH OR A MAXIMUM DEPTH OF 12 INCHES,
9. TRENCH THROUGH WETLANDS.
10. PIPE SECTION TO BE FABRICATED WITHIN THE WETLAND AND ADJACENT TO ALIGNMENT, OR IN STAGING AREA OUTSIDE THE WETLAND AND WALKED IN.
11. LOWER–IN PIPE. PRIOR TO BACKFILLING TRENCH, IF REQUIRED, TRENCH PLUGS SHALL BE INSTALLED AS REQUIRED. BACKFILL TRENCH.
12. RESTORE GRADE TO NEAR PRE–CONSTRUCTION TOPOGRAPHY, REPLACE TOPSOIL AND INSTALL PERMANENT EROSION CONTROL.
13. IF UTILIZED, REMOVE TIMBER MATS OR PREFABRICATED MATS FROM WETLANDS UPON COMPLETION.

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"DRY" WETLAND CROSSING METHOD

PROJECT: 50388E

DETAIL 8

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

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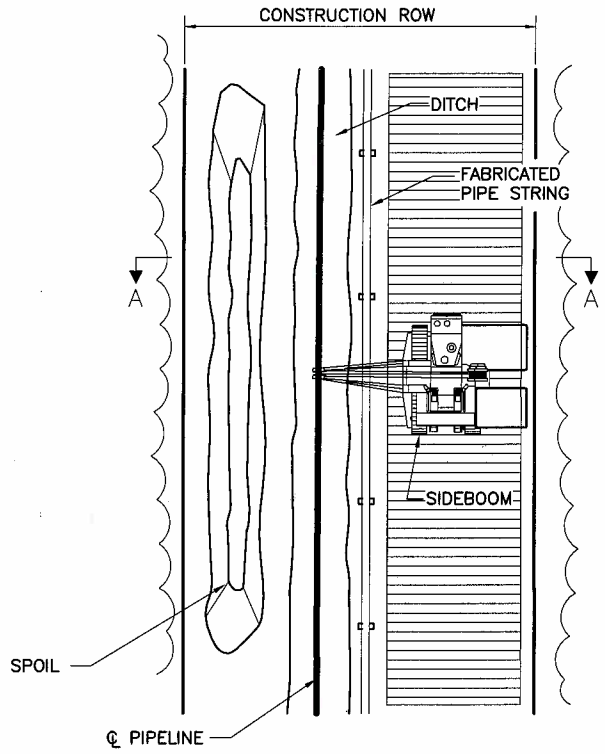
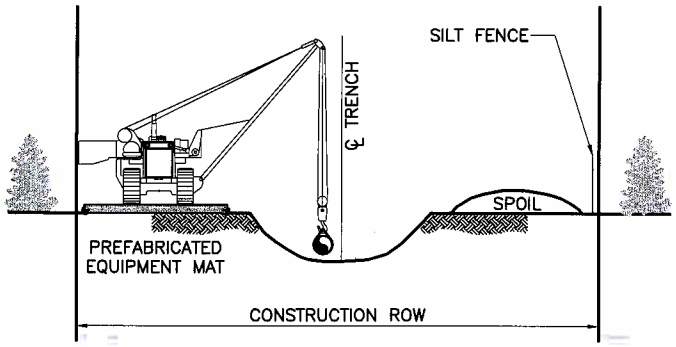


PLAN VIEW



SECTION "A–A"

CONSTRUCTION PROCEDURES:

1. FLAG WETLAND BOUNDARIES PRIOR TO CLEARING.
2. NO REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS APPROXIMIATLY 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER KEYSTONE'S SPILL PREVENTION PROCEDURES.
3. INSTALL TEMPORARY SLOPE BREAKER UPSLOPE WITHIN 100 FEET OF WETLAND BOUNDARY IF DIRECTED BY KEYSTONE.
4. INSTALL TIMBER MATS/RIP–RAP THROUGH ENTIRE WETLAND AREA. EQUIPMENT NECESSARY FOR RIGHT–OF–WAY CLEARING MAY MAKE ONE (1) PASS THROUGH THE WETLAND BEFORE MATS ARE INSTALLED.
5. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) AT DOWN SLOPE EDGE OF RIGHT–OF–WAY AND ALONG WETLAND EDGE AS REQUIRED.
6. RESTRICT ROOT GRUBBING TO ONLY THAT AREA OVER THE DITCHLINE AND DITCH SPOIL AREAS AND REMOVE FROM WETLAND FOR DISPOSAL.
7. TOPSOIL STRIPPING SHALL NOT BE REQUIRED IN SATURATED SOIL CONDITIONS.
8. LEAVE HARD PLUGS AT THE EDGE OF WETLAND UNTIL JUST PRIOR TO TRENCHING.
9. PIPE SECTION MAY BE FABRICATED WITHIN THE WETLAND AND ADJACENT TO ALIGNMENT, OR IN STAGING AREA OUTSIDE THE WETLAND AND WALKED IN.
10. TRENCH THROUGH WETLANDS.
11. LOWER–IN PIPE, INSTALL TRENCH PLUGS AT WETLAND EDGES AS REQUIRED AND BACKFILL IMMEDIATELY.
12. REMOVE TIMBER MATS OR PREFABRICATED MATS FROM WETLANDS UPON COMPLETION.
13. RESTORE GRADE TO NEAR PRE–CONSTRUCTION TOPOGRAPHY, REPLACE TOPSOIL AND INSTALL PERMANENT EROSION CONTROL.

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STANDARD WETLAND CROSSING METHOD

PROJECT: 50388E

DETAIL 9

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K-00-P-7000-300	ALS	JTG	RG

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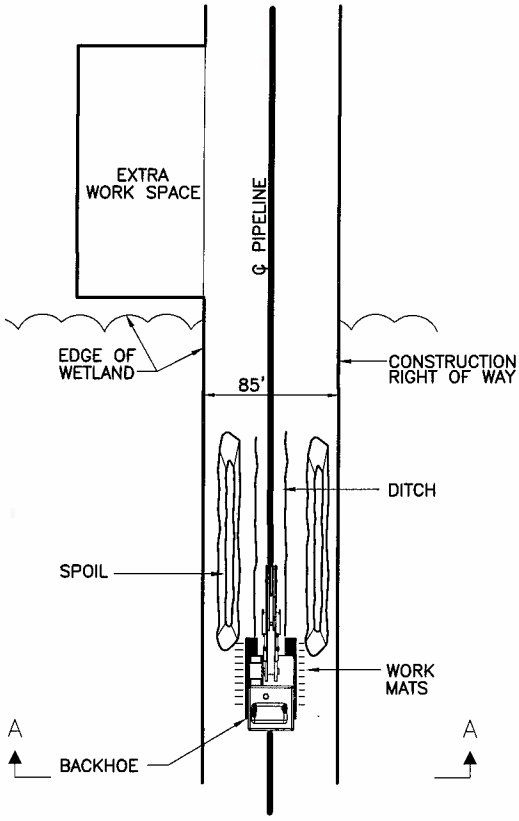
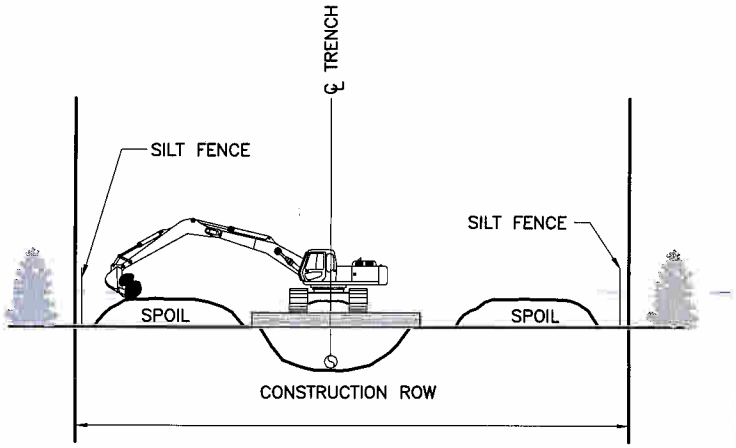


PLAN VIEW



SECTION "A–A"

CONSTRUCTION PROCEDURES:

1. FLAG WETLAND BOUNDARIES PRIOR TO CLEARING.
2. NO REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN APPROXIMATELY 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER KEYSTONE'S SPILL PREVENTION PROCEDURES.
3. INSTALL TEMPORARY SLOPE BREAKER UPSLOPE WITHIN 100 FEET OF WETLAND BOUNDARY AS DIRECTED BY KEYSTONE.
4. RESTRICT ROOT GRUBBING TO ONLY THE AREA OVER THE DITCHLINE.
5. TOPSOIL STRIPPING SHALL NOT BE REQUIRED IN SATURATED SOIL CONDITIONS.
6. UTILIZE AMPHIBIOUS EXCAVATORS (PONTOON MOUNTED BACKHOES) OR TRACKED BACKHOES SUPPORTED BY FABRICATED TIMBER MATS OR FLOATS TO EXCAVATE TRENCH. IF FABRICATED TIMBER MATS ARE USED FOR STABILIZATION, THE BACKHOE SHALL GRADUALLY MOVE ACROSS THE WETLAND BY MOVING THE MAT FROM IMMEDIATELY BEHIND TO IMMEDIATELY IN FRONT OF THE BACKHOE'S PATH.
7. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) AT EDGE OF RIGHT–OF–WAY AND ALONG WETLAND EDGE IF PRACTICAL.
8. FABRICATE PIPE IN STAGING AREA OUTSIDE THE WETLAND IN THE EXTRA WORK SPACE AS INDICATED ON THE CONSTRUCTION DRAWINGS.
9. LEAVE HARD PLUGS AT THE EDGE OF THE WETLAND UNTIL JUST PRIOR TO PIPE PLACEMENT.
10. FLOAT PIPE IN PLACE, LOWER–IN, INSTALL TRENCH PLUGS AT WETLAND EDGES WHERE REQUIRED AND BACKFILL IMMEDIATELY.
11. REMOVE TIMBER MATS OR PREFABRICATED MATS OF NON–NATIVE MATERIAL FROM WETLANDS UPON COMPLETION.
12. RESTORE GRADE TO NEAR PRE–CONSTRUCTION TOPOGRAPHY AND INSTALL PERMANENT EROSION CONTROL.

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KEYSTONE PIPELINE PROJECT

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PUSH/PULL WETLAND CROSSING METHOD

PROJECT: 50388E

DETAIL 10

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

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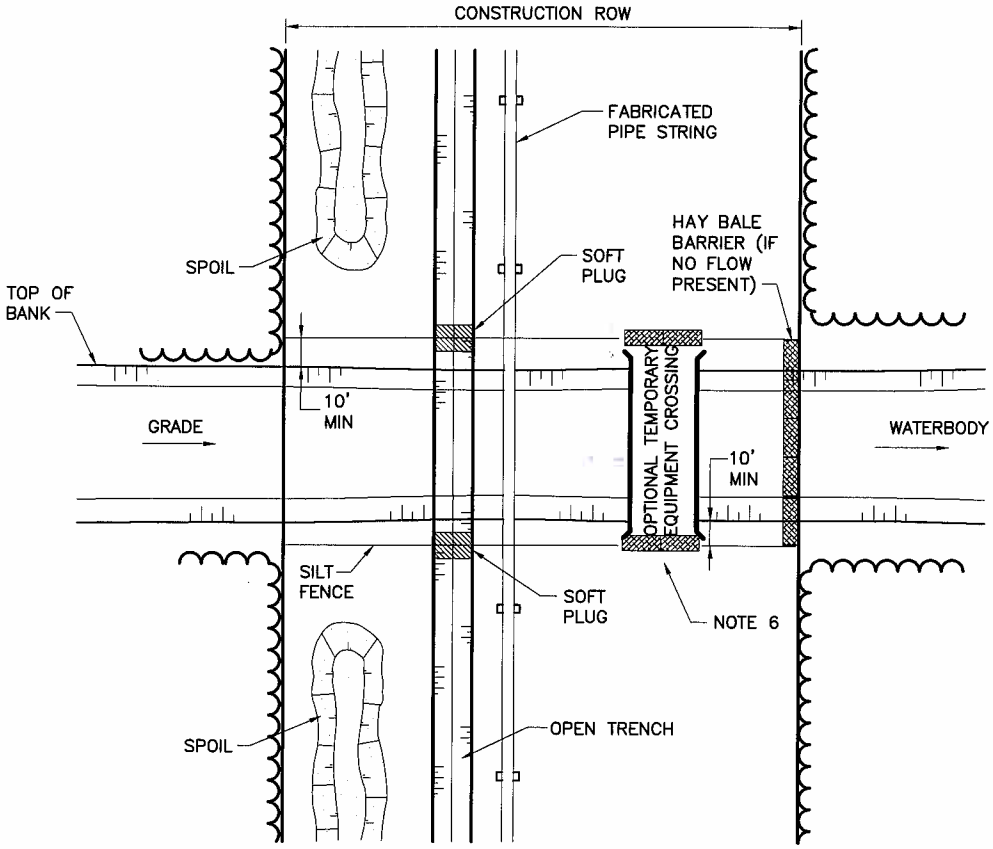

PLAN VIEW

CONSTRUCTION PROCEDURES:

1. METHOD APPLIES TO CROSSINGS WHERE NO FLOWING WATER IS PRESENT AT THE TIME OF CROSSING OR AS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
2. CONTRACTOR MAY "MAINLINE THROUGH" THE CROSSING OR UP TO BOTH SIDES OF THE CROSSING; STRING, WELD, COAT AND WEIGHT (IF NECESSARY), USING THE MAINLINE CREW WITH THE PIPE SKIDDED OVER THE CROSSING.
3. NO REFUELING OF MOBILE EQUIPMENT WITHIN APPROXIMATELY 100 FEET OF DRY CHANNEL. REFUEL STATIONARY EQUIPMENT AS PER KEYSTONE'S SPILL PREVENTION PROCEDURES.
4. INSTALLATION OF TEMPORARY EQUIPMENT CROSSING IS OPTIONAL AT THE DISCRETION OF KEYSTONE.
5. IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA. STOCKPILE TOPSOIL AND SPOIL SEPARATELY. TOPSOIL AND SPOIL WILL NOT BE STOCKPILED IN THE CROSSING CHANNEL AND WILL BE PLACED A MINIMUM OF 10 FEET FROM CROSSING BANKS WITHIN THE CONSTRUCTION RIGHT OF WAY.
6. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION RIGHT OF WAY FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
7. IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL A MINIMUM OF 10 FEET FROM HIGH BANK AND WITHIN THE CONSTRUCTION RIGHT OF WAY.
8. BACKFILL WITH NATIVE MATERIAL.
9. RESTORE CROSSING CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
10. RESTORE CROSSING BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE WITH EROSION CONTROL.

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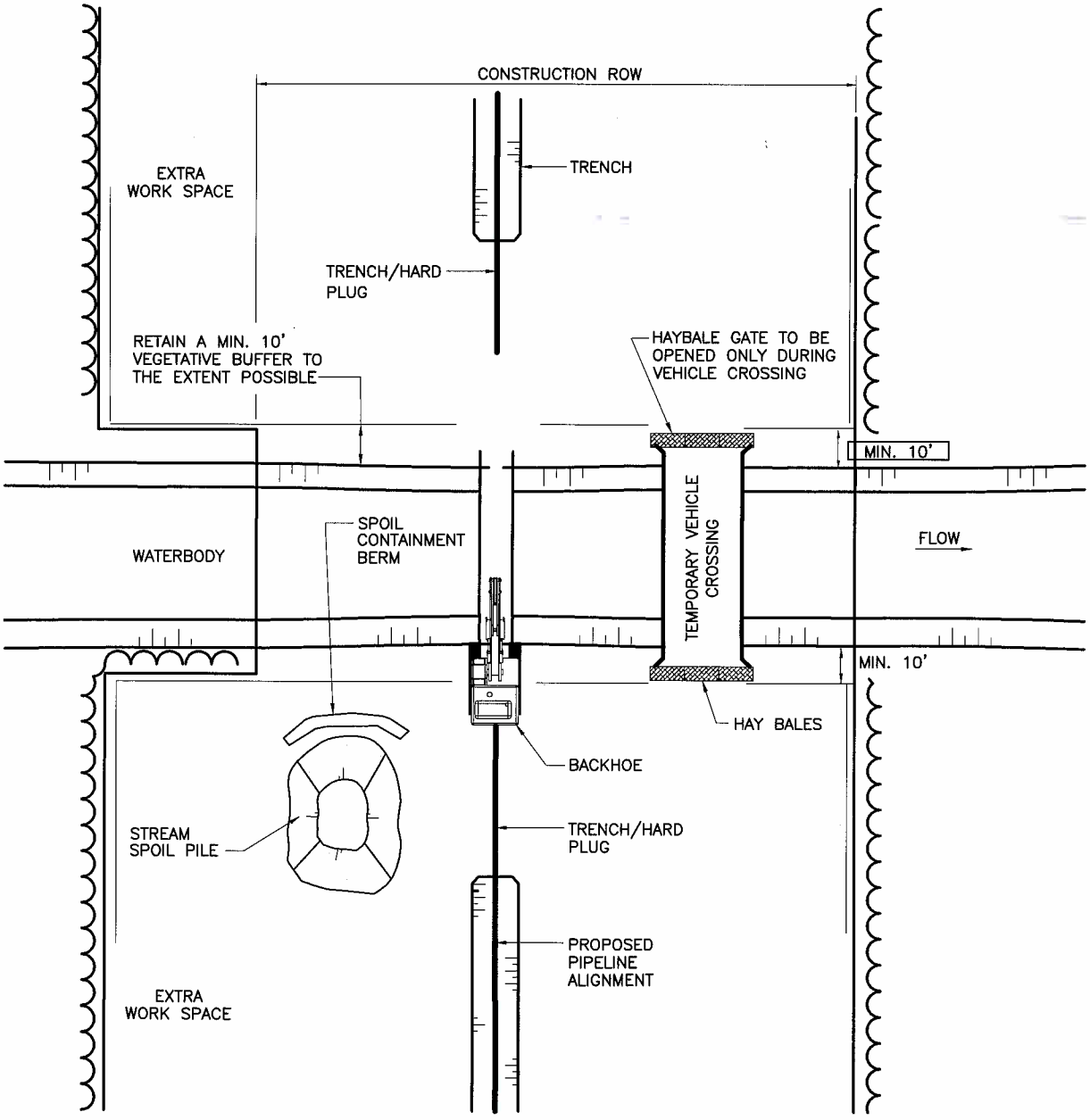
NON-FLOWING WATER BODY CROSSING METHOD

PROJECT: 50388E

DETAIL 11

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY	LAST PLOT DATE
K-00-P-7000-300	ALS	JTG	RG	Tue, 04 Apr 2006 - 3:28pm

SEE DETAIL 12a FOR
CONSTRUCTION PROCEDURE



PLAN VIEW

PREPARED BY:
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TYPICAL FLOWING WATERBODY CROSSING METHOD

PROJECT: 50388E

DETAIL 12

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CONSTRUCTION PROCEDURES:

1. RIGHT-OF-WAY BOUNDARIES AND WORK SPACE LIMITS SHALL BE CLEARLY DELINEATED. STAGING FOR MAKEUP SHALL BE LOCATED A MINIMUM OF 10 FEET FROM WATERBODY.

2. CLEARING LIMITS WILL BE CLEARLY DELINEATED AND A 10 FOOT VEGETATIVE BUFFER STRIP BETWEEN DISTURBED AREA AND THE WATERBODY SHALL BE MAINTAINED TO THE EXTENT POSSIBLE. ALL CLEARING SHALL BE MINIMIZED TO THE EXTENT POSSIBLE AND TO ONLY THAT NECESSARY FOR CONSTRUCTION. WOODY VEGETATION SHALL BE CUT AT GROUND LEVEL AND THE STUMPS/ROOTS LEFT IN PLACE TO THE EXTENT POSSIBLE.

3. TOPSOIL SHALL BE STRIPPED FROM THE DITCH LINE IN ALL WETLANDS RIPARIAN.

4. CONTRACTOR SHALL INSTALL SIGNS APPROXIMATELY 100 FEET MINIMUM FROM EACH WATERBODY AND WETLAND TO IDENTIFY THE HAZARDOUS MATERIALS EXCLUSION AREA.

5. EROSION AND SEDIMENT CONTROL

   A. CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES, AS DEPICTED OR ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS WATERBODY OR WETLAND.

   B. NO HEAVILY SILT LADEN WATER SHALL BE DISCHARGED DIRECTLY OR INDIRECTLY INTO THE WATERBODY. ALL EROSION AND SEDIMENT CONTROL STRUCTURE LOCATIONS AS DEPICTED ARE APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED BY THE COMPANY INSPECTOR TO SUIT ACTUAL SITE CONDITIONS. SILT FENCE OR STRAW BALE INSTALLATIONS SHALL INCLUDE REMOVABLE SECTIONS TO FACILITATE ACCESS DURING CONSTRUCTION.

   C. SEDIMENT LADEN WATER FROM TRENCH DEWATERING SHALL BE DISCHARGED TO A WELL VEGETATED UPLAND AREA, INTO A STRAW BALE DEWATERING STRUCTURE OR GEOTEXTILE FILTER BAG. SEDIMENT CONTROL STRUCTURES MUST BE IN PLACE AT ALL TIMES ACROSS THE DISTURBED CONSTRUCTION RIGHT OF WAY EXCEPT DURING EXCAVATION/INSTALLATION OF THE CROSSING PIPE.

   D. SOFT DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATER CROSSING IS INSTALLED AND BACKFILLED.

   E. TRENCH BREAKERS ARE TO BE INSTALLED AT THE SAME SPACING AND IMMEDIATELY UPSLOPE OF PERMANENT SLOPE BREAKERS, OR AS DIRECTED BY THE COMPANY.

6. CONTRACTOR SHALL MAINTAIN HARD PLUGS IN THE DITCH AT THE WATERBODY UNTIL JUST PRIOR TO PIPE INSTALLATION. CONTRACTOR SHALL EXCAVATE TRENCH AND INSTALL PIPE AS EXPEDIENTLY AS PRACTICAL TO REDUCE THE DURATION OF WORK ACTIVITIES IN THE WATERBODY BED.

7. CONTRACTOR SHALL PLACE TRENCH SPOIL ONLY IN CERTIFICATED WORK SPACE AND A MINIMUM OF 10 FEET FROM THE WATERBODY BANKS TO PREVENT ENTRY OF SPOIL INTO THE WATERBODY. SPOIL SHALL BE CONTAINED AS NECESSARY USING EITHER A STRAW BALE BARRIER OR AN EARTH/ROCK BERM.

8. CONTRACTOR SHALL RESTORE THE WATERBODY AND BANKS TO APPROXIMATE PRECONSTRUCTION CONTOURS, UNLESS OTHERWISE APPROVED BY THE COMPANY. CONTRACTOR SHALL INSTALL PERMANENT EROSION AND SEDIMENT CONTROL STRUCTURES AS INDICATED. ANY MATERIALS PLACED IN THE WATERBODY TO FACILITATE CONSTRUCTION SHALL BE REMOVED DURING RESTORATION. BANKS SHALL BE STABILIZED AND TEMPORARY SEDIMENT BARRIERS INSTALLED AS SOON AS POSSIBLE AFTER CROSSING, BUT WITHIN 24 HOURS OF COMPLETING THE CROSSING. MAINTAIN A SILT FENCE OR STRAW BALE BARRIER ALONG THE WATERBODY AND WETLAND BOUNDARIES UNTIL VEGETATION IS ESTABLISHED IN ADJACENT DISTURBED AREAS.

9. VEHICLE CROSSING CAN BE CONSTRUCTED USING EITHER A FLUME CROSSING OR A TEMPORARY BRIDGE. VEHICLE CROSSING ONLY REQUIRED IF STREAM SUPPORTS A STATE DESIGNATED FISHERY.

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KEYSTONE PIPELINE PROJECT

NO.	REVISION	DATE
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

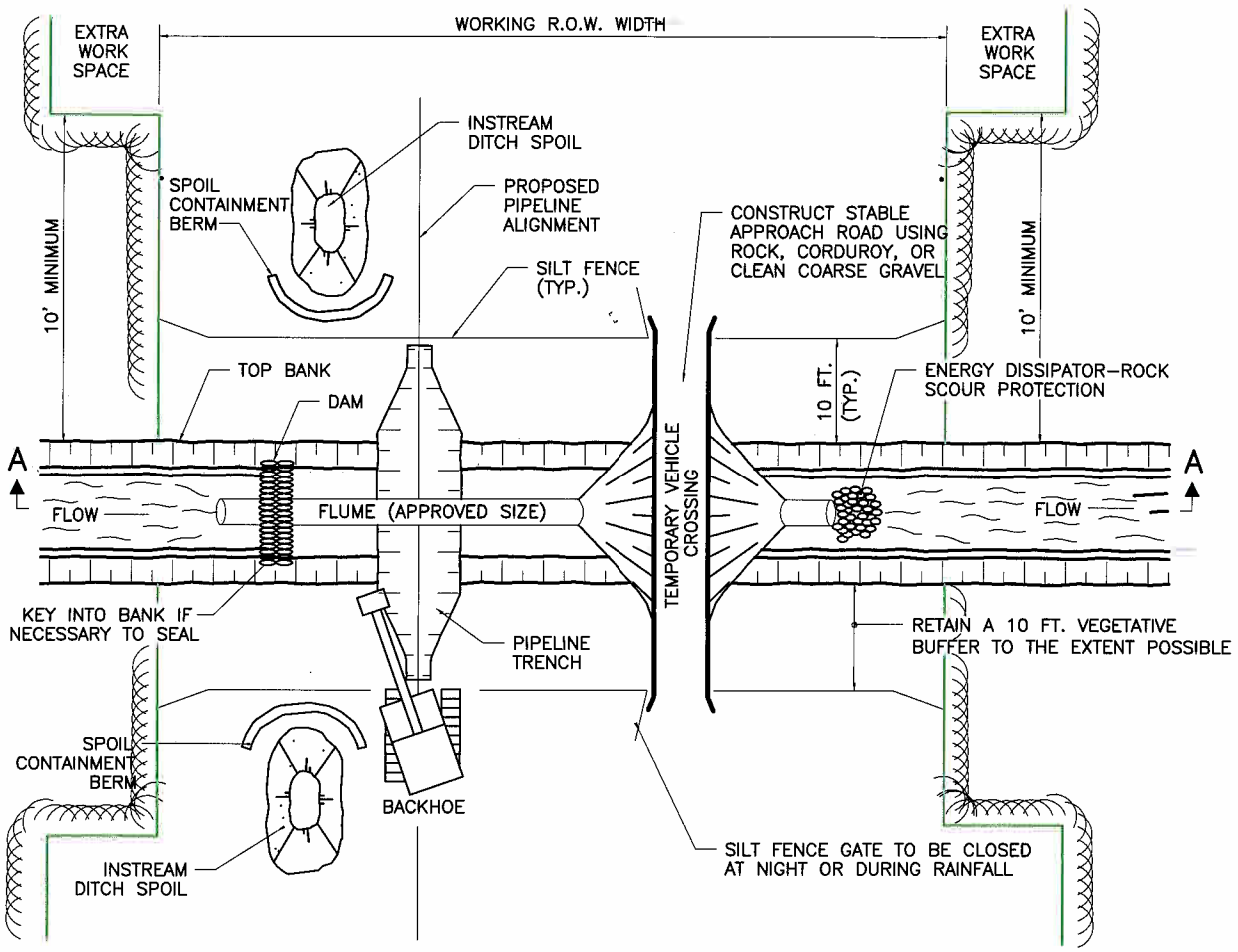
TYPICAL FLOWING WATERBODY CROSSING METHOD

PROJECT: 50388E

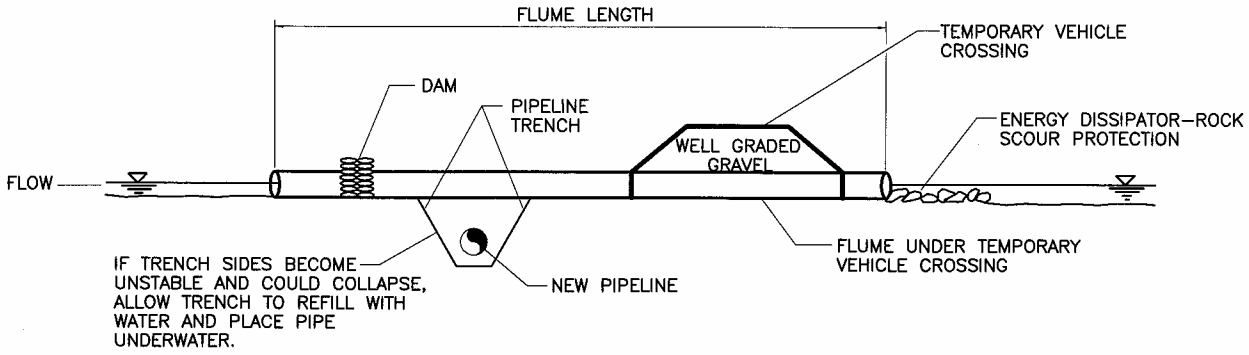
DETAIL 12a

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 – 3:26pm



PLAN VIEW



SECTION 'A–A'

NOTES:
1. PIPELINE PLACEMENT WITHIN RIGHT–OF–WAY CONCEPTUAL ONLY.
2. SEE DETAIL 13a FOR CONSTRUCTION PROCEDURES.

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TYPICAL DRY FLUME CROSSING METHOD

PROJECT: 50388E

DETAIL 13

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 – 3:28pm

CONSTRUCTION PROCEDURES:

1. MARK OUT AND MAINTAIN LIMITS OF AUTHORIZED WORK AREAS WITH FENCING OR FLAGGING TAPE TO AVOID UNNECESSARY DISTURBANCE OF VEGETATION. ENSURE EQUIPMENT OPERATORS WORKING ON THE CROSSING HAVE BEEN BRIEFED ABOUT THIS PLAN AND THE MEASURES NEEDED TO PROTECT WATER QUALITY.

2. ALL NECESSARY EQUIPMENT AND MATERIALS TO BUILD THE FLUME MUST BE ON SITE OR READILY AVAILABLE PRIOR TO COMMENCING IN-WATER WORK.

3. TO THE EXTENT POSSIBLE, MAINTAIN A MINIMUM 10 FT. VEGETATIVE BUFFER STRIP BETWEEN DISTURBED AREAS AND THE WATERCOURSE. INSTALL AND MAINTAIN A SILT FENCE OR STRAW BALE BARRIER UPSLOPE OF THE BUFFER STRIP ON EACH SIDE OF THE WATERCOURSE.

4. CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES, AS DEPICTED OR ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS STREAM.
   a. NO HEAVILY SILT LADEN WATER SHALL BE DISCHARGED DIRECTLY INTO THE STREAM.
   b. EROSION AND SEDIMENT CONTROL STRUCTURE LOCATIONS AS DEPICTED ARE APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED BY THE COMPANY INSPECTOR TO ACTUAL SITE CONDITIONS.
   c. SILT FENCE OR STRAW BALE INSTALLATIONS SHALL INCLUDE REMOVABLE SECTIONS TO FACILITATE ACCESS DURING CONSTRUCTION. UTILIZE STRAW BALE BARRIERS ONLY IN LIEU OF A SILT FENCE WHERE FREQUENT ACCESS IS REQUIRED.
   d. SEDIMENT LADEN WATER FROM TRENCH DEWATERING SHALL BE DISCHARGED TO A WELL VEGETATED UPLAND AREA INTO A STRAW BALE DEWATERING STRUCTURE OR GEOTEXTILE FILTER BAG.
   e. SEDIMENT CONTROL STRUCTURES MUST BE IN PLACE AT ALL TIMES ACROSS THE DISTURBED PORTIONS OF THE RIGHT-OF-WAY EXCEPT DURING EXCAVATION/INSTALLATION OF THE CROSSING PIPE.
   f. SOFT DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE RIVER CROSSING UNTIL THE RIVER CROSSING IS INSTALLED AND BACKFILLED.

5. PIPE SHALL BE STRUNG AND WELDED FOR READY INSTALLATION PRIOR TO WATERCOURSE TRENCHING.

6. FLUME CAPACITY DURING DRY CROSSING SHALL BE SUFFICIENT TO ACCOMMODATE 1.5 TIMES THE FLOW MEASURED AT THE TIME OF CONSTRUCTION PROVIDED THAT THE FLUMES WILL BE IN PLACE NOT MORE THAN 96 HOURS AND NO PRECIPITATION IS FORECAST. FLUME CAPACITY FOR VEHICLE ACCESS SHALL BE SUFFICIENT TO PASS THE 2 YEAR DESIGN FLOW OR THE FLOW REASONABLY EXPECTED TO OCCUR DURING THE INSTALLATION. EXCESS FLUMES REQUIRED FOR LONGER TERM ACCESS SHALL BE CAPPED DURING DRY CROSSING PROCEDURES.

7. ENSURE THAT THE DAMS AND VEHICLE-CROSSING ARE LOCATED FAR ENOUGH APART TO ALLOW FOR A WIDE EXCAVATION. FLUMES ARE TO BE SET WITH 10 PERCENT OF THEIR DIAMETER BELOW STREAMBED LEVEL WHERE SOIL CONDITIONS PERMIT (OTHERWISE INSTALLED AT STREAM GRADE AND SLOPE).

8. PLACE IMPERVIOUS DAMS AT EACH END OF THE FLUME, UPSTREAM FIRST, THEN DOWNSTREAM. ACCEPTABLE ALTERNATIVES INCLUDE GRAVEL WITH RIP-RAP PROTECTION, SAND BAGS, STEEL PLATE AND ROCKFILL. DURING INSTALLATION, INSTALL AN IMPERVIOUS MEMBRANE, IF NECESSARY, TO LIMIT LEAKAGE, DAMS MAY NEED KEYING INTO THE BANK AND STREAMBED.

9. EXCAVATE TRENCH THROUGH PLUGS AND UNDER FLUME FROM BOTH SIDES. WORK IS TO BE COMPLETED AS QUICKLY AS POSSIBLE.
   a. LOWER IN PIPE BY PASSING UNDER FLUME AND BACKFILL IMMEDIATELY WITH SPOIL MATERIAL.
   b. IT IS NOT NECESSARY TO DEWATER THE IN-STREAM TRENCH, HOWEVER, DISPLACED WATER SHALL BE PUMPED TO A STABLE UPLAND AREA TO AVOID OVERTOPPING OF DAMS DURING PIPE PLACEMENT.
   c. IF THE SPOIL MATERIAL IS NOT SUITABLE, USE IMPORTED CLEAN GRANULAR MATERIAL.
   d. IF BLASTING IS REQUIRED, USE CONTROLLED BLASTING TECHNIQUES TO PREVENT DAMAGE TO THE FLOW CONVEYANCE SYSTEM. ALTERNATIVELY, BLASTING MAY BE ACCOMPLISHED PRIOR TO FLUME INSTALLATION BY DRILLING THROUGH THE OVERBURDEN.

10. EXCAVATED MATERIAL MUST NOT BE STOCKPILED WITHIN 10 FT. OF THE WATERCOURSE. THIS MATERIAL SHALL BE CONTAINED TO PREVENT SATURATED SOIL FROM FLOWING BACK INTO THE WATERCOURSE.

11. DEWATERING OF THE ONLAND TRENCH SHOULD OCCUR IN A STABLE VEGETATED AREA A MINIMUM OF 50 FT. FROM ANY WATERBODY. THE PUMP DISCHARGE SHOULD BE DIRECTED ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL OR TIMBERS TO PREVENT LOCALIZED EROSION. THE DISCHARGE WATER SHOULD ALSO BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD BY USING STRAW BALES AND THE NATURAL TOPOGRAPHY.

12. FLUMES SHOULD BE REMOVED AS SOON AS POSSIBLE, WHEN NO LONGER REQUIRED FOR PIPE LAYING OR FOR ROAD ACCESS, IN THE FOLLOWING MANNER:
   a. REMOVE THE VEHICLE CROSSING RAMP. BANKS ARE TO BE RESTORED TO A STABLE ANGLE AND PROTECTED WITH EROSION RESISTANT MATERIAL COMPATIBLE WITH THE FLOW CONDITIONS (E.G., EROSION CONTROL BLANKETS, CRIBBING, ROCK RIP-RAP, ETC.) TO THE MAXIMUM EXTENT POSSIBLE BEFORE REMOVING THE DAMS.
   b. REMOVE DOWNSTREAM DAM.
   c. REMOVE UPSTREAM DAM.
   d. REMOVE FLUME.
   e. COMPLETE BANK TRIMMING AND EROSION PROTECTION. IF SANDBAGS ARE USED FOR THE DAMS, PLACE AND REMOVE BY HAND TO AVOID EQUIPMENT BREAKING BAGS.

13. RESTORE THE STREAM BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONTOURS, BUT NOT TO EXCEED 2 HORIZONTAL TO 1 VERTICAL.
   a. INSTALL PERMANENT EROSION AND SEDIMENT CONTROL STRUCTURES AS INDICATED ON A SITE SPECIFIC BASIS. IN THE ABSENCE OF SITE SPECIFIC INFORMATION, A FLEXIBLE CHANNEL LINER SUCH AS NAG C125 OR C350 WHICH IS CAPABLE OF WITHSTANDING ANTICIPATED FLOW SHALL BE INSTALLED. ALTERNATIVELY, ROCK RIP-RAP SHALL BE INSTALLED.
   b. ANY MATERIALS PLACED IN THE STREAM TO FACILITATE CONSTRUCTION SHALL BE REMOVED DURING RESTORATION. BANKS SHALL BE STABILIZED AND TEMPORARY SEDIMENT BARRIERS INSTALLED AS SOON AS POSSIBLE AFTER CROSSING, BUT WITHIN 24 HOURS OF COMPLETING THE CROSSING.
   c. MAINTAIN A SILT FENCE OR STRAW BALE BARRIER ALONG THE WATER COURSE UNTIL VEGETATION IS ESTABLISHED IN ADJACENT DISTURBED AREAS.

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KEYSTONE PIPELINE PROJECT

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TYPICAL DRY FLUME CROSSING METHOD

PROJECT: 50388E

DETAIL 13a

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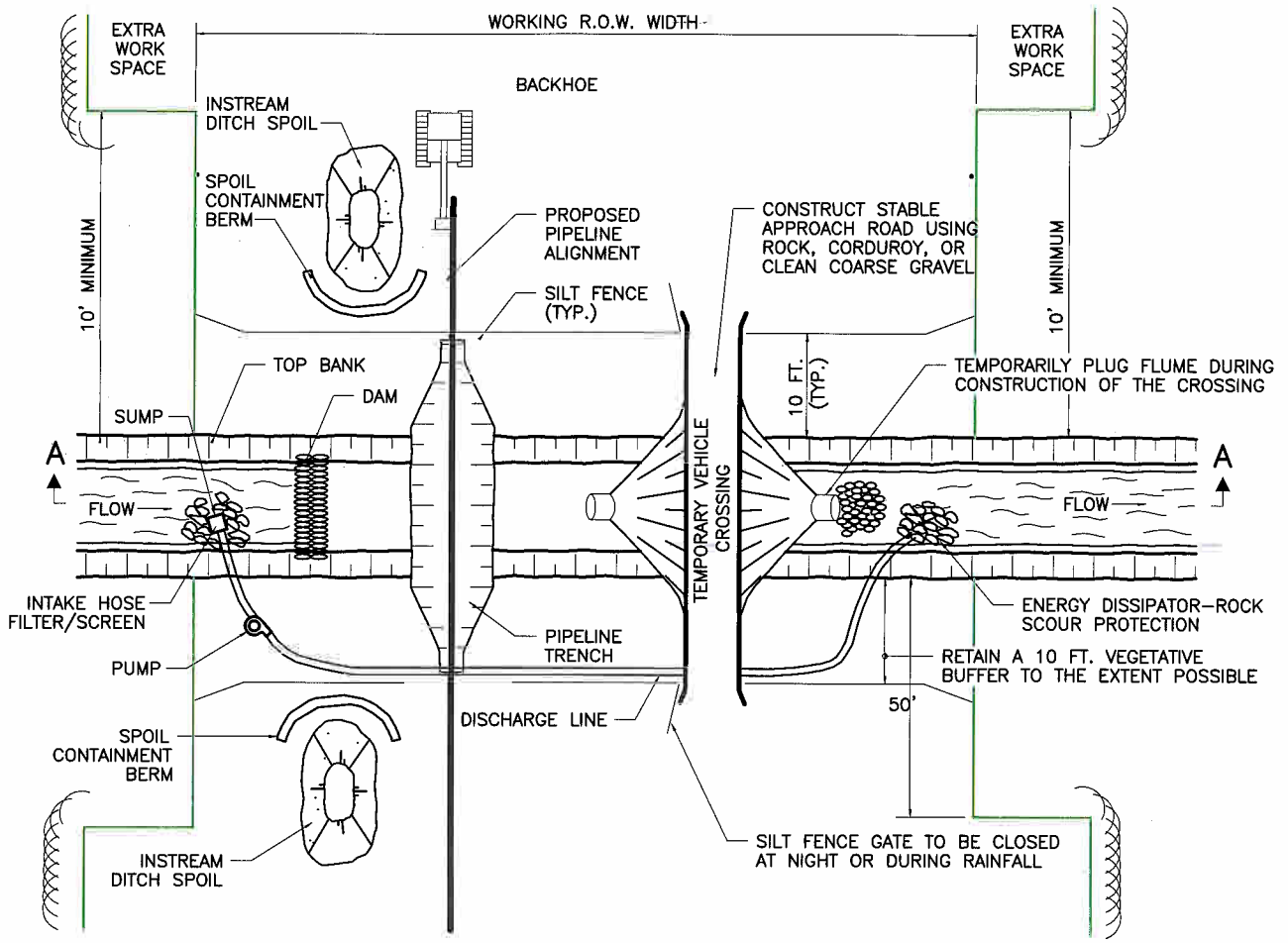
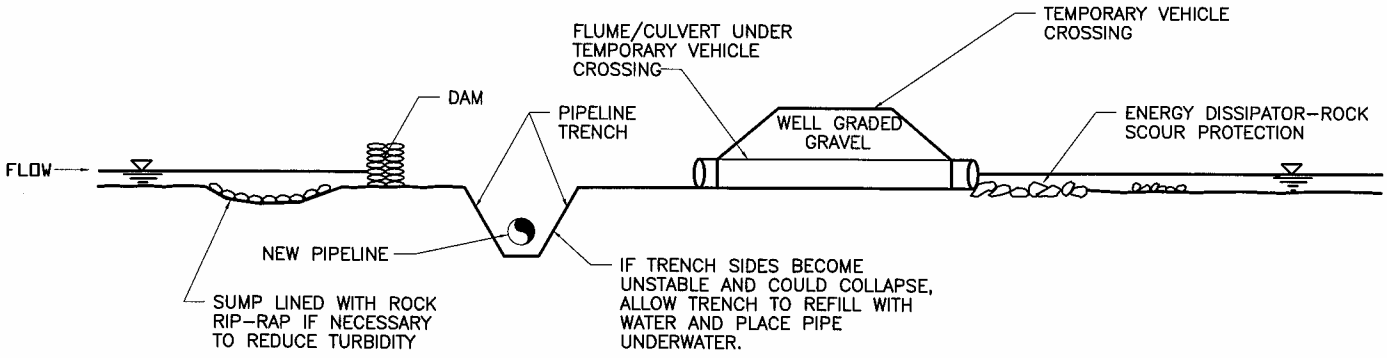


PLAN VIEW



SECTION 'A-A'

NOTES:
1. PIPELINE PLACEMENT WITHIN RIGHT-OF-WAY CONCEPTUAL ONLY.
2. SEE DETAIL 14a FOR CONSTRUCTION PROCEDURE

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TYPICAL DAM AND PUMP CROSSING

PROJECT: 50388E

DETAIL 14

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
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LAST PLOT DATE: Tue, 04 Apr 2006 - 3:26pm

CONSTRUCTION PROCEDURES:

1. WHERE NECESSARY, OBTAIN PRIOR APPROVAL BEFORE USING THE DAM AND PUMP METHOD.
2. IF THERE IS ANY FLOW IN THE WATERCOURSE, INSTALL PUMPS TO MAINTAIN STREAMFLOW AROUND THE BLOCKED OFF SECTIONS OF CHANNEL. THE PUMP IS TO HAVE 1.5 TIMES THE PUMPING CAPACITY OF ANTICIPATED FLOW. A SECOND STANDBY PUMP OF EQUAL CAPACITY IS TO BE READILY AVAILABLE AT ALL TIMES. AN ENERGY DISSIPATOR IS TO BE BUILT TO ACCEPT PUMP DISCHARGE WITHOUT STREAMBED OR STREAMBANK EROSION. IF THE CROSSING IS PROLONGED BEYOND ONE DAY THE OPERATION NEEDS TO BE MONITORED OVERNIGHT.
3. SCHEDULE INSTREAM ACTIVITY FOR LOW FLOW PERIODS IF POSSIBLE
4. MARK OUT AND MAINTAIN LIMITS OF AUTHORIZED WORK AREAS WITH FENCING OR FLAGGING TAPE TO AVOID UNNECESSARY DISTURBANCE OF VEGETATION. ENSURE EQUIPMENT OPERATORS WORKING ON THE CROSSING HAVE BEEN BRIEFED ABOUT THIS PLAN AND THE MEASURES NEEDED TO PROTECT WATER QUALITY. INSTALL PRE-WORK SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE PLAN. ALL NECESSARY EQUIPMENT AND MATERIALS TO BUILD THE DAMS AND TO PUMP WATER MUST BE ON SITE OR READILY AVAILABLE PRIOR TO COMMENCING IN-WATER CONSTRUCTION. PIPE SHOULD BE STRUNG, WELDED AND COATED AND READY FOR INSTALLATION PRIOR TO WATERCOURSE TRENCHING.
5. CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES, AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS STREAM.
   a. NO HEAVILY SILT LADEN WATER SHALL BE DISCHARGED DIRECTLY INTO THE STREAM.
   b. EROSION AND SEDIMENT CONTROL STRUCTURE LOCATIONS AS DEPICTED ARE APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED BY THE COMPANY INSPECTOR TO ACTUAL SITE CONDITIONS.
   c. SILT FENCE OR STRAW BALE INSTALLATIONS SHALL INCLUDE REMOVABLE SECTIONS TO FACILITATE ACCESS DURING CONSTRUCTION. UTILIZE STRAW BALE BARRIERS ONLY IN LIEU OF A SILT FENCE WHERE FREQUENT ACCESS IS REQUIRED.
   d. SEDIMENT LADEN WATER FROM TRENCH DEWATERING SHALL BE DISCHARGED TO A WELL VEGETATED UPLAND AREA, INTO A STRAW BALE DEWATERING STRUCTURE OR GEOTEXTILE FILTER BAG.
   e. SEDIMENT CONTROL STRUCTURES MUST BE IN PLACE AT ALL TIMES ACROSS THE DISTURBED PORTIONS OF THE RIGHT-OF-WAY EXCEPT DURING EXCAVATION/INSTALLATION OF THE CROSSING PIPE.
   f. SOFT DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE RIVER CROSSING UNTIL THE RIVER CROSSING IS INSTALLED AND BACKFILLED.
6. TO THE EXTENT POSSIBLE, MAINTAIN A MINIMUM 10 FEET VEGETATIVE BUFFER STRIP BETWEEN DISTURBED AREAS AND THE WATERCOURSE. INSTALL AND MAINTAIN A SILT FENCE UPSLOPE OF THE BUFFER STRIP ON EACH SIDE OF THE WATERCOURSE. THE SILT FENCE SHOULD INCORPORATE REMOVABLE "GATES" AS REQUIRED TO ALLOW ACCESS WHILE MAINTAINING EASE OF REPLACEMENT FOR OVERNIGHT OR DURING PERIODS OF RAINFALL.
7. CONSTRUCT A TEMPORARY SUMP UPSTREAM OF THE DAM AND LINE WITH ROCKFILL IF A NATURAL POOL DOES NOT EXIST. INSTALL THE PUMP OR PUMP INTAKE IN THE POOL OR SUMP. DISCHARGE WATER ONTO AN ENERGY DISSIPATOR DOWNSTREAM OF THE WORK AREA.
8. EXCAVATED MATERIAL MUST NOT BE STOCKPILED WITHIN 10 FT. OF THE WATERCOURSE. THIS MATERIAL MUST BE CONTAINED WITHIN BERM CONTAINMENT, WITH SECONDARY SILT FENCE PROTECTION TO PREVENT SATURATED SOIL FROM FLOWING BACK INTO THE WATERCOURSE.
9. CHEMICALS, FUELS, LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT REFUELED WITHIN 100 FT. OF THE WATERBODY. PUMPS ARE TO BE REFUELED AS PER THE SPCC PLANS.
10. STAGING AREAS ARE TO BE LOCATED AT LEAST 10 FT. FROM THE WATER'S EDGE (WHERE TOPOGRAPHIC CONDITIONS PERMIT) AND SHALL BE THE MINIMUM SIZE NEEDED.
11. DAMS ARE TO BE MADE OF STEEL PLATE, INFLATABLE PLASTIC DAM, SAND BAGS, COBBLES, WELL GRADED COARSE GRAVEL FILL, OR ROCK FILL. DAMS MAY NEED KEYING INTO THE BANKS AND STREAMBED. ENSURE THAT THE DAM AND VEHICLE CROSSING ARE LOCATED FAR ENOUGH APART TO ALLOW FOR A WIDE EXCAVATION. CAP FLUMES USED UNDER VEHICLE CROSSING DURING DRY CROSSING.
12. DEWATER AREA BETWEEN DAMS IF POSSIBLE. DEWATERING SHOULD OCCUR IN A STABLE VEGETATIVE AREA A MINIMUM OF 50 FT. FROM ANY WATERBODY. THE PUMP DISCHARGE SHOULD BE DISCHARGED ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL SANDBAGS, OR TIMBERS TO PREVENT LOCALIZED EROSION. THE DISCHARGE WATER SHOULD ALSO BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD BY USING STRAW BALES AND THE NATURAL TOPOGRAPHY DISCHARGED WATER SHALL NOT BE ALLOWED TO FLOW INTO ANY WATERCOURSE OR WETLAND. IF IT IS NOT POSSIBLE TO DEWATER THE EXCAVATION DUE TO SOILS WITH A HIGH HYDRAULIC CONDUCTIVITY, THE EXCAVATION AND PIPE PLACEMENT IS TO BE CARRIED OUT IN THE STANDING WATER. PUMP ANY DISPLACED WATER AS DESCRIBED ABOVE TO PREVENT OVERTOPPING OF DAMS.
13. EXCAVATE TRENCH THROUGH PLUGS AND STREAMBED FROM BOTH SIDES, RE-POSITIONING DISCHARGE HOSE AS NECESSARY. LOWER THE PIPE IN THE TRENCH AND BACKFILL IMMEDIATELY. DURING THIS OPERATION WORK IS TO BE COMPLETED AS QUICKLY AS POSSIBLE.
14. CONTRACTOR SHALL RESTORE THE STREAM BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONTOURS, BUT NOT TO EXCEED 2 HORIZONTAL TO 1 VERTICAL.
   a. CONTRACTOR SHALL INSTALL PERMANENT EROSION AND SEDIMENT CONTROL STRUCTURES AS INDICATED ON A SITE SPECIFIC BASIS. IN THE ABSENCE OF SITE SPECIFIC INFORMATION, A FLEXIBLE CHANNEL LINER SUCH AS NAG C125 OR C350 WHICH IS CAPABLE OF WITHSTANDING ANTICIPATED FLOW SHALL BE INSTALLED. ALTERNATIVELY, ROCK RIP-RAP SHALL BE INSTALLED.
   b. ANY MATERIALS PLACED IN THE STREAM TO FACILITATE CONSTRUCTION SHALL BE REMOVED DURING RESTORATION. BANKS SHALL BE STABILIZED AND TEMPORARY SEDIMENT BARRIERS INSTALLED AS SOON AS POSSIBLE AFTER CROSSING, BUT WITHIN 24 HOURS OF COMPLETING THE CROSSING.
   c. MAINTAIN A SILT FENCE OR STRAW BALE BARRIER ALONG THE WATER COURSE UNTIL VEGETATION IS ESTABLISHED IN ADJACENT DISTURBED AREAS.
15. WHEN THE STREAMBED HAS BEEN RESTORED, THE CREEK BANKS ARE TO BE CONTOURED TO A STABLE ANGLE AND PROTECTED WITH EROSION RESISTANT MATERIAL COMPATIBLE WITH FLOW VELOCITY BETWEEN DAMS (E.G., EROSION CONTROL BLANKETS, CRIBBING, ROCK RIP-RAP, ETC.). THE DAMS ARE TO BE REMOVED DOWNSTREAM FIRST. KEEP PUMP RUNNING UNTIL NORMAL FLOW IS RESUMED. COMPLETE BANK TRIMMING AND EROSION PROTECTION. IF SANDBAGS ARE USED FOR THE DAMS, PLACE AND REMOVE BY HAND TO AVOID EQUIPMENT BREAKING BAGS.

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TYPICAL DAM AND PUMP CROSSING

PROJECT: 50388E

DETAIL 14a

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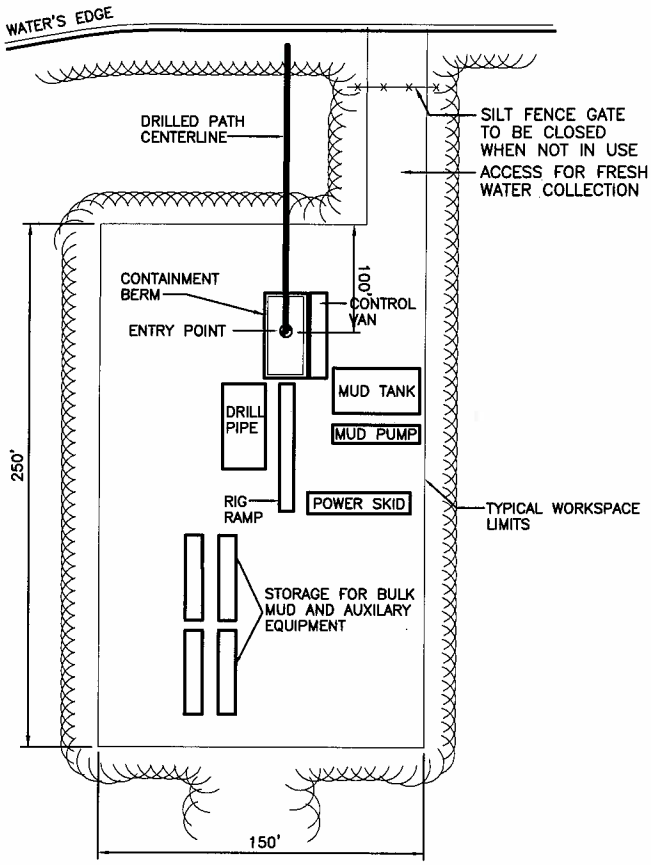
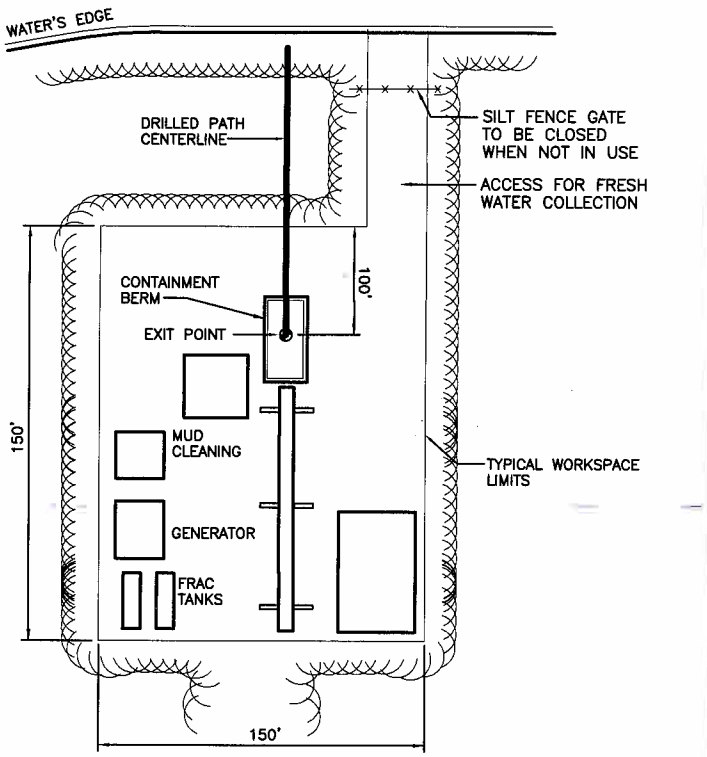
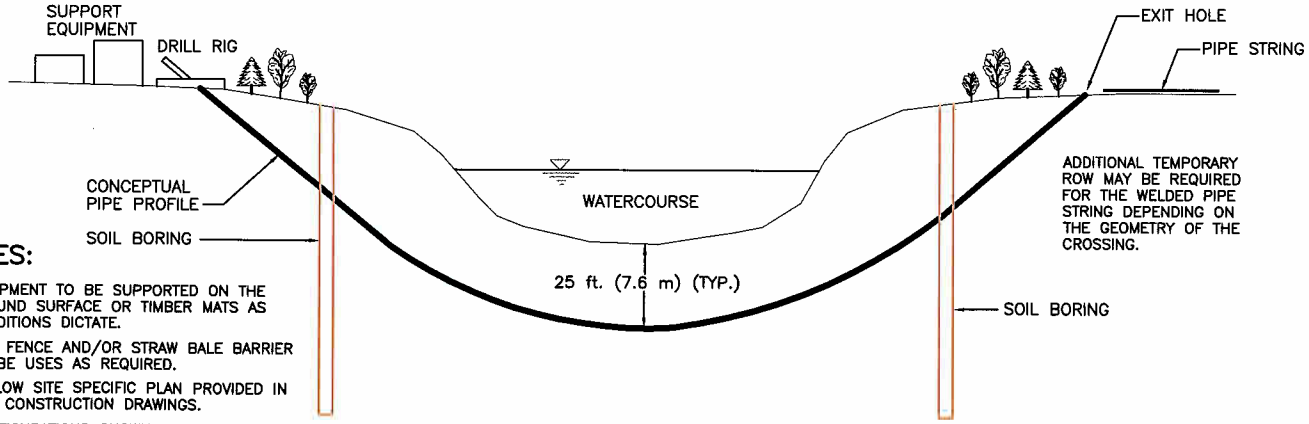
K-00-P-7000-300	ALS	JTG	RG	Tue, 04 Apr 2006 - 3:26pm



SITE PLAN
ENTER SIDE



SITE PLAN
EXIT SIDE



PROFILE

NOTES:

1. EQUIPMENT TO BE SUPPORTED ON THE GROUND SURFACE OR TIMBER MATS AS CONDITIONS DICTATE.
2. SILT FENCE AND/OR STRAW BALE BARRIER TO BE USES AS REQUIRED.
3. FOLLOW SITE SPECIFIC PLAN PROVIDED IN THE CONSTRUCTION DRAWINGS.
4. CONFIGURATIONS SHOWN ARE TYPICAL AND SHALL BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS

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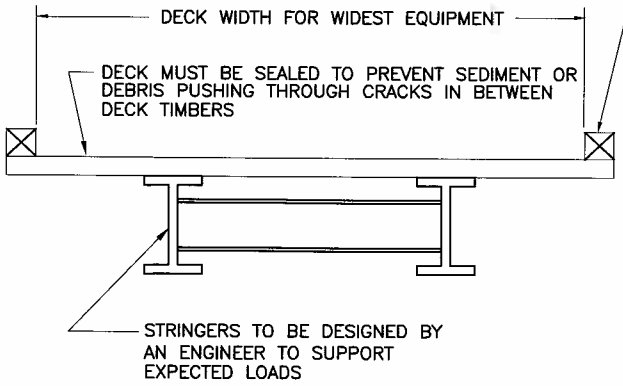
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

TYPICAL HORIZONTAL DRILL (HDD) SITE PLAN & PROFILE

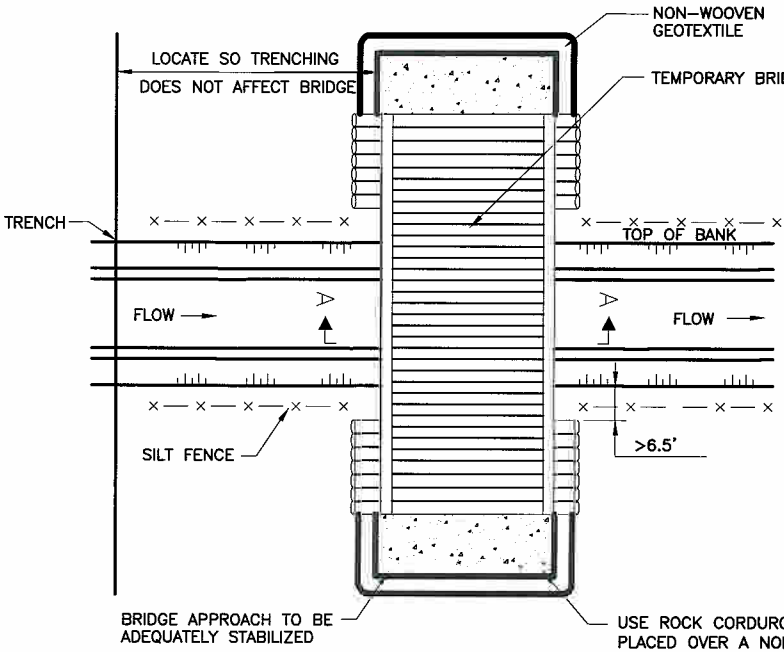
PROJECT: 50388E

DETAIL 15

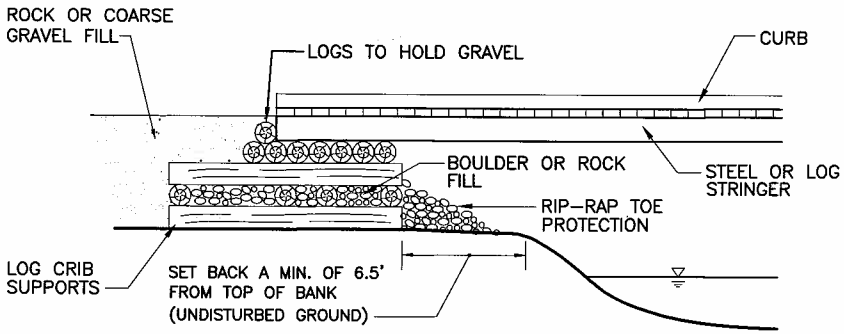
DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY	LAST PLOT DATE
K-00-P-7000-300	ALS	JTG	RG	Tue, 04 Apr 2006 - 3:26pm



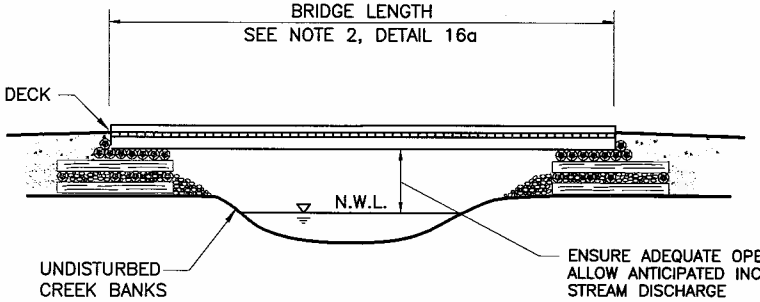
SECTION A–A



PLAN



TYPICAL TEMPORARY CRIB ABUTMENT



BRIDGE PROFILE

NOTES:

1. SEE DETAIL 16a FOR CONSTRUCTION PROCEDURES

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KEYSTONE PIPELINE PROJECT

NO.	REVISION	DATE
1	GENERAL EDITORIAL REVISION	APR.04.2006
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

TYPICAL TEMPORARY BRIDGE CROSSING

PROJECT: 50388E

DETAIL 16

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 – 3:26pm

CONSTRUCTION PROCEDURES:

IN GENERAL TERMS, THE FOLLOWING IS A SEQUENCE OF CONSTRUCTION PROCEDURES THAT ARE RECOMMENDED TO BE FOLLOWED FOR TEMPORARY BRIDGE CROSSINGS:

1. A PORTABLE BRIDGE, FLEXI–FLOAT, OR FLUMED VEHICLE CROSSING MAY BE SUBSTITUTED FOR THE TEMPORARY BRIDGE. IT IS IMPORTANT THAT THE SIZE OF THE TOTAL OPENING BE SELECTED SO THE STRUCTURE CAN SAFELY PASS FLOOD FLOWS THAT CAN REASONABLY BE EXPECTED TO OCCUR DURING THE LIFE OF THE CROSSING.

2. DETERMINE BRIDGE LENGTH REQUIRED AND FOLLOW EITHER METHOD A) OR B) FOR DETERMINING THE OPENING SIZE. IF A) IS FOLLOWED, A MINIMUM 6.5 ft. SETBACK FROM TOP OF BANK MUST BE PRESERVED AS A "NO DISTURBANCE AREA." IF ABUTMENTS OR PIERS IN THE STREAMBED ARE REQUIRED, METHOD B) IS TO BE FOLLOWED.

3. INSTALL THE BRIDGE IN A MANNER THAT WILL MINIMIZE SEDIMENT ENTERING THE WATER. STRINGERS MUST BE DESIGNED TO SUPPORT THE LOADS EXPECTED ON THE BRIDGE. CURBS MUST BE INSTALLED ALONG THE EDGE OF THE DECK TO CONTAIN SEDIMENT AND DEBRIS ON THE BRIDGE. FASTENERS CONNECTING COMPONENTS MUST BE STRONG ENOUGH TO HOLD THEM IN POSITION DURING THE LIFE OF THE BRIDGE. CRIBS ARE TO BE FILLED WITH ROCK OR COBBLE. RIP–RAP EROSION PROTECTION IS TO BE PLACED AROUND THE CRIBS AND ON ANY FILL SLOPES PROJECTING INTO THE WATERBODY.

4. ROAD APPROACHES LEADING TO THE BRIDGE MUST BE RAISED AND STABLE SO EQUIPMENT LOADS ARE SUPPORTED A SUFFICIENT DISTANCE BACK FROM THE WATER TO REDUCE SEDIMENT AND DEBRIS ENTERING THE WATERBODY FROM EQUIPMENT TRACKS. THIS MAY REQUIRE USING MATERIALS SUCH AS GRAVEL, ROCK OR CORDUROY. DO NOT USE SOIL TO CONSTRUCT OR STABILIZE EQUIPMENT BRIDGES. IF CUTS ARE NEEDED TO OBTAIN A SATISFACTORY GRADE, THEY ARE TO BE DUG WITH SIDE DITCHES AND STABLE SLOPES. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED TO KEEP SEDIMENT ON LAND (E.G., SILT FENCING, FILTER CLOTH, RIP–RAP, SEED AND MULCH, ETC.)

5. MAINTAIN A SILT FENCE ON EACH SIDE OF THE WATERBODY EXTENDING A MINIMUM OF 10 ft. BEYOND THE WIDTH OF DISTURBANCE UNTIL VEGETATION HAS BEEN ESTABLISHED IN UPSLOPE AREAS.

6. PERIODICALLY CHECK BRIDGE INSTALLATION AND REMOVE ANY BUILD–UP OF SEDIMENT OR DEBRIS ON THE BRIDGE. DISPOSE OF THIS MATERIAL IN A LOW LYING AREA AT LEAST 100 ft. FROM THE WATERBODY.

7. REMOVE TEMPORARY CROSSINGS AS SOON AS POSSIBLE AFTER FINAL CLEAN–UP. MATERIALS PLACED ALONG THE WATERBODY SHOULD BE COMPLETELY REMOVED DURING FINAL CLEAN–UP. REMOVAL SHOULD NOT NOT OCCUR OUTSIDE THE CONSTRUCTION WINDOWS.
   SURPLUS GRAVEL IS TO BE SPREAD ON THE RIGHT–OF WAY AS GRAVEL SHEETING, IF GRADATION IS SUITABLE, OR MOVED AT LEAST 100 ft. FROM TOP OF BANK FOR DISPOSAL. BRIDGE MATERIALS ARE TO BE REMOVED FROM THE CROSSING AREA. THE WATERBODY BED AND BANKS ARE TO BE RESTORED TO A STABLE ANGLE AND PROTECTED WITH EROSION RESISTANT MATERIAL COMPATIBLE WITH THE EXPECTED FLOW CONDITIONS.

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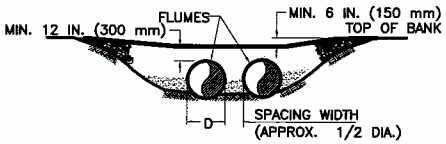
TYPICAL TEMPORARY BRIDGE CROSSING

PROJECT: 50388E

DETAIL 16a

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:27pm



SECTION 'A–A'

CONSTRUCTION PROCEDURES:

THE FOLLOWING IS A SEQUENCE OF CONSTRUCTION AND MITIGATION MEASURES TO BE FOLLOWED AT ALL TEMPORARY FLUME VEHICLE CROSSINGS.

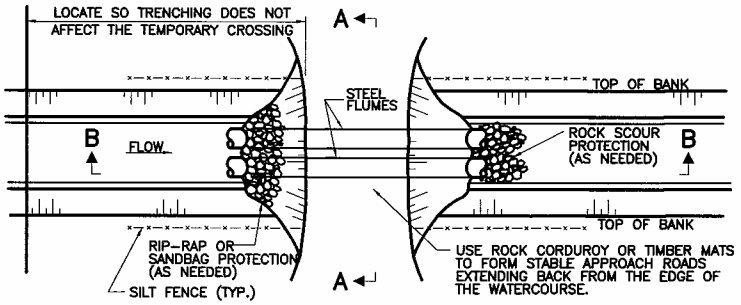
1. A PORTABLE FLEXI–FLOAT, OR TEMPORARY BRIDGE MAY BE SUBSTITUTED FOR THE TEMPORARY FLUME CROSSING.

2. THE LENGTH OF THE FLUME SHALL BE SUFFICIENT TO SPAN THE ENTIRE AREA REQUIRED FOR VEHICULAR ACCESS, EXTENDING 4 FT. BEYOND TOE OF FILL MATERIAL, SO TRENCHING WILL NOT AFFECT THE ROAD CROSSING. A LONGER PIPE IS TO BE USED, IF NEEDED, TO MAINTAIN STABLE SIDE SLOPES. FLUME CAPACITY TO BE BASED ON THE 2–YEAR DESIGN FLOW OR MAXIMUM FLOW ANTICIPATED TO OCCUR DURING INSTALLATION, AS SPECIFIED IN CONSTRUCTION DOCUMENTS.

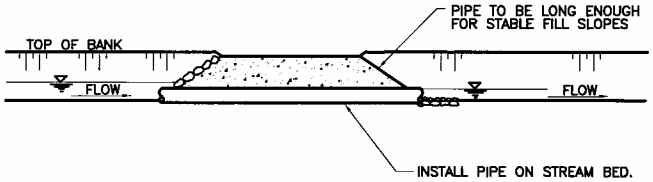
3. WHERE PRACTICAL, BACKFILL AROUND THE PIPES AT THE ROAD WITH CLEAN, COARSE ROCK FILL MATERIAL. IF SCOUR IS POSSIBLE, RIP–RAP IS TO BE PLACED ON THE STREAM BED DOWN–STREAM OF THE PIPE OUTLET EXTENDING A MINIMUM OF TWO PIPE DIAMETERS. ALTERNATIVELY, TIMBER EQUIPMENT MATS, SAND BAGS OR TIMBER CORDUROY MAY BE USED TO FORM THE TRAVEL SURFACE.

4. TO REDUCE MUD ENTERING THE WATER FROM EQUIPMENT TRACKS, THE APPROACH ROAD LEADING TO THE CULVERT CROSSING MUST BE RAISED AND STABLE SO EQUIPMENT LOADS ARE SUPPORTED A SUFFICIENT DISTANCE BACK FROM THE WATER. IF CUTS ARE NEEDED TO OBTAIN A SATISFACTORY GRADE, THEY ARE TO BE DUG WITH SIDE DITCHES AND STABLE SLOPES. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED TO LIMIT THE POTENTIAL FOR SEDIMENT TO ENTER THE WATERBED (E.G., CHECK DAMS, SILT FENCE, RIP–RAP, SEED AND MULCH, SEDIMENT TRAPS, ETC.).

5. PERIODICALLY CHECK THE TEMPORARY CROSSING INSTALLATION AND REMOVE ANY BUILD–UP OF SEDIMENT OR DEBRIS ON THE BRIDGE. DISPOSE OF THIS MATERIAL AT LEAST 100 FT. FROM THE WATERCOURSE AND ABOVE THE HIGH WATER LEVEL.



PLAN VIEW



SECTION 'B–B'

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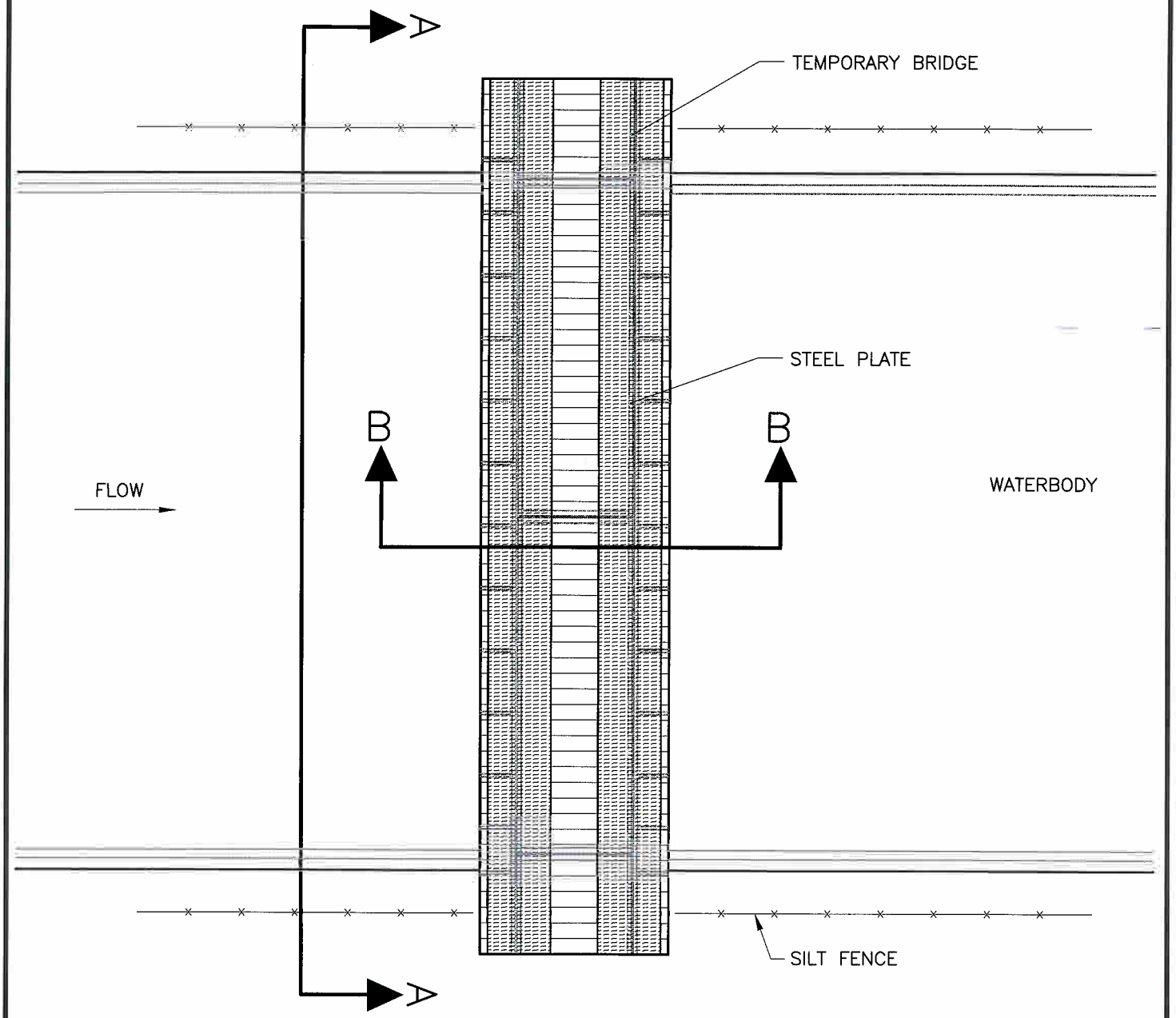
KEYSTONE PIPELINE PROJECT

TYPICAL FLUME BRIDGE CROSSING

PROJECT: 50388E

DETAIL 17

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:27pm



NOTES:

1. SEE DETAIL 18a FOR CONSTRUCTION PROCEDURES

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KEYSTONE PIPELINE PROJECT

TYPICAL RAILCAR BRIDGE CROSSING

NO.	REVISION	DATE
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PROJECT: 50388E

DETAIL 18

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
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LAST PLOT DATE: Tue, 04 Apr 2006 - 3:27pm

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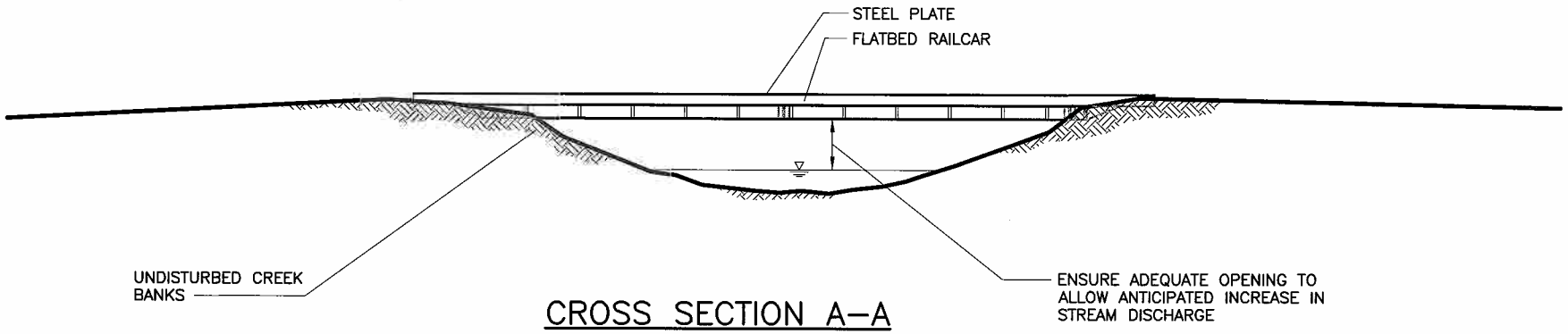
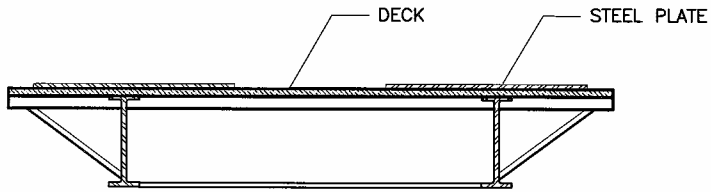


CROSS SECTION A–A

CONSTRUCTION PROCEDURES:

1. THIS TYPICAL DRAWING PROVIDES FOR A RAILCAR BRIDGE EQUIPMENT CROSSING.
2. BRIDGE SHOULD BE A MINIMUM OF 12 FEET LONGER THAN BANK TO BANK WIDTH.
3. BEST MANAGEMENT PRACTICES UTILIZING EROSION CONTROL DEVICES, SUCH AS HAY BALES AND SILT FENCE ARE REQUIRED TO PREVENT SEDIMENTATION OF THE STREAM. EROSION PROTECTION SHALL BE PLACED ON THE STREAM BANKS.
4. DURING FINAL CLEAN–UP, REMOVE TEMPORARY EQUIPMENT CROSSINGS AS SOON AS POSSIBLE. INSTALLED MATERIALS, SUCH AS HAY BALES AND SILT FENCE MUST BE REMOVED AND DISPOSED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AND REQUIREMENTS. THE STREAM BED, BANKS AND AREAS AFFECTED BY CONSTRUCTION OF THE TEMPORARY EQUIPMENT CROSSING SHOULD BE RESTORED TO A STABLE CONDITION. IF REQUIRED TO PREVENT TRANSPORT OF SEDIMENTATION TO THE STREAM, SILT FENCE SHOULD BE INSTALLED AT THE TOP OF THE BANKS.



CROSS SECTION B–B

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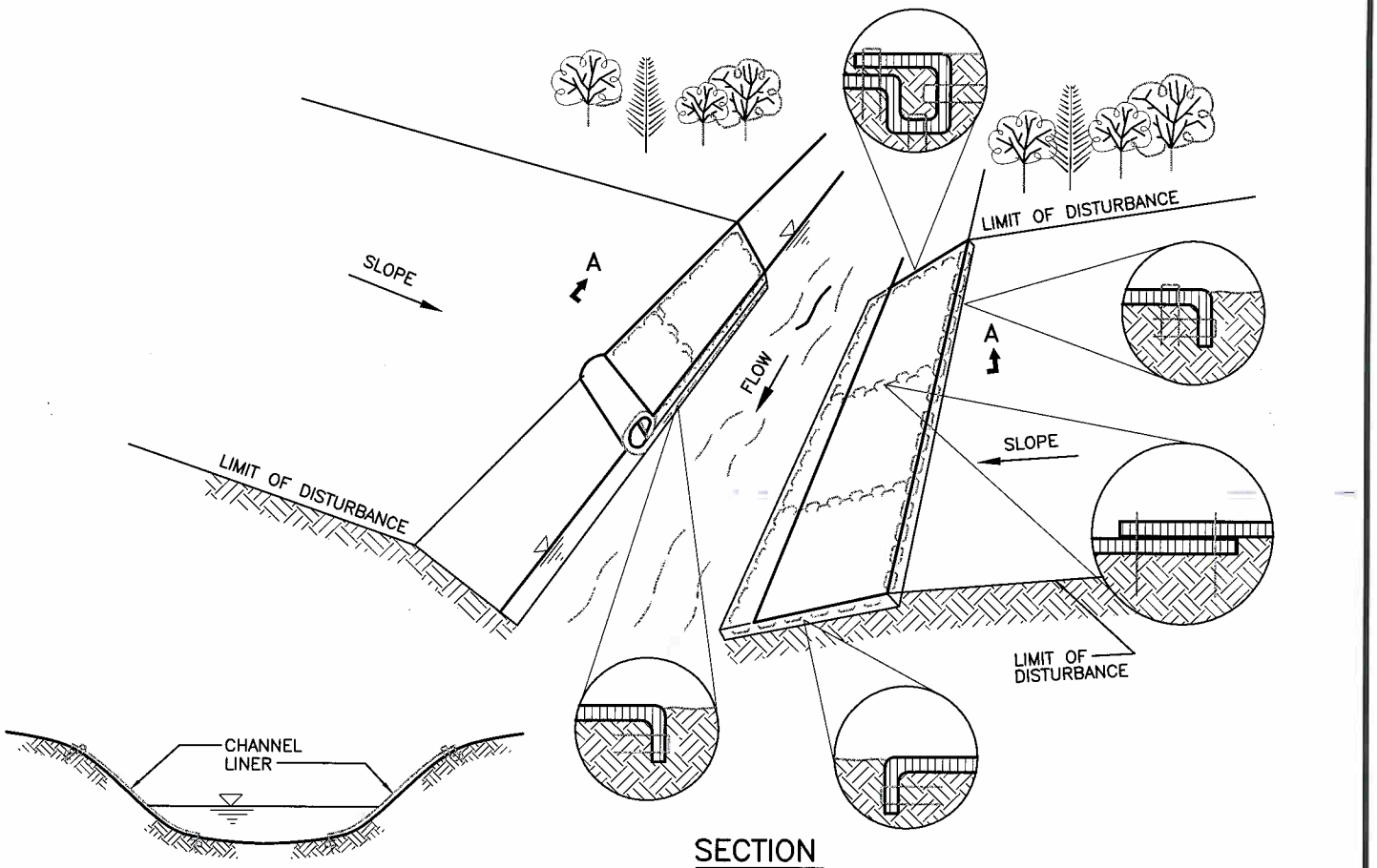
TYPICAL RAILCAR BRIDGE CROSSING

PROJECT: 50388E

DETAIL 18a

LAST PLOT DATE: Tue, 04 Apr 2006 – 3:27pm



SECTION

SECTION A–A

NOTES:

1. INSTALL AND ANCHOR LINERS FOLLOWING MANUFACTURER'S INSTRUCTIONS.
2. PREPARE SOIL BEFORE INSTALLING CHANNEL LINER, INLCUDING THE APPLICATION OF FERTILIZER AND SEED. CHANNEL LINERS SHOULD EXTEND COMPLETELY ACROSS DISTURBED BANK AREAS TO PROTECT ERODIBLE SURFACES.
3. BEGIN AT THE END OF THE CHANNEL BY ANCHORING THE LINER IN A TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
4. ROLL LINER IN DIRECTION OF WATER FLOW.
5. INSTALL LINERS END–OVER–END (SHINGLE STYLE) WITH OVERLAP USEING A DOUBLE ROW OF STAGGERED STAPLES 4 in. (100 mm) APART TO SECURE LINER.
6. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 ft. (9 TO 12 m) INTERVALS. USE A ROW OF STAPLES 4 in. (100 mm) BELOW THE FIRST ROW IN A STAGGERED PATTERN.
7. INSTALL CHANNEL LINER TO THE TOP OF THE DEFINED CHANNEL SECTION. TWO OR MORE ROWS OF BLANKETS MAY BE NECESSARY, THESE LINERS MUST BE OVERLAPPED 4 in. (100 mm) AND STAPLED.
8. THE CHANNEL LINER SHOULD EXTEND TO THE BASE OF THE CHANNEL AND STAPLED. FOR CHANNELS WITH VERY LITTLE OR NO FLOW. EXTEND A MIN. OF 1 ft. (300 mm) BELOW THE LOW WATER LEVEL AND STAPLE IN PLACE.
9. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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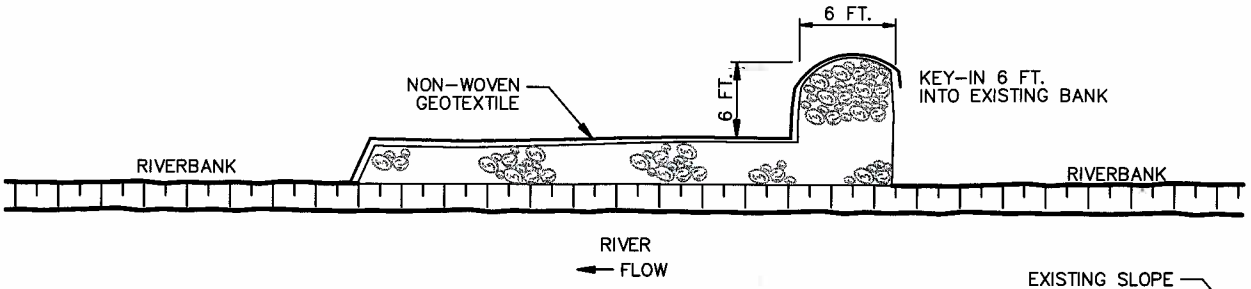
FLEXIBLE CHANNEL LINER INSTALLATION

PROJECT: 50388E

DETAIL 19

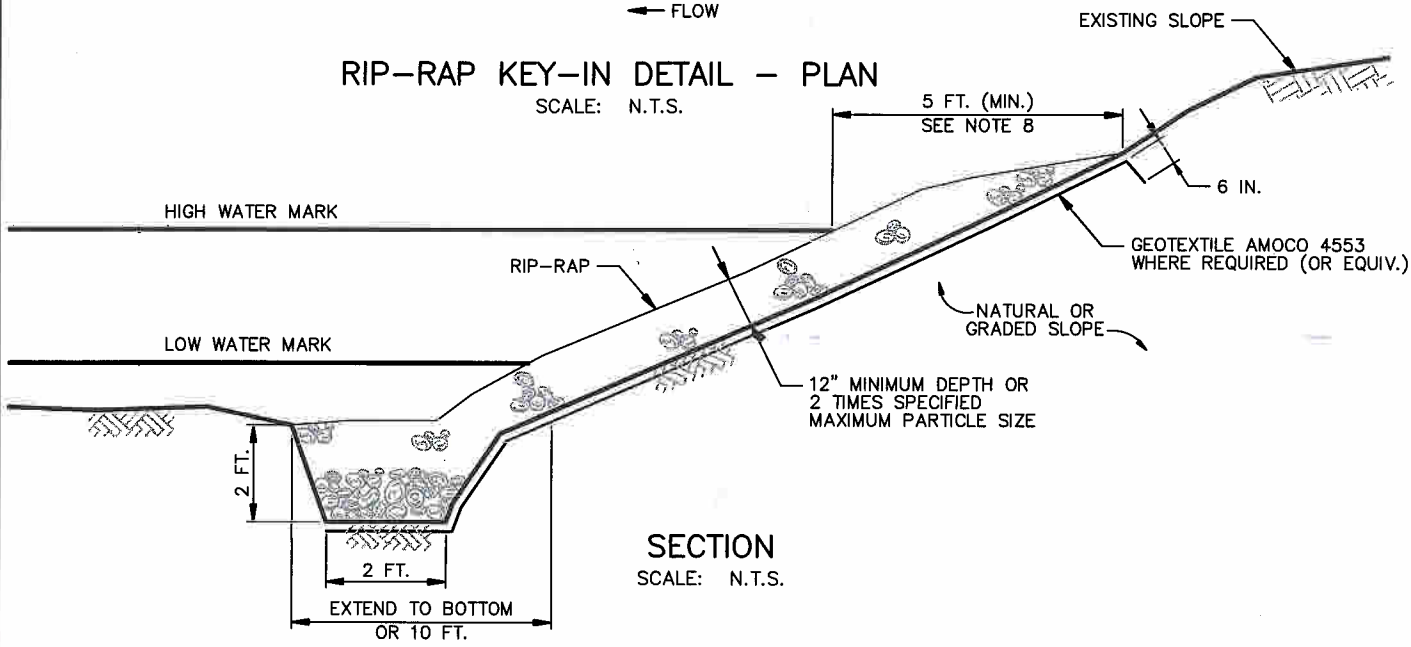
DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 – 3:27pm



RIP-RAP KEY-IN DETAIL - PLAN

SCALE: N.T.S.



SECTION

SCALE: N.T.S.

NOTES:

1. REMOVE ALL STUMPS, ORGANIC MATERIAL, AND PREPARE BANKS TO A STABLE CONFIGURATION TO A MAXIMUM SLOPE OF 2 HORIZONTAL TO 1 VERTICAL.
2. CONSTRUCT TOE TRENCH TO KEY IN BOTTOM OF RIP-RAP PROTECTION.
3. INSTALL FILTER CLOTH (GEOTEXTILE), SUCH AS AMOCO 4553 OR EQUIVALENT, UNDER ROCK WHERE SPECIFIED OR AS DIRECTED BY THE COMPANY. ADJOINING EDGES OF CLOTH SHALL OVERLAP A MINIMUM OF 12"
4. ROCK UTILIZED FOR RIP-RAP SHALL CONSIST OF SOUND, DURABLE ROCK, AND RESISTANT TO WEATHERING. INDIVIDUAL PIECES SHOULD BE ANGULAR, BLOCK SHAPED, AND HAVE A MINIMUM SPECIFIC GRAVITY OF 2.2.
5. INSTALL RIP-RAP TO A THICKNESS OF APPROXIMATELY 2 TIMES THE MAXIMUM EQUIVALENT DIAMETER OF THE RIP-RAP. EACH LOAD SHOULD BE WELL GRADED. A WELL GRADED MIXTURE IS COMPOSED 60% (MINIMUM) OF LARGER SIZES WITH 40% OF SMALLER SIZES TO FILL THE VOIDS.
6. SIZE OF RIP-RAP IS DEPENDENT UPON THE PREDICTED FLOW CONDITIONS.
7. KEY IN THE EDGES OF THE RIP-RAP AND FILTER CLOTH TO NATURAL GROUND CONTOURS SO THAT UNDERMINING DOES NOT OCCUR.
8. RIP-RAP IS TO BE INSTALLED TO 2 FT. ABOVE THE NORMAL HIGH WATER MARK OR 5 FT. ALONG THE SLOPE, WHICHEVER IS LESS.
9. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE TO SUIT ACTUAL SITE CONDITIONS.

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KEYSTONE PIPELINE PROJECT

NO.	REVISION	DATE
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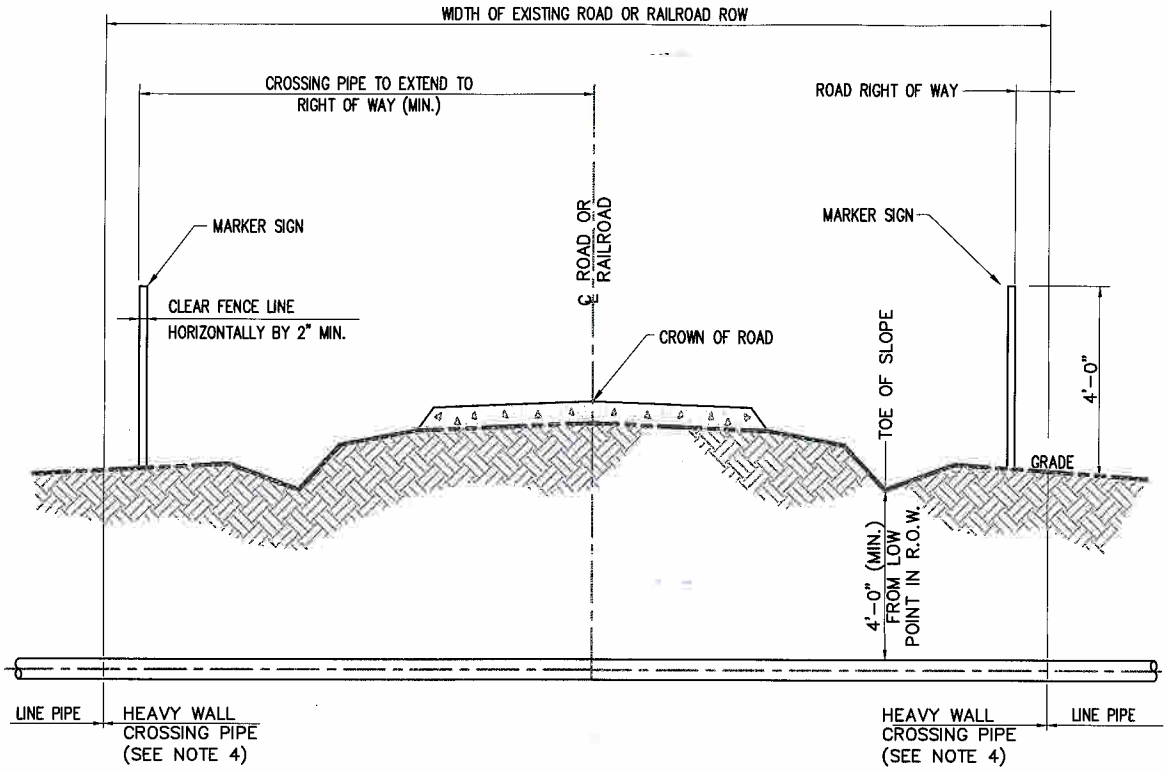
TYPICAL ROCK RIP-RAP

PROJECT: 50388E

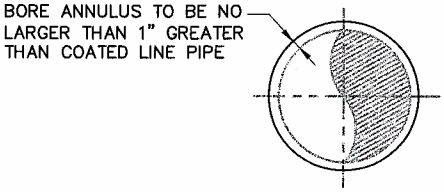
DETAIL 20

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-300	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:27pm



TYPICAL UNCASED ROAD CROSSING BORED



NOTES:

1. CROSSINGS SHALL BE IN ACCORDANCE WITH APPLICABLE PERMIT.
2. ROAD CROSSING PIPE SHALL EXTEND AT MINIMUM TO RIGHT OF WAY LINE UNLESS OTHERWISE SPECIFIED.
3. THE TYPE AND MINIMUM REQUIRED LENGTH OF PIPE FOR CROSSINGS OF ROADS SHALL BE AS SPECIFIED ON ALIGNMENT SHEETS.
4. PIPE FOR BORED CROSSINGS TO INCLUDE ABRASION-RESISTANT (ARB) COATING.
5. PIPELINE MARKER & TEST STATIONS TO BE INSTALLED ON ROW LINE NEXT TO FENCE IF POSSIBLE.
6. THE CROSSING PIPE SHALL BE STRAIGHT WITH NO VERTICAL OR HORIZONTAL BENDS WITHIN ROAD RIGHT OF WAY.

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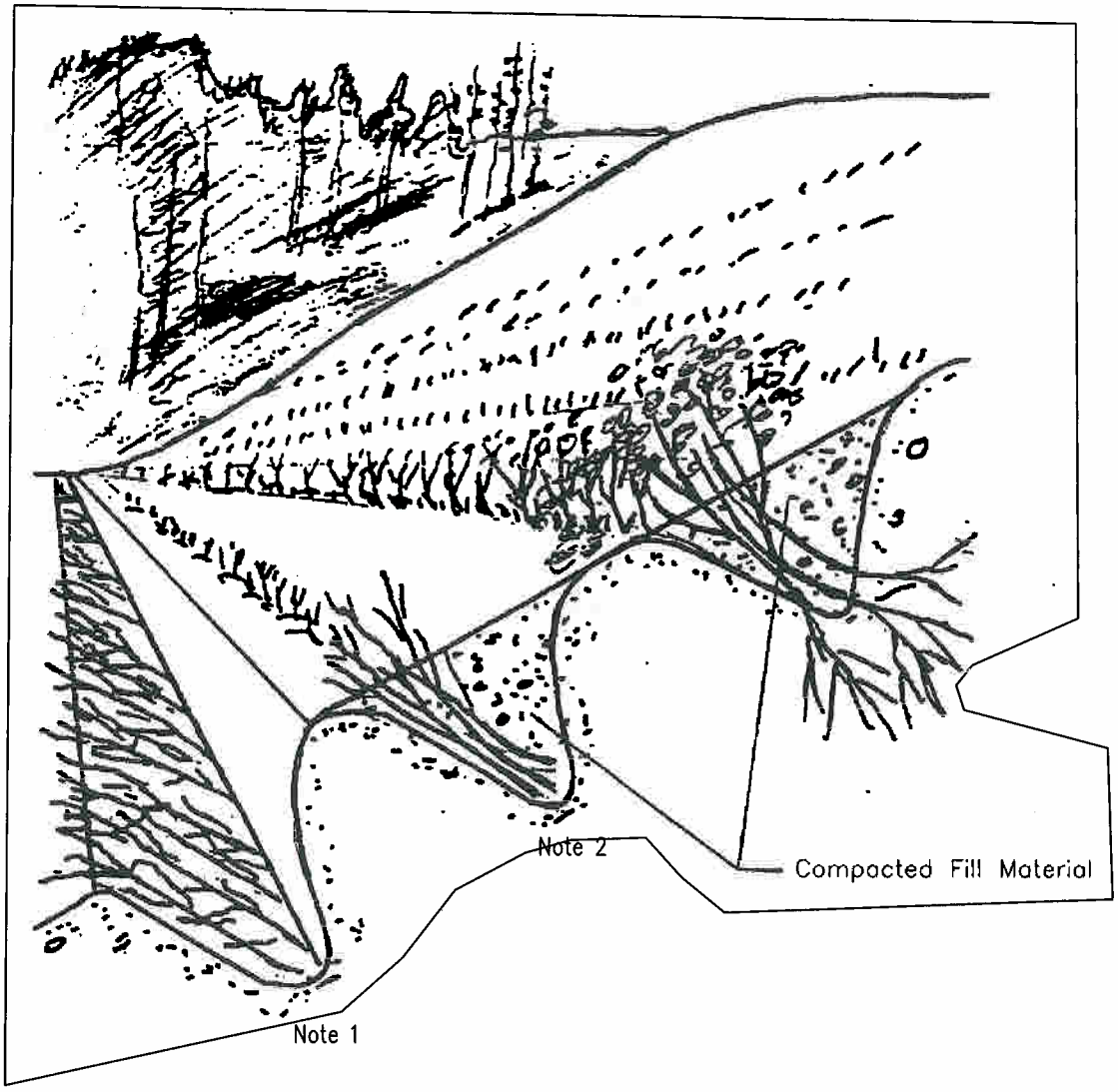
TYPICAL UNCASED ROAD CROSSING BORE DETAIL

PROJECT: 50388E

DETAIL 21

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-301	AH	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 5:01pm



NOTES:

1. CUT TRENCH ACROSS SLOPE. FILL WITH DORMANT WOODY PLANT MATERIAL.
2. FILL IS PLACED ON TOP OF BRANCH LAYER AND COMPACTED.
3. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT SITE CONDITIONS.

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STREAMBANK RECLAMATION-BRUSH LAYER IN CROSS CUT SLOPE

PROJECT: 50388E

DETAIL 22

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-301	NY	GC	LAG

LAST PLOT DATE: Tue, 08 Apr 2008 - 3:31pm

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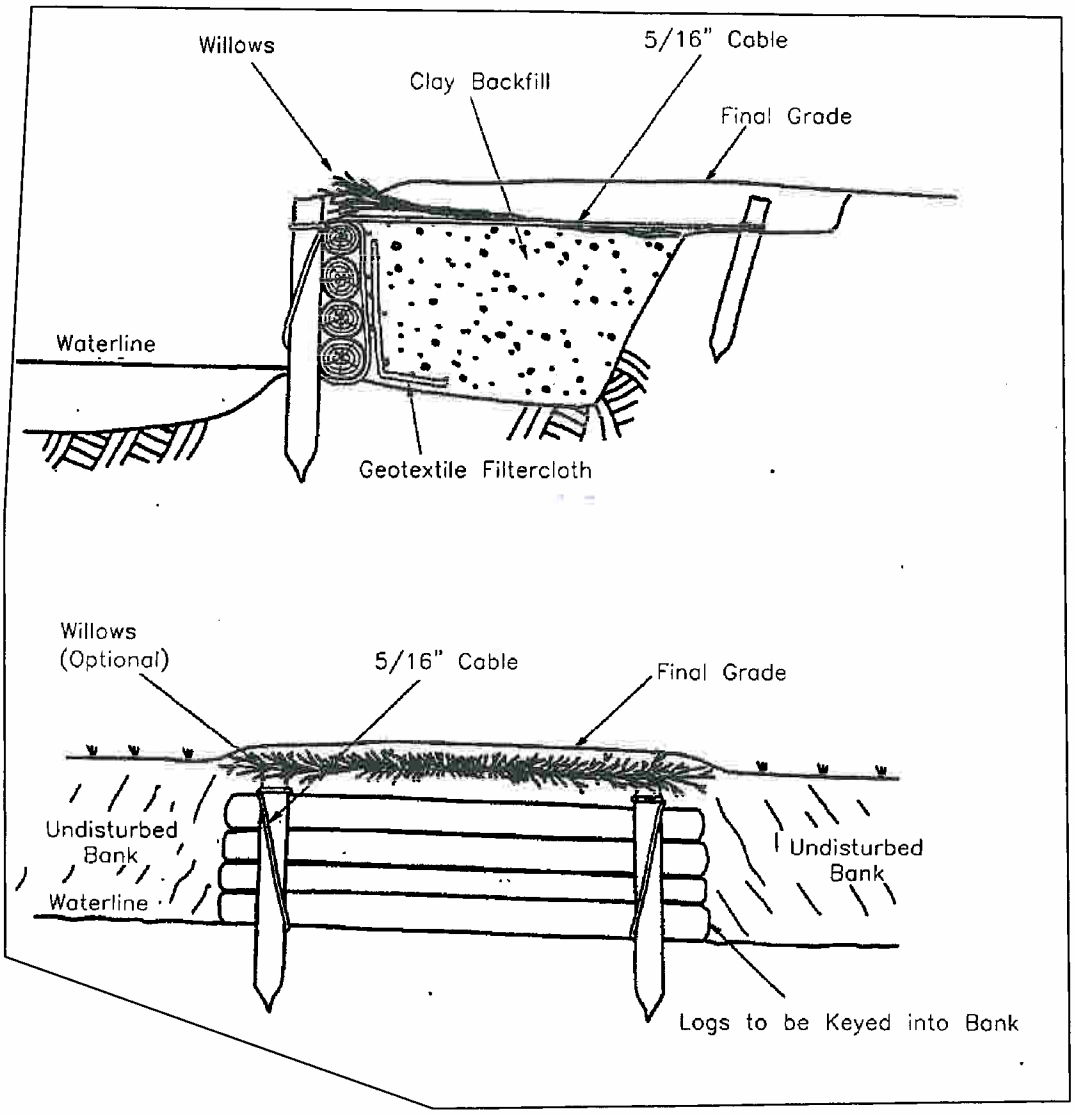

NOTES:

1. LOG WALLS TO BE CONSTRUCTED USING CONIFEROUS MATERIAL.
2. NATURE BACKFILL OR LOOSE GRADE MATERIAL SHOULD BE USED AS FILL MATERIAL.
3. ANCHOR PILINGS OR DEADMAN ANCHORS TO BE USED TO SECURE CABLE IN BANK.
4. NON-WOVEN FILTER CLOTH (NYLEX C34 OR EQUIVALENT) TO BE USED TO LINE LOG WALL.
5. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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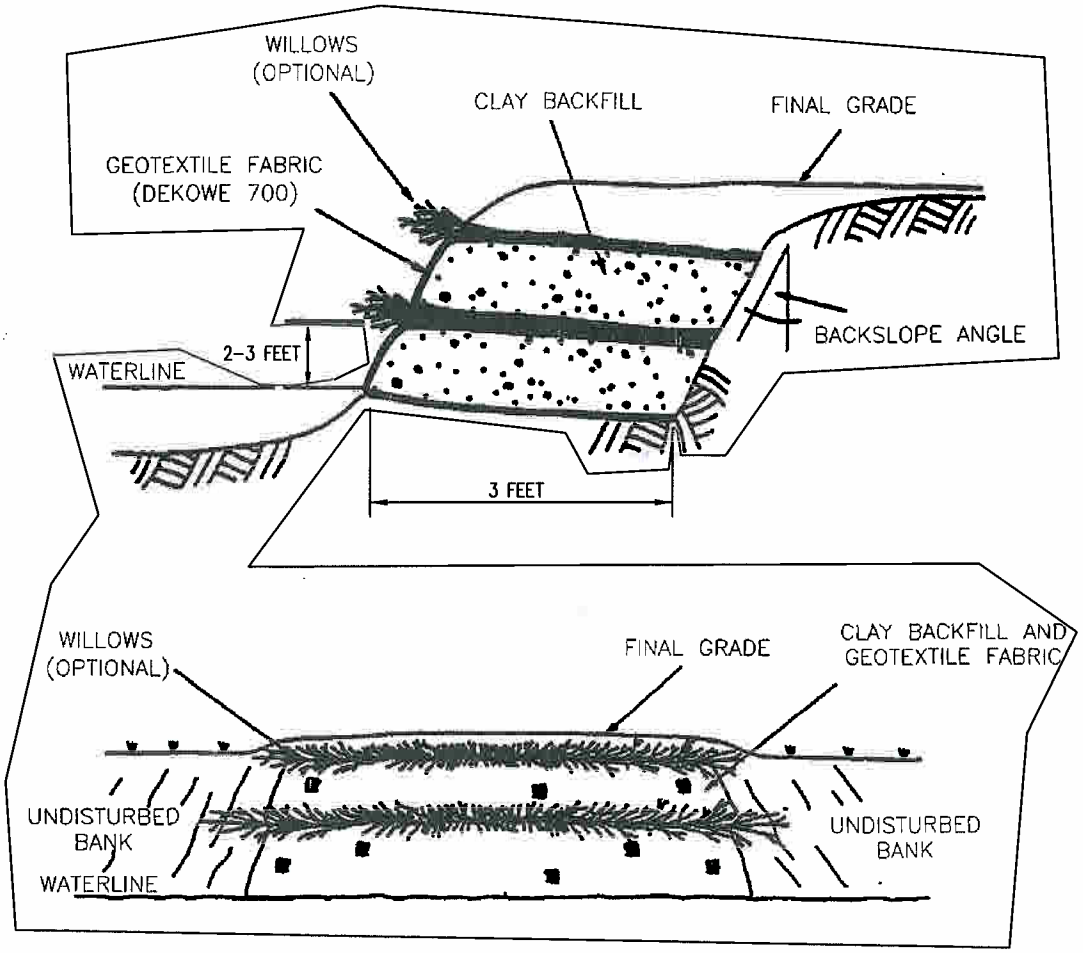
STREAMBANK RECLAMATION-LOGWALL

PROJECT: 50388E

DETAIL 23

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-301	NY	GC	LAG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:33pm



NOTES:

1. NATURE BACKFILL OR LOOSE GRADE MATERIAL SHOULD BE USED TO MINIMIZE AIR SPACES. THIS ALLOWS PROPER SOIL FABRIC CONTACT, WHICH MINIMIZES STEELING AND SCOURING DURING RUNOFF AND ENSURES SURVIVAL OF THE WILLOW CUTTINGS.
2. PLYWOOD FORMS (8X2 FEET) MAY BE REQUIRED TO HELP RECONSTRUCT STEEP OR VERTICAL BANKS.
3. GRID LAYERS SHOULD NOT EXCEED 3 FEET IN HEIGHT WITH A MINIMUM OF 3 FEET SET IN BANK.
4. WILLOWS SHOULD BE HARVESTED AS CLOSE TO INSTALLATION AS POSSIBLE, PREFERABLY THE PREVIOUS DAY BUT NO MORE THAN 2 DAYS EARLY.
5. WILLOWS SHOULD BE 0.5 TO 1 INCH IN DIAMETER AND 2 TO 3 FEET LONG WITH NO MORE THAN 10 INCHES LEFT EXPOSED.
6. PLANTING RATE SHOULD BE APPROXIMATELY 1 STEM PER 6 INCHES.
7. INSTALLATION TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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KEYSTONE PIPELINE PROJECT

STREAMBANK RECLAMATION-VEGETATED GEOTEXTILE INSTALLATION

NO.	REVISION	DATE
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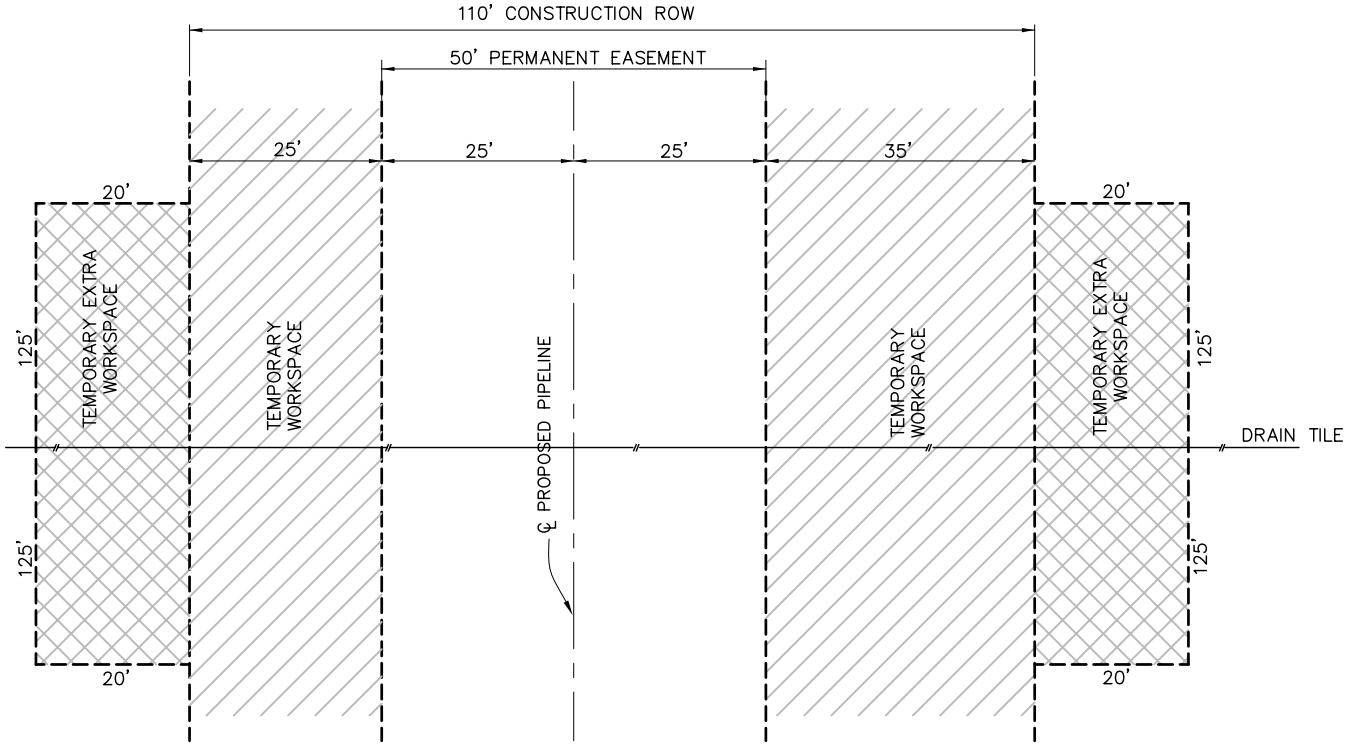
PROJECT: 50388E

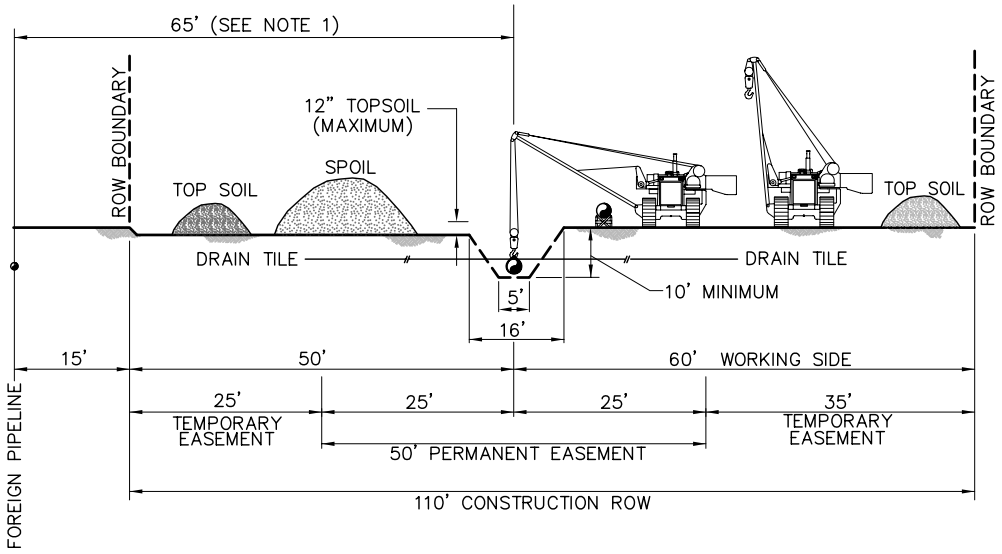
DETAIL 24

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-301	NY	GC	LAG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:34pm



PLAN



ELEVATION

N.T.S.

NOTES:

1. THE OFFSET FROM A FOREIGN PIPELINE, WHERE APPLICABLE, WILL BE 40' FOR MOST LOCATION. BUT MAY BE INCREASED OR DECREASED DEPENDING ON THE SITE SPECIFIC CONSTRUCTION REQUIREMENTS.
2. THE MINIMUM CLEARANCE BETWEEN THE TOP OF PIPE AND THE BOTTOM OF DRAIN TILE WILL BE 12 INCHES.
3. INSTALLATION SPECIFICATIONS TO BE MODIFIED BY KEYSTONE AS NECESSARY TO SUIT ACTUAL SITE CONDITIONS.

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KEYSTONE PIPELINE PROJECT

TYPICAL ROW LAYOUT/SOIL HANDLING 110' CONST. R.O.W. 50' ESMT. DRAIN TILE CROSSING

NO.	REVISION	DATE
1	GENERAL EDITORIAL REVISION	APR.04.2006
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

PROJECT: 50388E

DETAIL 25

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-305	ALS	BLS	RG

LAST PLOT DATE: Wed, 05 Apr 2006 - 3:38pm

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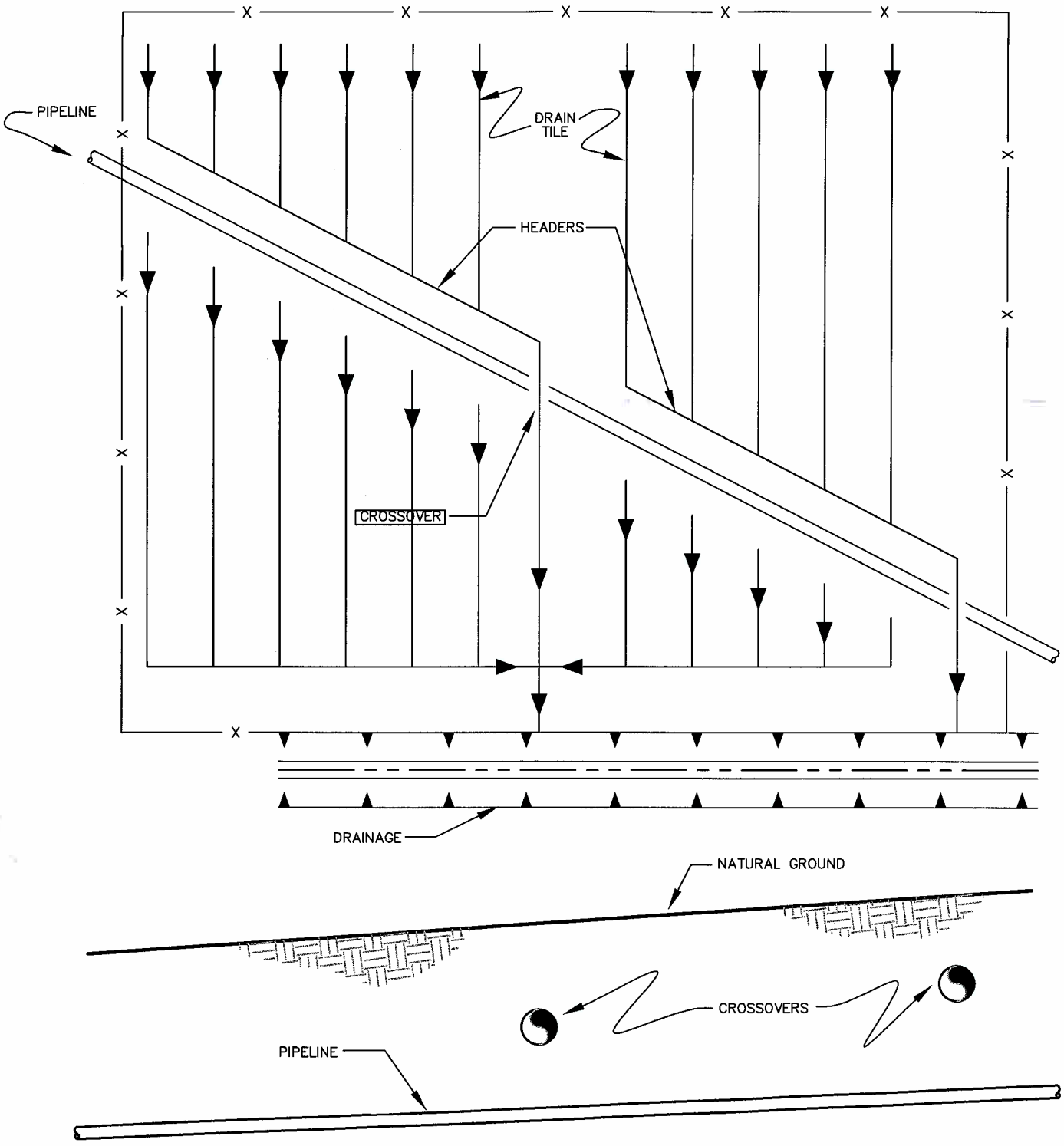
HEADER / MAIN CROSSOVERS OF PIPELINE



PROFILE

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NO.	REVISION	DATE
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2008

HEADER / MAIN CROSSOVERS OF PIPELINE

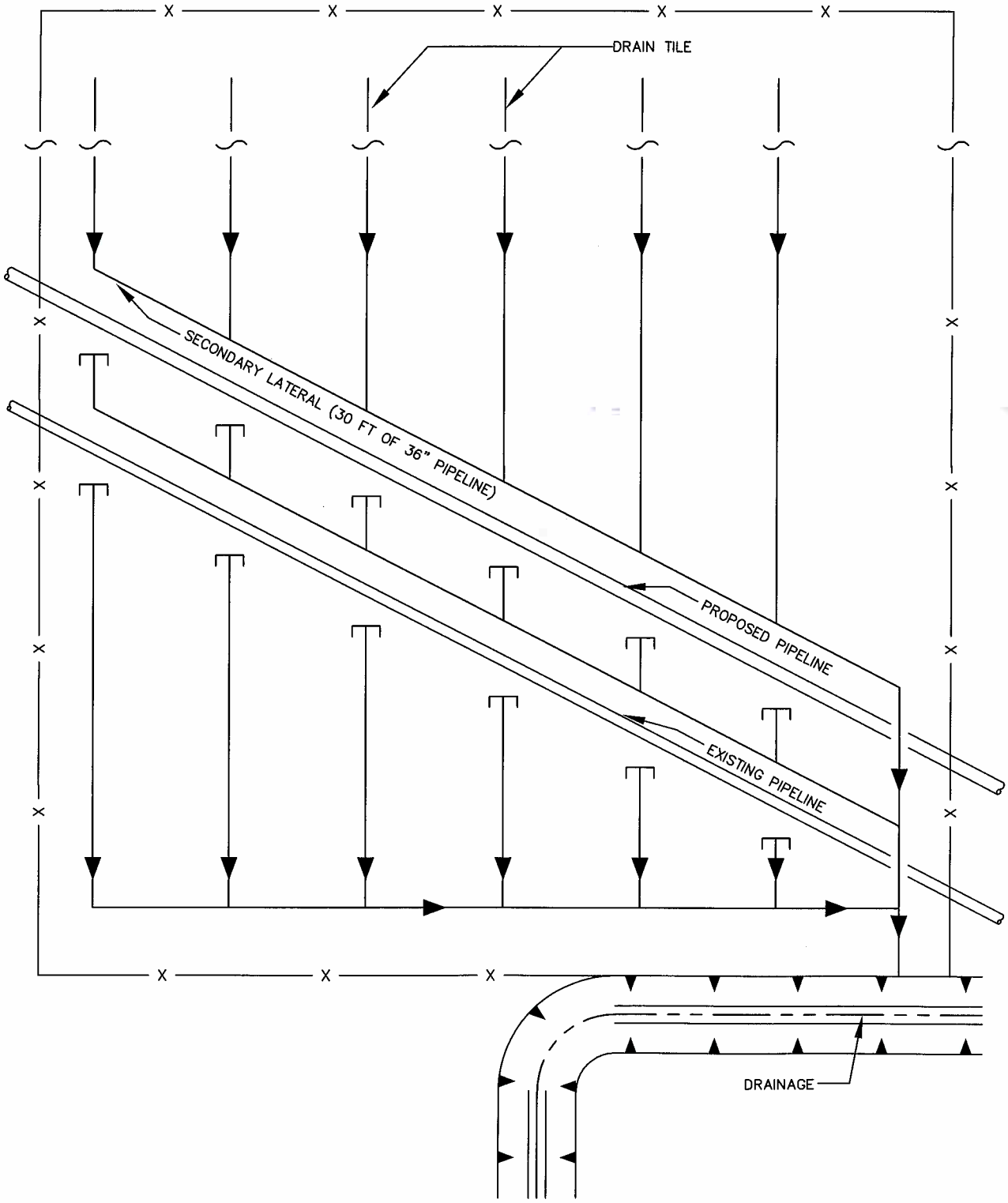
PROJECT: 50388E

DETAIL 26

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-304	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:43pm

RELOCATE / REPLACE DRAINAGE HEADER / MAIN



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NO.	REVISION	DATE
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

HEADER / MAIN CROSSOVERS OF PIPELINE

PROJECT: 50388E

DETAIL 27

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-304	ALS	JTG	RG

LAST PLOT DATE: Tue, 04 Apr 2006 - 3:46pm

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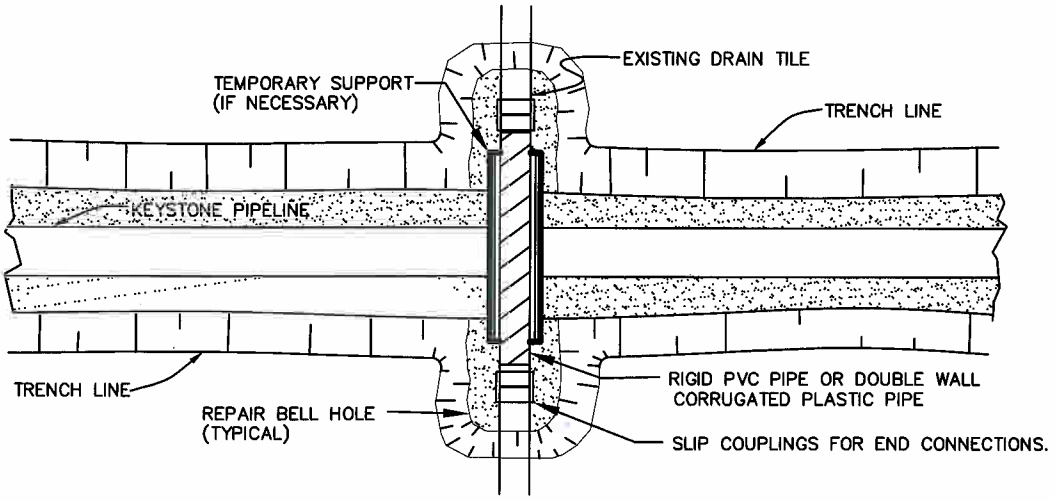

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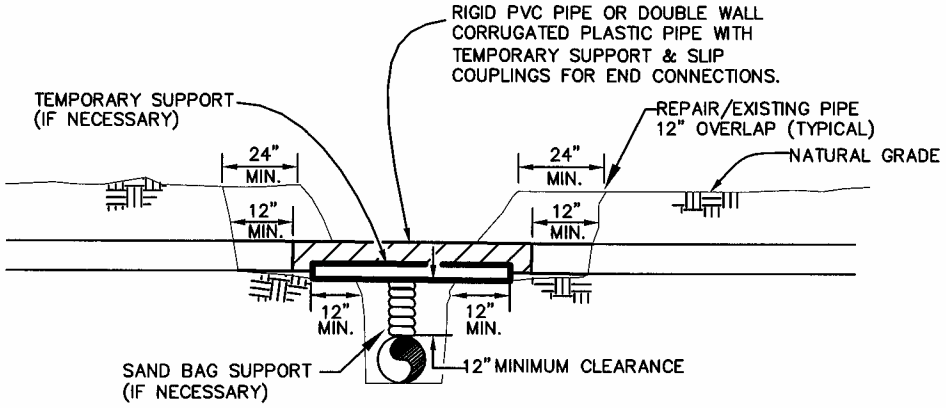

CROSS SECTION

NOTES:

1. IMMEDIATELY REPAIR TILE IF WATER IS FLOWING THROUGH TILE AT TIME OF TRENCHING.
2. SCREEN ALL EXPOSED ENDS OF TILE LINES.

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KEYSTONE PIPELINE PROJECT

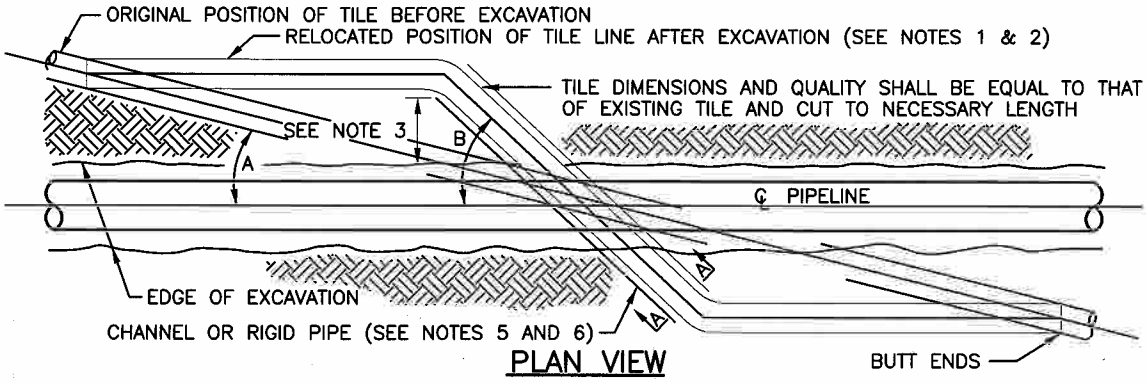
DRAINAGE AND IRRIGATION
TEMPORARY DRAIN TILE
REPAIR

NO.	REVISION	DATE
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

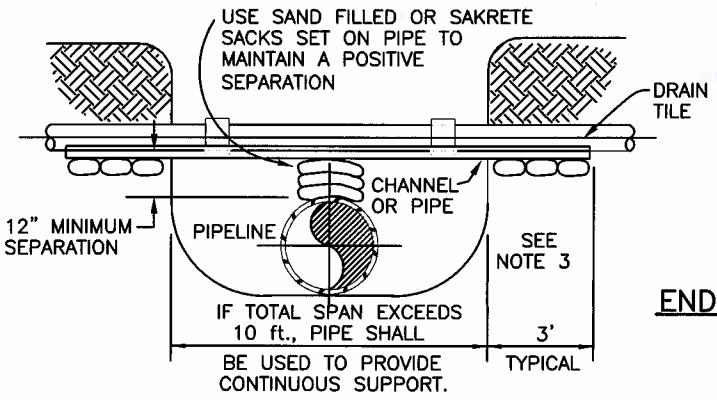
PROJECT: 50388E

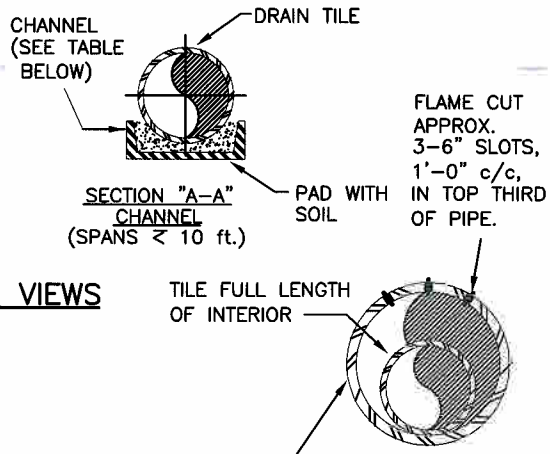
DETAIL 28

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY	LAST PLOT DATE
K-00-P-7000-301	NY	GC	LAG	Tue, 04 Apr 2006 - 3:48pm



PLAN VIEW





END VIEWS

NOTES

1. TILE REPAIR SHALL MAINTAIN ORIGINAL ALIGNMENT AND GRADIENT WHEN ANGLE "A", BETWEEN PIPELINE AND ORIGINAL TILE, IS MORE THAN 20° UNLESS OTHERWISE DIRECTED BY KEYSTONE REPRESENTATIVE.
2. WHEN ANGLE A IS LESS THAN 20°, UNLESS OTHERWISE DIRECTED BY COMPANY, ANGLE "B" SHALL BE 45° FOR USUAL WIDTHS OF TRENCH. FOR EXTRA WIDTHS IT MAY BE GREATER AS DIRECTED BY KEYSTONE REPRESENTATIVE.
3. 3'–0" MINIMUM LENGTH OF CHANNEL OR RIGID PIPE SHALL BE SUPPORTED BY UNDISTURBED SOIL, OR IF CROSSING IS NOT AT RIGHT ANGLES TO GAS PIPELINE, EQUIVALENT LENGTH PERPENDICULAR TO TRENCH. SHIM WITH SAKRETE, SAND BAGS OR CONCRETE BLOCKS TO UNDISTURBED SOIL FOR SUPPORT AND DRAINAGE GRADIENT MAINTENANCE (TYPICAL BOTH SIDES).
4. DRAINAGE TILE SHALL BE REPLACED SO THAT ITS FORMER GRADIENT AND ALIGNMENT ARE RESTORED.
5. DIAMETER OF RIGID PIPE SHALL BE OF ADEQUATE SIZE TO ALLOW FOR THE INSTALLATION OF THE TILE FOR THE FULL LENGTH OF THE RIGID PIPE.
6. OTHER METHODS OF SUPPORTING DRAIN TILE MAY BE USED IF THE ALTERNATE PROPOSED IS EQUIVALENT IN STRENGTH TO THE CHANNEL/PIPE SECTIONS SHOWN AND IF APPROVED BY THE KEYSTONE REPRESENTATIVE IN ADVANCE. SITE SPECIFIC ALTERNATE SUPPORT SYSTEM TO BE DEVELOPED BY KEYSTONE REPRESENTATIVE AND FURNISHED TO CONTRACTOR FOR SPANS IN EXCESS OF 20 FEET, TILE GREATER THAN 10" DIAMETER, AND FOR "HEADER" SYSTEMS.
7. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.
8. PRIOR TO REPAIRING TILE, CONTRACTOR SHALL PROBE INTO THE EXISTING TILE TO THE FULL WIDTH OF THE RIGHT OF WAY TO DETERMINE IF ADDITIONAL DAMAGE HAS OCCURRED. ALL DAMAGED/DISTURBED TILE SHALL BE REPAIRED AS NEAR AS PRACTICABLE TO ITS ORIGINAL OR BETTER CONDITION.
9. "NIGHT CAP" OPEN ENDS OF PIPE AND/OR DRAIN TILES IF REPAIRS ARE NOT COMPLETED BY END OF WORK DAY.

MINIMUM SUPPORT TABLE			
TILE SIZE	CHANNEL SIZE	PIPE SIZE	
3"	4" ● 5.4 #/ft.	4"	STD. WT
4"–5"	5" ● 6.7 #/ft.	6"	STD. WT
6"–9"	7" ● 9.8 #/ft.	8"–10"	STD. WT
10"	10" ● 15.3 #/ft.	12"	STD. WT

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KEYSTONE PIPELINE PROJECT

NO.	REVISION	DATE
0	ISSUED FOR DEPARTMENT OF STATE FILING	MAR.10.2006

DRAINAGE AND IRRIGATION PERMANENT DRAIN TILE REPAIR

PROJECT: 50388E

DETAIL 29

DRAWING NUMBER	DRAWN BY	CHECKED BY	APPROVED BY
K-00-P-7000-301	NY	GC	LAG

LAST PLOT DATE: Tue, 04 Apr 2006 – 3:50pm

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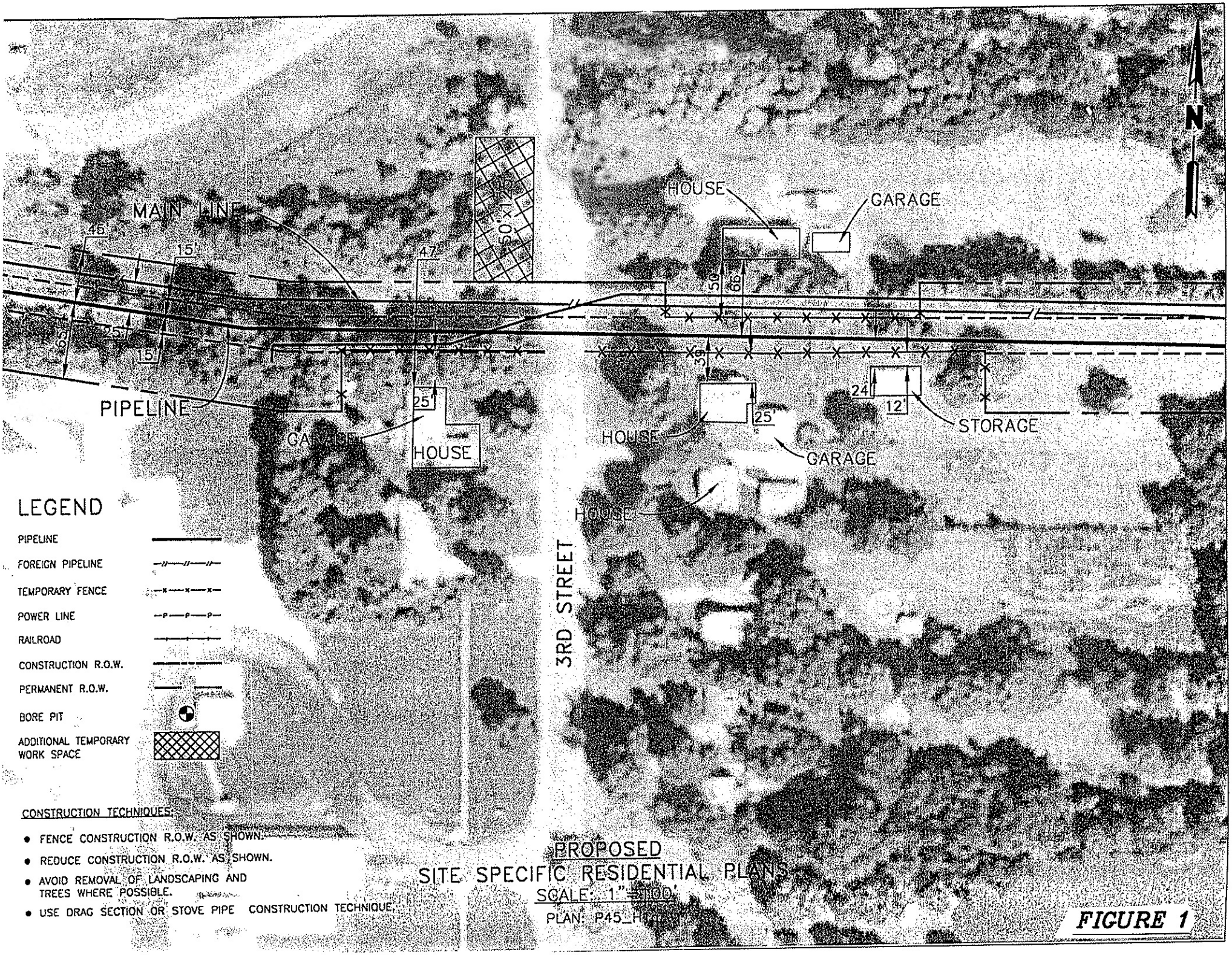
MAIN LINE
45'
15'
47'
50' x 50'
HOUSE
GARAGE
50'
66'
65'
25'
15'
39'
24'
12'
PIPELINE
25'
GARAGE
HOUSE
HOUSE
25'
GARAGE
STORAGE
HOUSE
3RD STREET
N
LEGEND
PIPELINE
FOREIGN PIPELINE
TEMPORARY FENCE
POWER LINE
RAILROAD
CONSTRUCTION R.O.W.
PERMANENT R.O.W.
BORE PIT
ADDITIONAL TEMPORARY WORK SPACE
CONSTRUCTION TECHNIQUES:
• FENCE CONSTRUCTION R.O.W. AS SHOWN.
• REDUCE CONSTRUCTION R.O.W. AS SHOWN.
• AVOID REMOVAL OF LANDSCAPING AND TREES WHERE POSSIBLE.
• USE DRAG SECTION OR STOVE PIPE CONSTRUCTION TECHNIQUE.
PROPOSED
SITE SPECIFIC RESIDENTIAL PLANS
SCALE: 1" = 100'
PLAN: P45_H

FIGURE 1

STANDARD MITIGATIVE MEASURES

FOR CONSTRUCTION, OPERATION, AND MAINTENANCE

OF WESTERN FACILITIES

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WESTERN AREA POWER ADMINISTRATION
STANDARD MITIGATIVE PRACTICES

Mitigation Measures:

1. The contractor shall limit the movement of its crews and equipment to the right-of-way (ROW), including access routes. The contractor shall limit movement on the ROW so as to minimize damage to grazing land, crops, or property, and shall avoid marring the land.

2. When weather and ground conditions permit, the contractor shall obliterate all contractor-caused deep ruts that are hazardous to farming operations and to movement of equipment. Such ruts shall be leveled, filled, and graded, or otherwise eliminated in an approved manner. In hay meadows, alfalfa fields, pastures, and cultivated productive lands, ruts, scars, and compacted soils shall have the soil loosened and leveled by scarifying, harrowing, discing, or other approved methods. Damage to ditches, tile drains, terraces, roads, and other features of the land shall be corrected. Before final acceptance of the work in these agricultural areas, all ruts shall be obliterated, and all trails and areas that are hard-packed as a result of contractor operations shall be loosened, leveled, and reseeded. The land and facilities shall be restored as nearly as practicable to their original conditions.

3. Water bars or small terraces shall be constructed across all ROW and access roads on hillsides to prevent water erosion and to facilitate natural revegetation.

4. The contractor shall comply with all Federal, State, and local environmental laws, orders, and regulations. Prior to construction, all supervisory construction personnel and heavy equipment operators will be instructed on the protection of cultural and ecological resources.

5. The contractor shall exercise care to preserve the natural landscape and shall conduct its construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Except where clearing

is required for permanent works, approved construction roads, or excavation operations, all trees, native shrubbery, and vegetation shall be preserved and shall be protected from damage by the contractor's construction operations and equipment. The edges of clearings and cuts through tree, shrubbery, or other vegetation shall be irregularly shaped to soften the undesirable visual impact of straight lines. Where such clearing occurs in the Lake Mead National Recreation Area, the contractor shall consult with the on-site Park Representative.

6. On completion of the work, all work areas except access roads shall be scarified or left in a condition which will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All destruction, scarring, damage, or defacing of the landscape resulting from the contractor's operations shall be repaired by the contractor.

7. Construction staging areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent. On abandonment, all storage and construction buildings, including concrete footings and slabs, and all construction materials and debris shall be removed from the site. The area shall be regraded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion.

8. Borrow pits shall be excavated so that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent undisturbed terrain into the pit or borrow area giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.

9. Construction activities shall be performed by methods that will prevent entrance, or accidental spillage, of solid matter contaminants, debris, any other objectionable pollutants and wastes into streams, flowing or dry watercourses, lakes, and underground water sources. Such pollutants and waste include, but are not restricted to refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil

and other petroleum products, aggregate processing tailing, mineral salts, and thermal pollution.

10. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or watercourses, shall be conducted in a manner to prevent muddy water and eroded materials from entering the streams or watercourses by construction of intercepting ditches, bypass channels, barriers, settling ponds, or by other approved means.

11. Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other watercourse perimeters where they can be wasted away by high water or storm runoff or can in any way encroach upon the actual watercourse itself.

12. Waste waters from concrete batching, or other construction operations shall not enter streams, watercourses, or other surface waters without the use of such turbidity control methods as settling ponds, gravel-filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free of settleable material. For the purpose of these specifications, settleable material as defined as that material which will settle from the water by gravity during a 1-hour quiescent detention period.

13. The contractor shall utilize such practicable methods and devices as are reasonably available to control, present, and otherwise minimize atmospheric emissions or discharges of air contaminants.

14. The emission of dust into the atmosphere will not be permitted during the manufacture, handling, and storage of concrete aggregate, and the contractor shall use such methods and equipment as necessary for the collection and disposal, or prevention, of dust during these operations. The contractor's methods of storing and handling cement and pozzolans shall also include means of eliminating atmospheric discharges of dust.

15. Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until repairs or adjustments are made.

16. The contractor shall prevent any nuisance to persons or damage to crops, cultivated fields, and dwellings from dust originating from his operations. Oil and other petroleum derivatives shall not be used for dust control. Speed limits shall be enforced, based on road conditions, to reduce dust problems.

17. To avoid nuisance conditions due to construction noise, all internal combustion engines used in connection with construction activity shall be fitted with an approved muffler and spark arrester.

18. Burning or burying waste materials on the ROW or at the construction site will be permitted if allowed by local regulations. The contractor shall remove all other waste materials from the construction area. All materials resulting from the contractor's clearing operations shall be removed from the ROW.

19. The contractor shall make all necessary provisions in conformance with safety requirements for maintaining the flow of public traffic and shall conduct its construction operations to offer the least possible obstruction and inconvenience to public traffic.

20. Western will apply necessary mitigation to eliminate problems of induced currents and voltages onto conductive objects sharing a ROW, to the mutual satisfaction to the parties involved.

21. Structures will be carefully located to avoid sensitive vegetative conditions, including wetlands, where practical.

22. ROW will be located to avoid sensitive vegetation conditions including wetlands where practical, or, if they are linear to cross them at the least sensitive feasible point.

23. Removal of vegetation will be minimized to avoid creating a swath along the ROW.

24. Topsoil will be removed, stockpiled, and respread at all heavily disturbed areas not needed for maintenance access.

25. All disturbed areas not needed for maintenance access will be reseeded using mixes approved by the landowner or land management agency.

26. Erosion control measures will be implemented on disturbed areas, including areas that must be used for maintenance operations (access ways and areas around structures).

27. The minimum area will be used for access ways (12 feet to 15 feet wide, except where roadless construction is used).

28. Structures will be located and designed to conform with the terrain. Leveling and benching of the structure sites will be the minimum necessary to allow structure assembly and erection.

29. ROW will be located to utilize the least steep terrain and, therefore, to disturb the smallest area feasible.

30. Careful structure location will ensure spanning of narrow flood prone areas.

31. Structures will not be sited on any potentially active faults.

32. Structure sites and other disturbed areas will be located at least 300 feet, where practical, from rivers, streams (including ephemeral streams), ponds, lakes, and reservoirs.

33. New access ways will be located at least 300 feet, where practical, from rivers, ponds, lakes, and reservoirs.

34. At crossings of perennial streams by new access ways, culverts of adequate size to accommodate the estimated peak flow of the stream will be installed. Construction areas will minimize disturbance of the stream banks and beds during construction. The mitigation measures listed for soil/vegetation resources will be performed on areas disturbed during culvert construction.

35. If the banks of ephemeral stream crossings are sufficiently high and steep that breaking them down for a crossing would cause excessive disturbance, culverts will be installed using the same measures as for culverts on perennial streams.

36. Blasting will not be allowed.

37. Power line structures will be located, where practical, to span small occurrences of sensitive land uses, such as cultivated areas. Where practicable, construction access ways will be located to avoid sensitive conditions.

38. ROW will be purchased at fair market value and payment will be made of full value for crop damages or other property damage during construction or maintenance.

39. The Power line will be designed to minimize noise and other effects from energized conductors.

40. The precise location of all structure sites, ROW, and other disturbed areas will be determined in cooperation with landowners or land management agencies.

41. Crossing of operating railroads by construction vehicles or equipment in a manner that would cause delays to railroad operations will be avoided. Construction will be coordinated with railroad operators. Conductors and overhead wire string operations would use guard structures to eliminate delays.

42. Before construction, Western will perform a Class III (100 percent of surface) cultural survey on all areas to be disturbed, including structure sites and new access ways. These surveys will be coordinated with the appropriate land owner or land management agency. A product of the survey will be a Cultural Resources Report recording findings and suggesting mitigation measures. These findings will be reviewed with the State Historic Preservation Offices and other appropriate agencies, and specific mitigation measures necessary for each site or resource will be determined. Mitigation may include careful relocation of access ways, structure sites, and other disturbed areas to avoid cultural sites that should not be disturbed, or data recovery.

43. The contractor will be informed of the need to cease work in the location if cultural resource items are discovered.

44. Construction activities will be monitored or sites flagged to prevent inadvertent destruction of any cultural resource for which the agreed mitigation was avoidance.

45. Construction crews will be monitored to the extent possible to prevent vandalism or unauthorized removal or disturbance of cultural artifacts or materials from sites where the agreed mitigation was avoidance.

46. Should any cultural resources that were not discovered during the Class III Survey be encountered during construction, ground disturbance activities at that location will be suspended until the provisions of the National Historic Preservation Act and enabling legislation have been carried out.

47. Construction activities will be monitored or significant locations flagged to prevent inadvertent destruction of any paleontological resource for which the agreed mitigation was avoidance.

48. Clearing for the access road will be limited to only those trees necessary to permit the passage of equipment.

49. The access road will follow the lay of the land rather than a straight line along the ROW where steep features would result in a higher disturbance.

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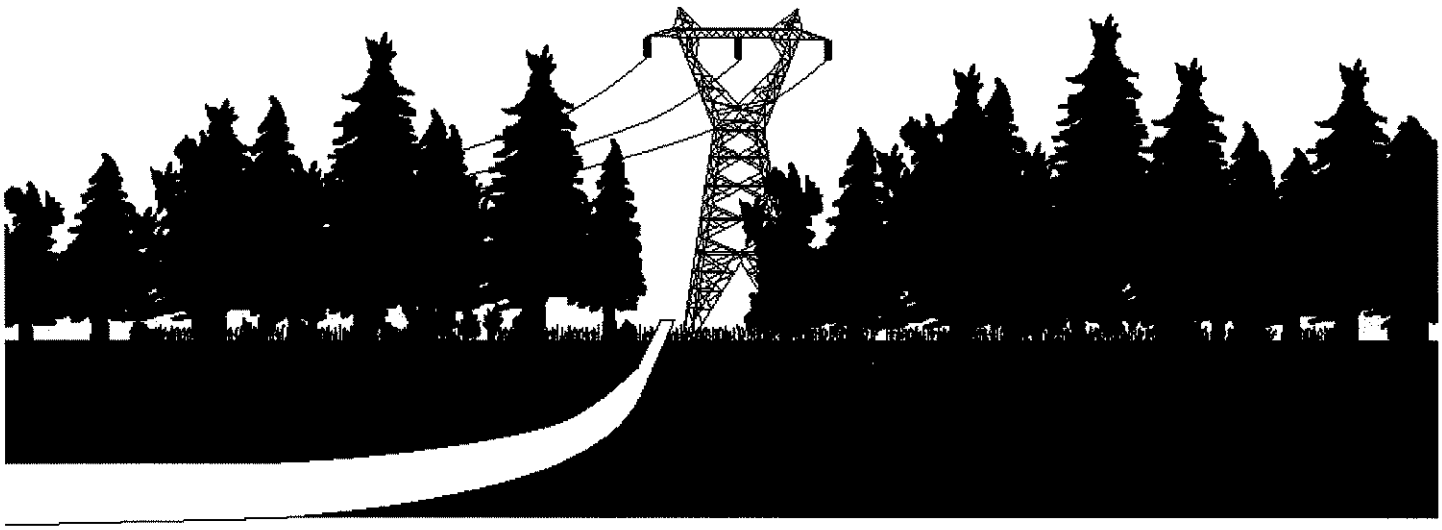
Western
AREA POWER
ADMINISTRATION

CONSTRUCTION STANDARDS

STANDARD 13

ENVIRONMENTAL QUALITY PROTECTION



June 2003

SAFETY
A HABIT TO LIVE BY

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

TABLE OF CONTENTS

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.1--CONTRACTOR FURNISHED DATA

1. RECYCLED MATERIAL QUANTITY REPORT: Submit quantities for recycled material listed in Section 13.6, "Recycled Material Quantities", to the COR after completion and prior to submittal of final invoice.

2. PRODUCTS CONTAINING RECOVERED MATERIAL REPORT: Provide the COR the following information for purchases of items listed in Section 13.7, "Use of Products Containing Recovered Material":

   (1) Quantity and cost of listed items with recovered material content and quantity and cost of listed items without recovered material content after completion and prior to submittal of final invoice.

   (2) Written justification 7 days prior to purchase of listed items if recovered material content products are not available: 1) competitively within a reasonable time frame; 2) that meet performance criteria defined in the Standards or Project Specifications; or 3) at a reasonable price.

3. RECLAIMED REFRIGERANT RECEIPT: A receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR after completion and prior to submittal of final invoice in accordance with Section 13.8.5, "Refrigerants And Receipts".

4. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR after completion and prior to submittal of final invoice in accordance with Section 13.8.8, "Waste Material Quantity Report".

   (1) Sanitary Wastes: Volume in cubic yards or weight in pounds.

   (2) Hazardous or Universal Wastes: Weight in pounds.

   (3) PCB Wastes: Weight in pounds.

   (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).

5. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Submit the Plan as described in Section 13.10.2, "Spill Prevention Notification and Cleanup Plan", to the COR for approval 14 days prior to start of work. Approval of the Plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

6. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Submit the Plan as described in Section 13.10.3, "Tanker Oil Spill Prevention and Response Plan", to the COR for approval 14 days prior to start of work. Approval of the Plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

7. PESTICIDE USE PLAN: Submit two copies of a pesticide use plan as described in Section 13.11.3, "Pesticide Use Plan", to the COR for approval 14 days prior to use. Approval of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days

after application, submit a written report in accordance with Standard 2 – Sitework, Section 2.1.1.5, "Soil-Applied Herbicide".

8. TREATED WOOD POLE AND MEMBERS RECYCLING CONSUMER INFORMATION RECEIPT: Submit treated wood pole and members consumer receipt forms to the COR after completion and prior to submittal of final invoice (see 13.12, "Treated Wood Poles and Members Recycling or Disposal").

9. PREVENTION OF AIR POLLUTION: Submit a copy of permits, if required, from Federal, State, or local agencies to the COR 14 days prior to the start of work.

10. ASBESTOS LICENSES OR CERTIFICATIONS: Submit a copy of licenses and/or certifications for asbestos work as described in 13.14, "Handling and Management of Asbestos Containing Material" paragraph a., to the COR prior to work. Submit copies of certificates of disposal and/or receipts for waste to the COR after completion and prior to submittal of final invoice.

11. LEAD PAINT NOTICES: Submit a copy of lead paint notices as described in 13.15, "Material with Lead-based Paint" paragraph b., to the COR upon completion and prior to submittal of final invoice. Submit copies of certificates of disposal and/or receipts for waste to the COR after completion and prior to submittal of final invoice.

12. WATER POLLUTION PERMITS: Submit copies of any water pollution permits as described in 13.16, "Prevention of Water Pollution" paragraph b., to the COR prior to work.

13. PCB TEST REPORT: Submit a PCB test report as described in 13.17, "Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment" paragraph b., prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.

14. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed as described in 13.17, "Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment", to the COR upon completion and prior to submittal of final invoice.

15. OSHA PCB TRAINING RECORDS: Submit employee training documentation records to the COR 14 days prior to the start of work as described in 13.18.1.

16. CLEANUP WORK MANAGEMENT PLAN: Submit a Cleanup Work Management Plan as described in 13.18, "Removal of Oil-contaminated Material" paragraph b., to the COR for approval 14 days prior to the start of work. Approval of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

17. POST CLEANUP REPORT: Submit a Post-Cleanup Report as described in 13.18, "Removal of Oil-contaminated Material" paragraph g., to the COR upon completion and prior to submittal of final invoice.

SECTION 13.2--ENVIRONMENTAL REQUIREMENTS

Comply with Federal, State, and local environmental laws and regulations. The sections in this Standard further specify the requirements.

SECTION 13.3--LANDSCAPE PRESERVATION

1. GENERAL: Preserve landscape features in accordance with the contract clause titled "Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements."

2. CONSTRUCTION ROADS: Location, alignment, and grade of construction roads shall be subject to the COR's approval. When no longer required, construction roads shall be restored to their original condition. Surfaces of construction roads shall be scarified to facilitate natural revegetation, provide for proper drainage, and prevent erosion. If revegetation is required, then use regionally native plants.

3. CONSTRUCTION FACILITIES: Shop, office, and yard areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent and prevent impact on sensitive riparian areas and flood plains. Storage and construction buildings, including concrete footings and slabs, shall be removed from the site prior to contract completion. The area shall be regraded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. If revegetation is required, then use regionally native plants.

SECTION 13.4--PRESERVATION OF CULTURAL AND PALEONTOLOGICAL RESOURCES

1. GENERAL: Do not remove or alter cultural artifacts or paleontological resources (fossils). Cultural artifacts are of potential scientific or cultural importance and include bones, tools, historic buildings, and features. Paleontological resources can be of scientific importance and include mineralized animals and plants or trace fossils such as footprints. Both cultural and paleontological resources are protected by Federal Regulations during Federal construction projects.

2. KNOWN CULTURAL OR PALEONTOLOGICAL SITES: Following issuance of notice to proceed, Western will provide two sets of plan and profile drawings showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be marked on the ground in a manner approved by the COR. Instruct employees, subcontractors, and others that vehicular or equipment access to these areas is prohibited. If access is absolutely necessary, first obtain approval from the COR. Ground markings shall be maintained throughout the duration of the contract. Western will remove the markings during or following final cleanup. For some project work, Western will require an archaeological, paleontological or tribal monitor at or near cultural or paleontological site locations. The contractor shall work with the monitor to identify avoidance areas.

3. UNKNOWN CULTURAL OR PALEONTOLOGICAL SITES: On rare occasions cultural or paleontological sites may be discovered during excavation or other earth-moving activities.

   (1) Reporting: If evidence of a cultural or paleontological site is discovered, immediately notify the COR and give the location and nature of the findings. Stop all activities within a 50-foot radius of the discovery and do not proceed with work within that radius until directed to do so by the COR.

   (2) Care of Evidence: Do not damage artifacts or fossils uncovered during construction.

4. CONTRACT ADJUSTMENTS: Where appropriate by reason of delays caused by a discovery, the Contracting Officer may make adjustments to contract requirements.

SECTION 13.5--NOXIOUS WEED CONTROL

1. GENERAL: Comply with Federal, state, and local noxious weed control regulations. Provide a "clean vehicle policy" while entering and leaving construction areas to prevent transport of noxious weed plants and/or seed. Transport only construction vehicles that are free of mud and vegetation debris to staging areas and the project right-of-way.

SECTION 13.6--RECYCLED MATERIAL QUANTITIES

1. GENERAL: Record quantities of the following material by category that is salvaged, recycled, reused, or reprocessed:

   (1) Transformers, Breakers: Weight without oil.

   (2) Electrical Conductors: Length in feet and Type (for example, ACSR, Copper, and gauge).

   (3) Structural Steel: Weight in pounds or tons.

   (4) Aluminum Buswork: Weight in pounds or tons.

   (5) Other Metals: Weight in pounds or tons.

   (6) Oil: Gallons (separate by type - less than 2 ppm PCB, 2 to 50 ppm PCB, and 50 or greater ppm PCB).

   (7) Gravel, Asphalt, Or Concrete: Weight in pounds or tons.

   (8) Batteries: Weight in pounds.

   (9) Wood Poles and Crossarms: Weight in pounds.

   (10) Cardboard. Weight in pounds.

   (11) Porcelain insulators. Weight in pounds.

2. RECYCLED MATERIAL QUANTITY REPORT: Submit quantities for recycled material listed above to the COR after completion and prior to submittal of final invoice.

SECTION 13.7--USE OF PRODUCTS CONTAINING RECOVERED MATERIAL AND BIOBASED PRODUCTS

1. PRODUCTS CONTAINING RECOVERED MATERIAL: If the products listed below are obtained as part of this project, purchase the items with the highest recovered material content possible unless recovered material content products are not available: 1) competitively within a reasonable time frame; 2) that meet performance criteria defined in the Standards or Project Specifications; or 3) at a reasonable price.

   (1) Construction Products:

   - Building Insulation Products
   - Carpet
   - Carpet cushion
   - Cement and concrete containing coal fly ash, ground granulated blast furnace slag, cenosperes, or silica fume

- Consolidated and reprocessed latex paint
- Floor Tiles
- Flowable fill
- Laminated Paperboard
- Modular threshold ramps
- Nonpressure pipe
- Patio Blocks
- Railroad grade crossing surfaces
- Roofing materials
- Shower and restroom dividers/partitions
- Structural Fiberboard

(2) Landscaping Products:

- Compost made from yard trimmings or food waste
- Garden and soaker hoses
- Hydraulic Mulch
- Lawn and garden edging
- Plastic lumber landscaping timbers and posts

(3) Non-paper Office Products:

- Binders, clipboards, file folders, clip portfolios, and presentation folders
- Office furniture
- Office recycling containers
- Office waste receptacles
- Plastic desktop accessories
- Plastic envelopes
- Plastic trash bags
- Printer ribbons
- Toner cartridges

(4) Paper and Paper Products:

- Commercial/industrial sanitary tissue products
- Miscellaneous papers
- Newsprint
- Paperboard and packaging products
- Printing and writing papers

(5) Park and Recreation Products:

- Park benches and picnic tables
- Plastic fencing
- Playground equipment
- Playground surfaces
- Running tracks

(6) Transportation Products:

- Channelizers
- Delineators
- Flexible delineators
- Parking stops

- Traffic barricades
- Traffic cones

(7) Vehicular Products:

- Engine coolants
- Rebuilt Vehicular Parts
- Re-refined lubricating oils
- Retread tires

(8) Miscellaneous Products:

- Awards and plaques
- Bike racks
- Blasting grit
- Industrial drums
- Manual-grade strapping
- Mats
- Pallets
- Signage
- Sorbents

(9) For a complete listing of products and recommendations for recovered content, see http://www.epa.gov/cpg/products.htm

2. PRODUCTS CONTAINING RECOVERED MATERIAL REPORT: Provide the COR the following information for purchases of those items listed above:

(1) Quantity and cost of listed items with recovered material content and quantity and cost of listed items without recovered material content after completion and prior to submittal of final invoice.

(2) Written justification 7 days prior to purchase of listed items if recovered material content products are not available: 1) competitively within a reasonable time frame; 2) that meet performance criteria defined in the Standards or Project Specifications; or 3) at a reasonable price.

3. BIOBASED PRODUCTS: If the products listed below are obtained as part of this project, purchase the items with the highest biobased content possible and no less than the percent indicated for each product unless biobased products: 1) are not available within a reasonable period of time, 2) fail to meet performance criteria defined in the Standards or Project Specifications, or 3) are available only at an unreasonable price.

(1) Mobile Equipment Hydraulic Fluids (minimum 24% biobased content)
(2) Urethane Roof Coatings (minimum 62% biobased content)
(3) Water Tank Coatings (minimum 62% biobased content)
(4) Diesel Fuel Additives (minimum 93% biobased content)
(5) Penetrating Lubricants (minimum 71% biobased content)
(6) Bedding, Bed Linens, and Towels (minimum 18% biobased content)

(7) For additional information regarding biobased products, see **http://www.biobased.oce.usda.gov**

4. BIOBASED PRODUCTS REPORT: Provide the COR the following information for purchases of those biobased items listed above:

(1) Quantity and cost of listed items with biobased content and quantity and cost of listed items without biobased content after completion and prior to submittal of final invoice.

(2) Written justification 7 days prior to purchase of listed items if biobased products: 1) are not available within a reasonable period of time, 2) fail to meet performance criteria defined in the Standards or Project Specifications, or 3) are available only at an unreasonable price.

SECTION 13.8--DISPOSAL OF WASTE MATERIAL

1. GENERAL: Dispose or recycle waste material in accordance with applicable Federal, State and Local regulations and ordinances. In addition to the requirements of the Contract Clause "Cleaning Up", remove all waste material from the construction site. No waste shall be left on Western property, right-of-way, or easement. Burning or burying of waste material is not permitted.

2. HAZARDOUS, UNIVERSAL, AND NON-HAZARDOUS WASTES: Manage hazardous, universal, and non-hazardous wastes in accordance with State and Federal regulations.

3. USED OIL: Used oil generated from the Contractor activities shall be managed in accordance with used oil regulations.

4. RECYCLABLE MATERIAL: Reduce wastes, including excess Western material, by recycling, reusing, or reprocessing. Examples of recycling, reusing, or reprocessing include reprocessing of solvents; recycling cardboard; and salvaging scrap metals.

5. REFRIGERANTS AND RECEIPTS: Refrigerants from air conditioners, water coolers, refrigerators, ice machines and vehicles shall be reclaimed with certified equipment operated by certified technicians if the item is to be disposed. Refrigerants shall be reclaimed and not vented to the atmosphere. A receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR after completion and prior to submittal of final invoice.

6. HALONS: Equipment containing halons that must be tested, maintained, serviced, repaired, or disposed must be handled according to EPA requirements and by technicians trained according to those requirements.

7. SULFUR HEXAFLOURIDE (SF6): SF6 shall be reclaimed and not vented to the atmosphere.

8. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR after completion and prior to submittal of final invoice.

   (1) Sanitary Wastes: Volume in cubic yards or weight in pounds.

   (2) Hazardous or Universal Wastes: Weight in pounds.

   (3) PCB Wastes: Weight in pounds.

   (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).

SECTION 13.9--CONTRACTOR'S LIABILITY FOR REGULATED MATERIAL INCIDENTS

1. GENERAL: The Contractor is solely liable for all expenses related to spills, mishandling, or incidents of regulated material attributable to his actions or the actions of his subcontractors. This includes all

response, investigation, cleanup, disposal, permitting, reporting, and requirements from applicable environmental regulation agencies.

2. SUPERVISION: The actions of the Contractor employees, agents, and subcontractors shall be properly managed at all times on Western property or while transporting Western's (or previously owned by Western) regulated material and equipment.

SECTION 13.10--POLLUTANT SPILL PREVENTION, NOTIFICATION, AND CLEANUP

1. GENERAL: Provide measures to prevent spills of pollutants and respond appropriately if a spill occurs. A pollutant includes any hazardous or non-hazardous substance that when spilled, will contaminate soil, surface water, or ground water. This includes any solvent, fuel, oil, paint, pesticide, engine coolants, and similar substances.

2. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Provide the Plan to the COR for approval 14 days prior to start of work. Approval of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Include the following in the Plan:

   (1) Spill Prevention measures. Describe the work practices or precautions that will be used at the job site to prevent spills. These may include engineered or manufactured techniques such as installation of berms around fuel and oil tanks; Storage of fuels, paints, and other substances in spill proof containers; and management techniques such as requiring workers to handle material in certain ways.

   (2) Notification. Most States and the Environmental Protection Agency require by regulation, that anyone who spills certain types of pollutants in certain quantities notify them of the spill within a specific time period. Some of these agencies require written follow up reports and cleanup reports. Include in the Plan, the types of spills for which notification would be made, the agencies notified, the information the agency requires during the notification, and the telephone numbers for notification.

   (3) Employee Awareness Training. Describe employee awareness training procedures that will be implemented to ensure personnel are knowledgeable about the contents of the Plan and the need for notification.

   (4) Commitment of Manpower, Equipment and Material. Identify the arrangements made to respond to spills, including the commitment of manpower, equipment and material.

   (5) If applicable, address all requirements of 40CFR112 pertaining to Spill Prevention, Control and Countermeasures Plans.

3. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Provide a Tanker Oil Spill Prevention and Response Plan as required by the Department of Transportation if oil tankers with volume of 3,500 gallons or more are used as part of the project. Submit the Tanker Oil Spill Prevention and Response Plan to the COR for approval 14 days prior to start of work. Approval of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

SECTION 13.11--PESTICIDES

1. GENERAL: The term "pesticide" includes herbicides, insecticides, rodenticides and fungicides. Pesticides shall only be used in accordance with their labeling.

2. ENVIRONMENTAL PROTECTION AGENCY REGISTRATION: Use EPA registered pesticides.

3. PESTICIDE USE PLAN: The plan shall contain: 1) a description of the pesticide to be used, 2) where it is to be applied, 3) the application rate, 4) a copy of the label, and 5) a copy of required applicator certifications. Submit two copies of the pesticide use plan to the COR for approval 14 days prior to the date of intended application. Approval of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after application, submit a written report in accordance with Standard 2 – Sitework, Section 2.1.1.5, "Soil-Applied Herbicide".

SECTION 13.12--TREATED WOOD POLES AND MEMBERS RECYCLING OR DISPOSAL

Whenever practicable, treated wood poles and members removed during the project shall be recycled or transferred to the public for some uses. Treated wood poles and members transferred to a recycler, landfill, or the public shall be accompanied by a written consumer information sheet on treated wood as provided by Western. Obtain a receipt form, part of the consumer information sheet, from the recipient indicating that they have received, read, and understand the consumer information sheet. Treated wood products transferred to right-of-way landowners shall be moved off the right-of-way. Treated wood product scrap or poles and members that cannot be donated or reused shall be properly disposed in a landfill that accepts treated wood and has signed Western's consumer information sheet receipt. Submit treated wood pole and members consumer receipt forms to the COR after completion and prior to submittal of final invoice.

SECTION 13.13--PREVENTION OF AIR POLLUTION

1. GENERAL: Ensure that construction activities and the operation of equipment are undertaken to reduce the emission of air pollutants. Submit a copy of permits, if required, from Federal, State, or local agencies to the COR 14 days prior to the start of work.

2. MACHINERY AIR EMISSIONS: The Contractor and subcontractor machinery shall have, and shall use the air emissions control devices required by Federal, State or Local Regulation or ordinance.

3. DUST ABATEMENT: Dust shall be controlled. Oil shall not be used as a dust suppressant. Dust suppressants shall be approved by the COR prior to use.

SECTION 13.14--HANDLING AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL

1. GENERAL: Obtain the appropriate Federal, State or local licenses or certifications prior to disturbing any regulated asbestos-containing material. Submit a copy of licenses and/or certifications for asbestos work to the COR prior to work. Ensure: 1) worker and public safety requirements are fully implemented and 2) proper handling, transportation, and disposal of asbestos containing material.

2. TRANSPORTATION OF ASBESTOS WASTE: Comply with Department of Transportation, Environmental Protection Agency, and State and Local requirements when transporting asbestos wastes.

3. CERTIFICATES OF DISPOSAL AND RECEIPTS: Obtain certificate of disposals for waste if the waste is a hazardous waste or receipts if the waste is a non-hazardous waste. Submit copies to the COR after completion and prior to submittal of final invoice.

SECTION 13.15--MATERIAL WITH LEAD-BASED PAINT

1. GENERAL: Comply with all applicable Federal, State and local regulations concerning work with lead-based paint, disposal of material painted with lead-based paint, and management of these material. OSHA and General Industry Standards apply to worker safety and right-to-know issues. Federal EPA and State agencies regulate waste disposal and air quality issues.

2. TRANSFER OF PROPERTY: If lead-based paint containing equipment or material is to be given away or sold for reuse, scrap, or reclaiming, a written notice shall be provided to the recipient of the material stating that the material contains lead-based paint and the Hazardous Waste regulations may apply to the waste or the paint in some circumstances. The new owner must also be notified that they may be responsible for compliance with OSHA requirements if the material is to be cut, sanded, abraded, or stripped of paint. Submit a copy of lead paint notices to the COR upon completion and prior to submittal of final invoice.

3. CERTIFICATES OF DISPOSAL AND RECEIPTS: Obtain certificate of disposals for waste if the waste is a hazardous waste or receipts if the waste is a non-hazardous waste. Submit copies to the COR after completion and prior to submittal of final invoice.

SECTION 13.16--PREVENTION OF WATER POLLUTION

1. GENERAL: Ensure that surface and ground water is protected from pollution caused by construction activities and comply with applicable regulations and requirements.

2. PERMITS: Ensure that:

   (1) Streams, and other waterways or courses are not obstructed or impaired, unless the appropriate Federal, State or local permits have been obtained;

   (2) A National Pollutant Discharge Elimination System (NPDES) Permit is obtained if required by State or Federal regulation; and

   (3) A dewatering permit is obtained from the appropriate agency if required for construction dewatering activities.

   (4) Copies of any water pollution permits are submitted to the COR prior to work.

3. EXCAVATED MATERIAL AND OTHER CONTAMINANT SOURCES: Control runoff from excavated areas and piles of excavated material, construction material or wastes (to include truck washing and concrete wastes), and chemical products such as oil, grease, solvents, fuels, pesticides, and pole treatment compounds. Excavated material or other construction material shall not be stockpiled or deposited near or on streambanks, lake shorelines, ditches, irrigation canals, or other areas where run-off could impact the environment.

4. MANAGEMENT OF WASTE CONCRETE OR WASHING OF CONCRETE TRUCKS: Do not permit the washing of concrete trucks or disposal of excess concrete in any ditch, canal, stream, or other surface water. Concrete wastes shall be disposed in accordance with all Federal, State, and local regulations. Concrete wastes shall not be disposed on any Western property, right-of-way, or easement; nor on any streets, roads, or property without the owner's consent.

5. STREAM CROSSINGS: Crossing of any stream or other waterway shall be done in compliance with Federal, State, and local regulations. Crossing of some waterways may be prohibited by landowners, State or Federal agencies or require permits.

SECTION 13.17--TESTING, DRAINING, REMOVAL, AND DISPOSAL OF OIL-FILLED ELECTRICAL EQUIPMENT

1. SAMPLING AND TESTING OF INSULATING OIL FOR PCB CONTENT: Sample and analyze the oil of electrical equipment for PCB's. Use analytical methods approved by EPA and applicable State regulations. Decontaminate sampling equipment according to documented good laboratory practices (these can be contractor developed or EPA standards). Use only laboratories approved by Western. The COR will furnish a list of approved laboratories.

2. PCB TEST REPORT: Provide PCB test reports that contain the information below for disposing of oil-filled electrical equipment. Submit the PCB test report prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.

   - Name and address of the laboratory
   - Description of the electrical equipment (e.g. transformer, breaker)
   - Serial number for the electrical equipment.
   - Date sampled
   - Date tested
   - PCB contents in parts per million (ppm)
   - Unique identification number of container into which the oil was drained (i.e., number of drum, tank, tanker, etc.)

3. OIL CONTAINING PCB: Comply with the Federal regulations pertaining to PCBs found at Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).

4. REMOVAL AND DISPOSAL OF INSULATING OIL AND OIL-FILLED ELECTRICAL EQUIPMENT: Once the PCB content of the oil has been identified from laboratory results, the oil shall be transported and disposed, recycled, or reprocessed according to 40 CFR 761 (if applicable), Resource Conservation and Recovery Act (RCRA) "used oil", and other applicable regulations. Used oil may be transported only by EPA-registered used oil transporters. The oil must be stored in containers that are labeled "Used Oil." Use only U.S. transporters and disposal sites approved by Western.

5. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed to the COR upon completion and prior to submittal of final invoice.

SECTION 13.18--REMOVAL OF OIL-CONTAMINATED MATERIAL

1. GENERAL: Removing oil-contaminated material includes excavating, stockpiling, testing, transporting, cleaning, and disposing of these material. Personnel working with PCBs shall be trained in accordance with OSHA requirements. Submit employee training documentation records to the COR 14 days prior to the start of work.

2. CLEANUP WORK MANAGEMENT PLAN: Provide a Cleanup Work Management Plan that has been approved by applicable Federal, State, or Local environmental regulation agencies. Submit the plan to the COR for approval 14 days prior to the start of work. Approval of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. The plan shall address on-site excavation of contaminated soil and debris and include the following:

   - Identification of contaminants and areas to be excavated
   - Method of excavation
   - Level of personnel/subcontractor training

- Safety and health provisions
- Sampling requirements including quality control, laboratory to be used
- Management of excavated soils and debris
- Disposal methods, including transportation to disposal

3. EXCAVATION AND CLEANUP: Comply with the requirements of Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).

4. TEMPORARY STOCKPILING: Excavated material, temporarily stockpiled on site, shall be stored on heavy plastic and covered to prevent wind and rain erosion at a location designated by the COR.

5. SAMPLING AND TESTING: Sample contaminated debris and areas of excavation to ensure that contamination is removed. Use personnel with experience in sampling and, in particular, with experience in PCB cleanup if PCBs are involved. Use analytical methods approved by EPA and applicable State regulations.

6. TRANSPORTION AND DISPOSAL OF CONTAMINATED MATERIAL: The Contractor shall be responsible and liable for the proper loading, transportation, and disposal of contaminated material according to Federal, State, and local requirements. Use only U.S. transporters and disposal sites approved by Western.

7. POST CLEANUP REPORT: Provide a Post-Cleanup Report that describes the cleanup of contaminated soils and debris. Submit the report to the COR upon completion and prior to submittal of final invoice. The report shall contain the following information:

   - Site map showing the areas cleaned
   - Description of the operations involved in excavating, storing, sampling, and testing, and disposal
   - Sampling and analysis results including 1) Name and address of the laboratory, 2) sample locations, 3) sample dates, 4) analysis dates, 5) contents of contaminant (e.g. PCB or total petroleum hydrocarbons) in parts per million (ppm)
   - Certification by the Contractor that the cleanup requirements were met
   - Copies of any manifests, bills of lading, and disposal certificates
   - Copies of correspondence with regulatory agencies that support completion of the cleanup

SECTION 13.19—CONSERVATION OF NATURAL RESOURCES

1. GENERAL: Federal law prohibits the taking of endangered, threatened, proposed or candidate wildlife and plants, and destruction or adverse modification of designated Critical Habitat. Federal law also prohibits the taking of birds protected by the Migratory Bird Treaty Act. "Take" means to pursue, hunt, shoot, wound, kill, trap, capture or collect a protected animal or any part thereof, or attempt to do any of those things.

2. KNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT: Following issuance of the notice to proceed, and prior to the start of construction, Western will provide training to all contractor and subcontractor personnel involved in the construction activity. Untrained personnel shall not be allowed in the construction area. Western will provide two sets of plan and profile drawings showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be marked on the ground in a manner approved by the COR. If access is absolutely necessary, the contractor shall first obtain permission from the COR, noting that a Western and/or other government or tribal agency biologist may be required to accompany personnel and equipment. Ground markings shall be maintained through the duration of the contract. Western will remove the markings during or following final inspection of the project.

3. UNKNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT: If evidence of a protected species is found in the project area, the contractor shall immediately notify the COR and provide the location and nature of the findings. The contractor shall stop all activity in the vicinity of the protected species or habitat and not proceed until directed to do so by the COR.

4. CONTRACT ADJUSTMENTS: Where appropriate by reason of delays caused by a discovery, the Contracting Officer may make adjustments to contract requirements.

Appendix C

Draft Emergency Response Plan

TransCanada
In business to deliver

TransCanada Keystone, LP

Keystone Pipeline

Emergency Response Plan

(Oil Spill Response Plan)

24 Hour Emergency No.
1(XXX) XXX-XXXX

Manual No: _____

Assigned to: _____

OIL SPILL RESPONSE PLAN DESCRIPTION

The Oil Spill Response Plan as prescribed under 49CFR§194 is divided into the following two parts, which function as an integrated document:

Core Plan (Sections 1 through 8)

The Core Plan (Sections 1 through 8) contains general information outlining Company oil spill response procedures.

Response Zone Appendices (Sections 9 through 11)

The response zone appendices contain the individual Oil Spill Response Plans for each zone which are to be followed in the event of an oil spill.

Prior to completing the Response Zone Appendices, Keystone will also review the National Contingency Plan (NCP) and each applicable Regional Integrated Contingency Plan (RICP), to ensure the Keystone Oil Spill Response Plan is consistent with the applicable Environmental Protection Agency RICP and the NCP.

OIL SPILL RESPONSE PLAN

Revision Record

The purpose of this Revision Record is to document receipt and insertion of all revisions to the Oil Spill Response Plan, as well as to provide a record that the manual contains the most current information.

After you receive each revision and have updated your manual, please date and sign in the space provided, corresponding to the appropriate revision number.

Section	Revision Number/Effective Date	Date Inserted	Signature

LIST OF ACRONYMS

API	American Petroleum Institute
CE	Cushing Extension
EOC	Emergency Operations Center
EMS	Emergency Management System
EPA	Environmental Protection Agency
ESM	Emergency Site Manager
FOSC	Federal On Scene Coordinator
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
ICS	Incident Command System
MP	Mile Post
NCP	National Contingency Plan
NFPA	National Fire Protection Association
OCC	Operations Control Center
OSRO	Oil Spill Response Organization
PHMSA	Pipeline and Hazardous Material Safety Administration
PREP	National Preparedness for Response Exercise Program
QI	Qualified Individual
RICP	Regional Integrated Contingency Plan
SCADA	Supervisory Control and Data Acquisition

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1.0 CORE PLAN INFORMATION SUMMARY

The TransCanada Keystone, LP (hereafter referred to as Keystone) Core Plan (Sections 1 through 8) provides the base information utilized to develop the specific Oil Spill Response Plans. These Oil Spill Response Plans are to be followed in the event of a spill and are found in each Response Zone Appendix.

1.1 Operator Information

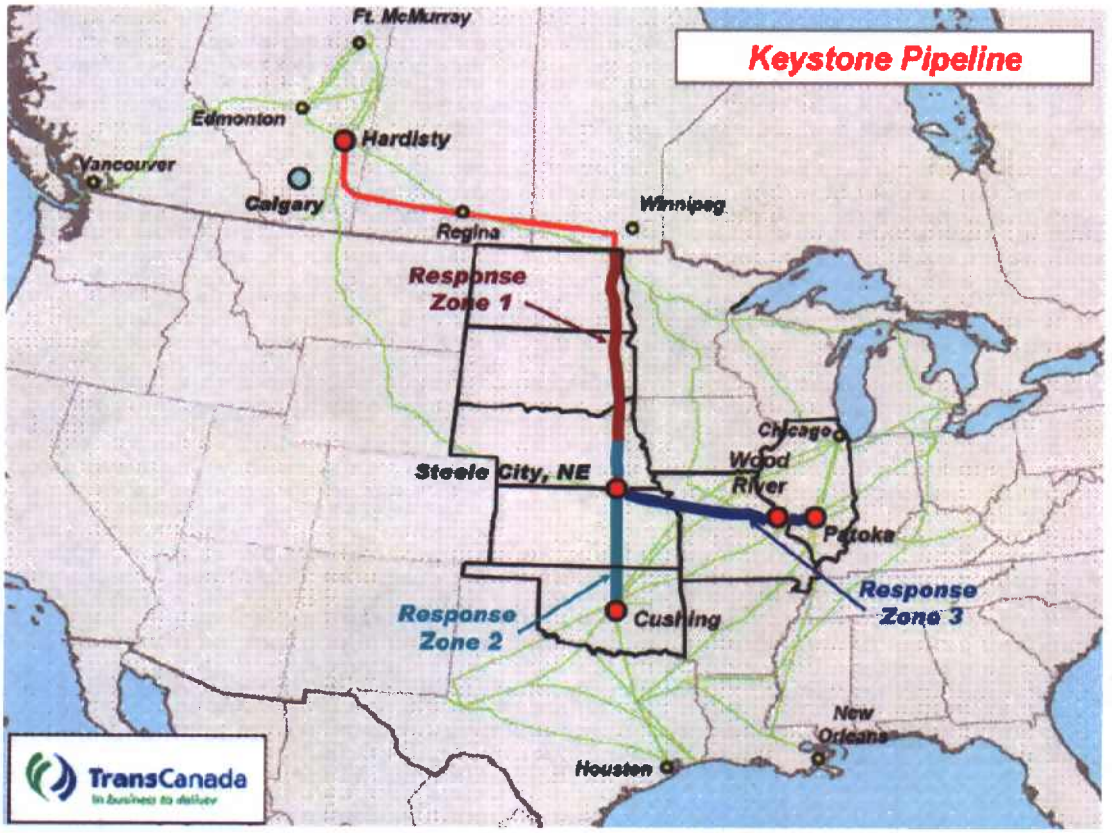
TransCanada Keystone, LP
450 – 1st Street S.W.
Calgary, Alberta, Canada T2P 5H1

1.1.1 Pipeline System Description

This document provides a preliminary Oil Spill Response Plan and outlines Keystone's processes and procedures established to comply with 49CFR§194. This plan will be updated upon completion of the detailed design of this project.

This Oil Spill Response Plan is intended to cover the U.S. segment of the pipeline system operated by Keystone. Three preliminary Response Zones have been established considering mileage and distribution of high consequence areas. Figure 1 provides a pipeline system map and illustrates the specific Response Zones.

Figure 1: Keystone Pipeline System and Oil Spill Response Zones.



The U.S. portion of the Keystone Pipeline consists of approximately 1,309 miles of 30-inch-diameter pipeline and 55 miles of 24-inch-diameter pipeline (located from Wood River to Patoka, Illinois). Crude oil receipts will initiate from an oil supply hub near Hardisty, Alberta, Canada for movement to delivery sites in Cushing, Oklahoma, as well as Wood River and Patoka, Illinois. For the purposes of developing this Oil Spill Response Plan and associated worst case discharge calculations, the maximum design capacity of 657,000 bpd will be utilized.

Primarily, crude oil transported by Keystone Pipeline will be derived from the Alberta oil sands region. The oil extracted from the sands is called bitumen. The bitumen is upgraded either through additional processing or by combining the bitumen with diluents. The upgraded product is then classified as synthetic crude oil. While the precise composition of synthetic crude will vary by shipper, and is considered proprietary information, Keystone expects to transport crude oils in the range of 12 to 45° API (American Petroleum Institute).

The Keystone Pipeline is controlled from the Operations Control Center (OCC), located in Calgary, Alberta, Canada. The OCC is staffed 24 hours per day 7 days a week, and utilizes a computer based Supervisory Control and Data Acquisition (SCADA) System to continuously monitor and control pipeline operations.

Keystone's 24 hour emergency contact phone number is 1 (XXX) XXX-XXXX and is posted on all pipeline marker posts and facility signs.

1.2 MSDS Information

This section will provide MSDS information on the slate of crude oils transported by Keystone.

1.3 Response Zone Summaries

For this preliminary Oil Spill Response Plan, the pipeline system has been segmented into 3 Response Zones. The specific Oil Spill Response Plans and information for each Response Zone is provided in the Appendices.

Changes to both the number and location of Response Zones are anticipated as the design is further developed and refined. For the purposes of this document Response Zones are defined as follows:

1.3.1 Response Zone One – North Dakota, South Dakota, Nebraska (part)

Milepost (MP) = 0 at U.S./Canadian Border to MP = 535

North Dakota (MP 0 to ≈ MP 215)

Counties:

Pembina, Cavalier, Walsh, Nelson, Steele, Barnes, Ransom, and Sargent

South Dakota (MP 215 to ≈ MP 431)

Counties:

Marshall, Day, Clark, Beadle, Kingsbury, Miner, Hanson, McCook, Hutchinson, and Yankton

Nebraska (MP 431 to ≈ MP 535)

Counties:

Cedar, Wayne, Stanton, Platte, Colfax

Table 1: Preliminary High Consequence Areas – Zone One

Each entry in the table below represents a unique location.

	Miles (Approximate)		
State	**Population**	**Drinking Water**	**Sensitive Areas**
North Dakota	0	6.96	2.03
South Dakota	0	1.96 5.87	9.36 5.95 7.15
Nebraska	0	5.38	6.19 0.99
TOTAL	**0**	**20.17**	**31.67**

1.3.2 Response Zone Two – Nebraska (part), Kansas, Oklahoma

Milepost (MP) = MP 535 to MP 634 and Cushing Extension (CE), CE MP 0 to CE MP 291

Nebraska (MP 535 to ≈ MP 634, CE MP 0 to ≈ CE MP 4)
Counties:
Butler, Seward, Saline and Jefferson

Kansas (CE MP 4 to ≈ CE MP 212)

Counties:

Washington, Clay, Dickinson, Marion, Butler, and Cowley

Oklahoma (CE MP 212 to ≈ CE MP 291)

Counties:

Kay, Noble, and Payne

Table 2: Preliminary High Consequence Areas – Zone Two

Each entry in the table below represents a unique location.

	Miles (Approximate)		
State	**Population**	**Drinking Water**	**Sensitive Areas**
Nebraska	0	0.70	2.13
Kansas	0	4.14 7.89 9.73 15.52 8.06	23.16 9.12 15.41
Oklahoma	0	9.11 9.17	7.71
TOTAL	**0**	**64.32**	**57.53**

1.3.3 Response Zone Three – Nebraska (part), Kansas, Missouri, Illinois

Milepost (MP) = MP 634 to MP 1073

Nebraska (MP 634 to ≈ MP 649)
Counties:
Jefferson, Gage

Kansas (MP 649 to ≈ MP 743)
Counties:

Marshall, Nemaha, Brown, and Doniphan

Missouri (MP 743 to ≈ MP 1016)

Counties:

Buchanan, Clinton, Caldwell, Carroll, Charlton, Randolph, Audrain, Montgomery, Lincoln, and St. Charles

Illinois (MP 1016 to ≈ MP 1073)

Counties:

Madison, Bond, Fayette, and Marion

Table 3: Preliminary High Consequence Areas – Zone Three

Each entry in the table below represents a unique location.

	Miles (Approximate)		
State	**Population**	**Drinking Water**	**Sensitive Areas**
Nebraska	0	1.86	0
Kansas	0	3.49	12.59
		4.91	5.68
Missouri	0	4.82	5.76
		12.01	12.08
			9.31
			7.38
			24.48
Illinois	0.64	1.08	5.22
	3.24	6.79	2.09
		3.10	
		5.67	
TOTAL	**3.88**	**43.73**	**84.59**

1.4 Certification

Pending completion of the final engineering design, Keystone will certify that it has obtained, through contract or other means, the necessary personnel and equipment to respond to the maximum extent practical, to the worst case discharge, or to the substantial threat of such a discharge.

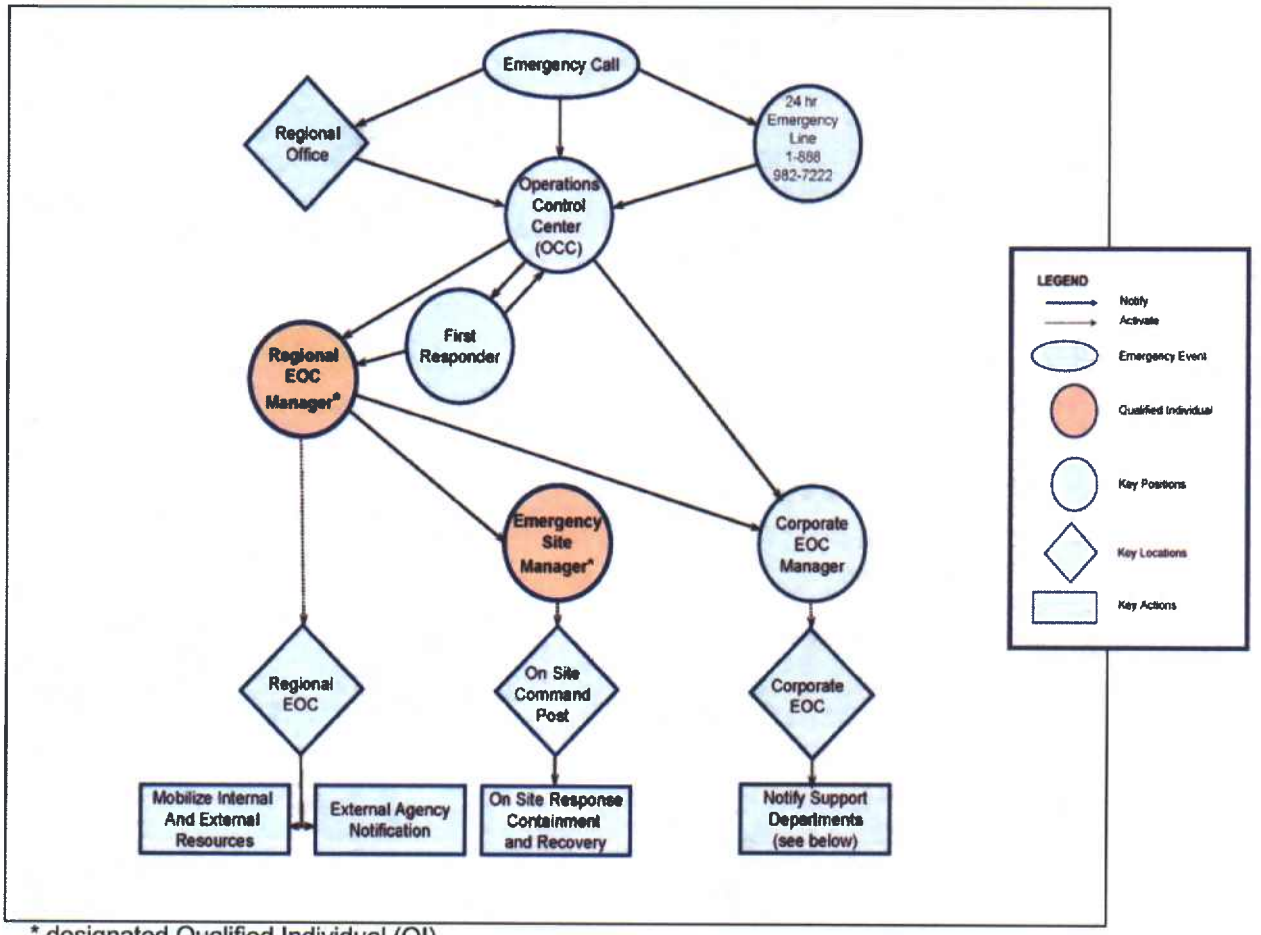
2.0 NOTIFICATION PROCEDURES

2.1 Notification Requirements

Figure 2 outlines the notification process for reporting and evaluating a potential oil spill, as well as activation of the Oil Spill Response Plan.

The Regional EOC Manager (Qualified Individual) is the key individual responsible for evaluating and activating the Oil Spill Response Plan.

Figure 2: Basic Oil Spill Response Initial Notification Process



* designated Qualified Individual (QI)
EOC = Emergency Operation Center
Corporate EOC Support Departments (from above) include but are not limited to:

- Asset Protection
- Communications
- Land, Community and Aboriginal Relations
- Health Safety and Environment
- Legal
- Regulatory Compliance
- Corporate Security
- Customer Services
- Operations Control Center
- Asset Reliability
- Insurance and Risk Management
- Facility Services and Real Estate
- Information Systems
- Human Resources
- Administration Support

2.2 Prioritized Notification Checklist for Key Individuals

2.2.1 First Responder

- ❑ Notification of potential spill and dispatch received from OCC
- ❑ SPILL VERIFIED
- ❑ Notification of Emergency Services, if required

  Verify with OCC:
  - ❑ Pipeline shutdown and status
  - ❑ Pipeline segment isolation
- ❑ Regional EOC Manager (QI) notified

2.2.2 Regional EOC Manager (QI)

- ❑ Notification received from OCC
- ❑ Notification of spill details received from First Responder
- ❑ OIL SPILL RESPONSE PLAN ACTIVATED
- ❑ Emergency Site Manager (QI) notified
- ❑ Regional EOC activated
- ❑ Mobilize response resources requested by Emergency Site Manager (QI)
- ❑ Corporate EOC Manager contacted
- ❑ Agency contacts initiated as per Section 2.3

2.2.3 Emergency Site Manager (QI)

- ❑ Notification received from Regional EOC Manager (QI)
- ❑ On site First Responder contacted to obtain briefing on spill
- ❑ On Site Command Post activated
- ❑ Regional EOC advised of resource requirements
- ❑ First Responder relieved

2.3 Notification Contacts

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized and State and Local requirements and contacts have been determined.

2.3.1 Keystone

Table 4: Keystone Notification

Position Making Call	Keystone Contacts	Primary Telephone No.	Secondary Telephone No.
OCC	**First Responder**		
	Regional EOC Manager (QI)		
	- Primary		
	- Alternate		
	Corporate EOC		
Regional EOC Manager (QI)	**Emergency Site Manager (QI)**		
	- Primary		
	- Alternate		
	Corporate EOC Manager		

2.3.2 Agency

Table 5: Agency Notification

Position Making Call	Agency Contact List	Telephone	Other Telephone/Fax
Regional EOC Manager (QI)	**Federal**		
	National Response Center	1-800-424-8802	
	State		
	Local		

2.3.3 Emergency Services

Table 6: Emergency Services Notification

Position Making Call	Emergency Contact List	Telephone	Other Telephone/Fax
Emergency Site Manager (QI)	Emergency Services		
	Fire/Ambulance		
	Police/Sheriff		
	Hospital		

2.4 Procedures for Notifying Qualified Individuals

In the event of a suspected leak, the OCC activates the communications process and contacts the Regional EOC Manager (QI), as illustrated in Figure 2: Basic Oil Spill Response Initial Notification Process, Page 6. Qualified Individuals are available on call 24/7 and on call list are maintained by the OCC. The Regional EOC Manager (QI) is responsible for activating the Oil Spill Response Plan and contacting the Emergency Site Manager (QI).

The Regional EOC Manager (QI) will be contacted primarily on a land line phone (home or office) or by cellular telephone backup. In the event that land and cellular communication are not functional, satellite phones are available. All on call Regional EOC Managers and Emergency Site Managers are equipped with cellular telephones.

2.5 Information Reported to Agencies

Communication Report (Call) Record

Regional EOC Manager (QI)

The following agency mandatory information, ***as identified in bold italic***, will be provided initially with subsequent notifications to complete the required mandatory criteria or advise of any changes.

Name of Pipeline: _____

Time of Discharge: _____

Location of Discharge (MP): _____

(GPS): _____

Type of Oil: _____

Reason of Discharge: _____

Estimated Volume of Oil Spill: _____

Weather Condition on Scene: _____

Action taken/ Planned by Person on Scene: _____

Injuries: _____

Extent of Injuries: _____

Evacuation: _____

Public Consequence: _____

3.0 SPILL DETECTION AND ON-SCENE SPILL MITIGATION PROCEDURES

3.1 Methods of Initial Discharge Detection

The following outlines the concepts and philosophies currently under consideration at this preliminary stage in the design of the Keystone Pipeline. Upon completion of the required design details, this section of the document will be revised and updated accordingly.

Keystone will utilize a comprehensive SCADA system to monitor and control the pipeline. Data provided by the SCADA system may alert the OCC operator to an abnormal operating condition which may signify a possible spill or leak. A back-up communication system will also be available should SCADA communications fail between field locations and the OCC.

In addition, Keystone will utilize a dedicated Leak Detection System to alert the OCC operator of a potential leak or spill.

The SCADA system will continuously monitor pipeline conditions and update information provided to the OCC operator. Data received via the SCADA system will also be directed to the dedicated Leak Detection System, capable of independently alarming to the OCC operator.

Standard operating and response procedures will be utilized by OCC operator in responding to abnormal pipeline conditions including leak alarms. The OCC operator will have the full and complete authority to execute a pipeline shutdown.

Notification of a possible initial pipeline release may be received by the OCC operator as follows:

1. Employee reported
2. Abnormal pipeline condition observed by OCC operator
3. Leak Detection System alarm
4. Third party reported

Upon receipt of notification as outlined above, the OCC operator will execute the following procedures:

1. Follow prescribed OCC operating and response procedures for specific directions on abnormal pipeline condition or alarm response
2. Dispatch First Responder
3. Shutdown pipeline within a predetermined time threshold if abnormal conditions or leak alarm can not be positively ruled out as a leak
4. Complete internal notifications as outlined in Figure 2: Basic Oil Spill Response Initial Notification Process, page 6.

3.2 On Scene Spill Mitigation and Recovery Procedures

This section of the document provides a listing of response strategies and techniques currently contemplated for use on the Keystone pipeline system. Those selected will be fully developed within the final Oil Spill Response Plan.

Keystone recognizes that certain River crossings along the pipeline route are considered high volume areas and will ensure the final Oil Spill Plan delivers the resources to respond to a potential release, in a more rapid fashion as required.

3.2.1 Spills on Water

- Small Creeks, Ponds and Bogs
- Large Rivers and Floodplains
- Large Lakes
- Beach Berming
- Beach Sumps
- Boom Techniques
- Calm Water Containment Booms
- Flowing Water Containment Booms
- Open Water Containment Booms
- Marine Diversion Booming
- Exclusion Booms
- Cascading Booms Calm
- Skimmers
- Rotating Discs
- Weir Devices
- Dam Techniques
- Blocking Dams
- Flowing Water Dams
- Sorbent Booms and Barriers
- Spills on Ice
- Spills under Ice

- Spill during Freeze-up or Break-up

3.2.2 Spills on Land

- Open Land and Forests
- Streets and Highways
- Earth Containment Berms
- Street Containment
- Culvert Blocking
- Storm Drain Blocking
- Interception Barriers
- Heavy Equipment
- Suction Devices
- Rotating Discs
- Spills on Sensitive Areas

3.2.3 Spills in Sensitive Areas

- Historical or Archaeological Sites
- Natural Areas
- National, State and Local Parks
- Protected Waterways
- Recreational Sites
- Water Supply Intakes
- Wetlands
- Wildlife Refuges

3.3 Equipment for Response Activities

See Section 5.4 for a listing of equipment for response activities.

3.4 Personnel for Response Activities

See Section 5.4 for a listing of personnel for response activities

3.5 Oil Transportation and Reclamation Facilities and Services

See Section 5.4 for a listing of oil transportation and reclamation facilities and services.

4.0 RESPONSE ACTIVITIES

4.1 Oil Spill Initial Response

All Keystone employees are authorized to communicate directly with the OCC should they observe conditions that may signify a possible spill (see Figure 2: Basic Oil Spill Response Initial Notification Process, page 6).

OCC operators have the full and complete authority to shutdown the pipeline and proceed with pipeline segment isolation in the area of the leak. The OCC can designate any qualified Keystone field employee as a First Responder in order to mitigate the early impacts of the spill. The First Responder is required to immediately respond and investigate the suspected location.

The First Responder serves as the Emergency Site Manager until relieved of this task by the assigned Emergency Site Manager (QI).

4.2 Oil Spill Response Organization, Responsibilities, Roles and Authority

The Organizational Chart for the Keystone Oil Spill Response Team is presented in Figure 3: Keystone Oil Spill Response Team Organization Chart, Page 15. The Emergency Site Manager (QI) in conjunction with the Regional EOC Manager (QI) is responsible for creating an oil spill response organization to effectively manage the incident. Role assignments for the Regional EOC and the Command Post represent the specific functional areas that the Emergency Site Manager (QI) and Regional EOC Manager (QI) determine are necessary to address a specific spill.

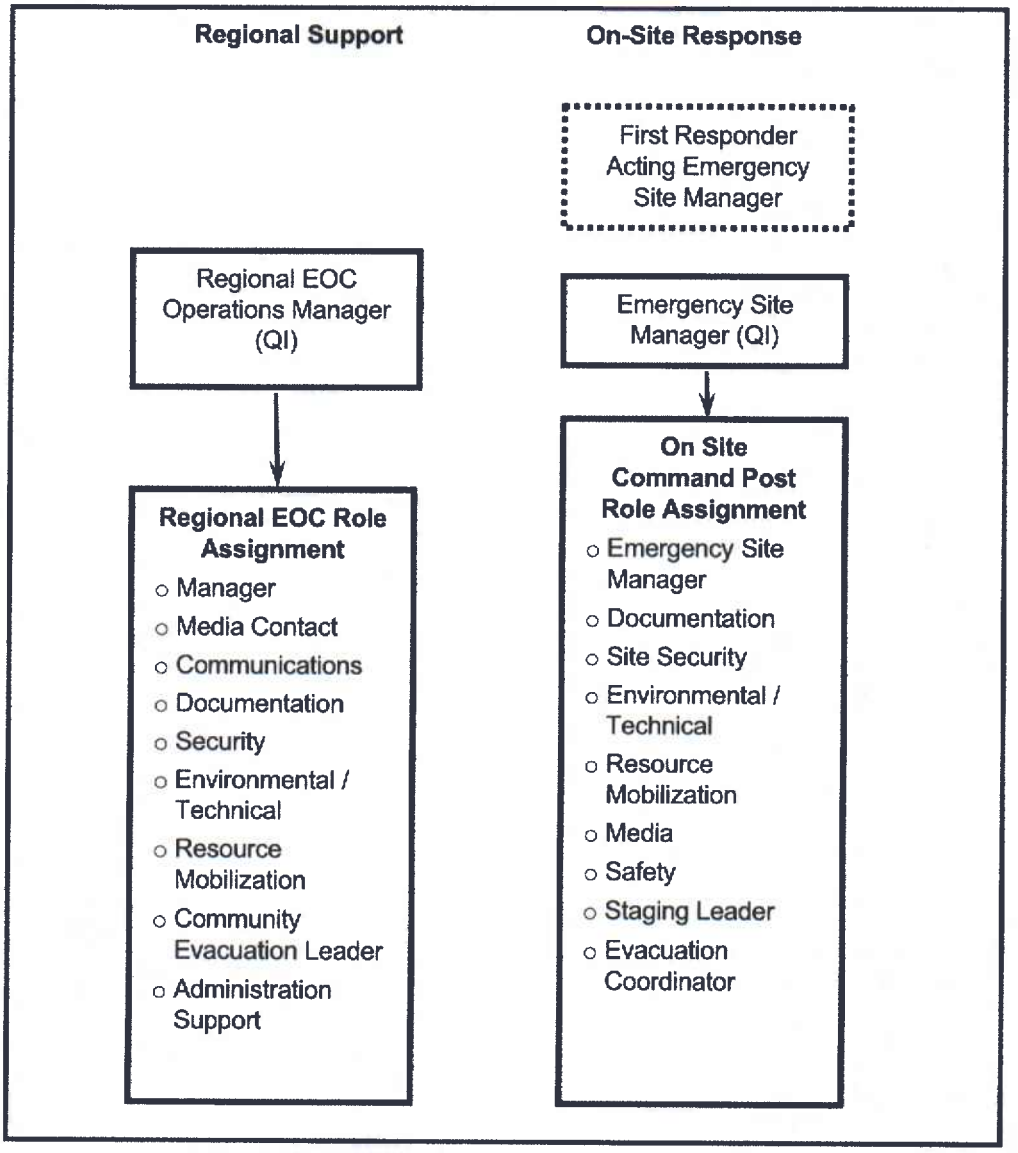
Procedures are established within Keystone outlining regular signing and financial authority limits. It is recognized that these standard authorities may not apply in an emergency due to the requirement to immediately contain and control the emergency situation.

Keystone has established the following policy related to Financial Authority in an emergency:

The Emergency Site Manager (QI) or Region EOC Manager (QI) has financial authority to obtain any and all resources necessary to contain and control the emergency situation.

Receipts, bills and invoices must be obtained for all supplies, services, equipment and contractors engaged as a result of the emergency, and submitted to the Emergency Site Manager (QI) or designated individual for cost management.

Figure 3: Keystone Oil Spill Response Team Organization Chart



4.2.1 First Responder

Responsibilities of the First Responder in priority include:

- Not putting yourself at risk
- Provide confirmation of emergency event and ensure pipeline isolation with the OCC
- Request emergency response personnel at the scene and advise the local authorities of a possible need for evacuation, as required
- Rescue if safe to do so
- Evacuate immediate area if necessary to preserve life and health
- Attempt to notify people at risk without entering the hazard area
- Secure the area and establish a perimeter at a safe distance

- Act as the Emergency Site Manager until relieved by the assigned Emergency Site Manager (QI)
- Work cooperatively with emergency response personnel and municipal authorities at the scene
- Instruct people not to touch or move anything
- Do Not disturb the scene except to preserve life or prevent injury

4.2.2 Regional EOC Manager (QI)

Following notification from the Operations Control Center of a possible oil spill, the Regional EOC Manager (QI) gathers information to assess the incident and is responsible for activation of the Oil Spill Response Plan.

The Regional EOC Manager (QI) determines the amount of resources required to address the emergency within the Regional EOC. Not all roles will be activated, or others may be added, in any given spill event. Furthermore, one person may take on several roles, and conversely one role may take several people.

The Regional EOC Manager (QI) contacts the Operations Control Center (OCC) to ensure that the Corporate EOC has been established. Specific responsibilities of the Regional EOC Manager (QI) in priority include, but are not limited to:

- Activate the Oil Spill Response Plan
- Establish and maintain contact with the Emergency Site Manager (ESM)
- Ensure all Regulatory notifications have been made
- Provide support as requested to the Command Post
- Document all actions using the Emergency Incident Log
- Establish contact with the Corporate EOC and communicate updates
- Remain advised of repair and restoration, accident and incident investigations, and other activities on site
- Assume financial authority to contain and control the emergency
- Ensure work order and other processes are established to track financial commitments

4.2.3 Regional EOC Roles

Regional EOC Communications

The Regional EOC Communications Role may make regulatory notifications if requested by the Regional EOC Manager (QI) and responds to requests for information. Notifications must be assigned a high priority. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Have available all required contact lists for the specific incident in progress
- Assemble confirmed facts about the incident although it may not be possible to answer all the following questions:

  - Name of Pipeline:
  - Time of Discharge:
  - Location of Discharge:
  - Type of Oil:
  - Reason of Discharge:
  - Estimated Volume of Oil Spill:
  - Weather Condition on Scene:
  - Action taken/ Planned by Person On Scene:

- Injuries:
- Extent of Injuries:
- Evacuation:
- Public Consequences:

- Assemble information on relevant products
- Local municipal authorities must be advised immediately of any Keystone emergency in their area if:

  - A landowner or community is being evacuated (notifications must also be made to the evacuating community and receiving community)
  - Local services such as power, water or gas supply is disrupted as a result of the emergency
  - Media attention is occurring or likely to occur
  - When there is a 3rd party injury or death
  - Members of the community called to report incident or incident is visible to the community

- Log any requests for information and follow-up

Regional EOC Security

The Regional EOC Security priorities at the EOC are to prevent unauthorized entry into the center, to facilitate any requests from the Command Post including requests to obtain contract security forces in a timely manner and to liaison with law enforcement agencies. Specific responsibilities include but are not limited to:

- Document all actions taken using the Emergency Incident Log
- Prevent unauthorized entry
- Ensure you identify yourself as Keystone's EOC Security to any Emergency Services or municipal emergency personnel attending the EOC
- Staff the entrance door to the EOC at all times
- Provide those working in the EOC with Identification cards (e.g., clipped to their shirts / chains around neck) to identify them as being a part of the Regional EOC response
- Refer all media inquiries to Media Relations
- Verify the identity of everyone entering the EOC and record those persons on the Visitor Log
- Maintain a list of authorized personnel attending the emergency site
- Notify the Security person at the Emergency Site of all persons authorized to attend the site

Regional EOC Resource Mobilization

The Regional Mobilization Role coordinates the movement to the site of equipment and materials, assembles and activates the relevant Mutual Aid agreements. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Assemble and activate any relevant Mutual Aid agreements
- Coordinate the movement of personnel, material and equipment to site with the Resources contact at site
- Advise the Resources contact at site of any changes in resource availability or scheduled arrival
- Advise suppliers of any changes in the requirement for particular resources, or changes to the schedule of arrival at site

- Track hours worked by personnel at the EOC and at the site
- Advise the Regional EOC Manager (QI) of anticipated needs for relief personnel, etc.
- Setup work order structure to collect costs and prepare reports

Regional EOC Environmental / Technical

The Regional EOC Environmental / Technical role is to provide support and technical expertise to personnel at site. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Provide specific technical expertise such as environmental, water management etc., depending on the nature of the emergency, to contain and control hazards
- Provide support to Environmental / Technical personnel at site
- Coordinate with Resources personnel in the EOC, identifying and mobilizing environmental resources to the site and other technical support as required
- Coordinate work with the Operations Control Center

Regional EOC Media Contact

The Regional EOC Media Contact responds to any media located at EOC and provides support to Media Contact working at the Command Post. Corporate Media Training is required for this position. Specific responsibilities include but are not limited to:

- Document all actions using the Media Contact Log and forward completed logs to documentation personnel in the EOC
- Document all requests for additional information on the Media Contact Log and forward to Corporate Communications
- Advise the media that Communications will respond as soon as possible to their inquiries
- Log all phone and personal contacts with media using Media Contact Log and provide to Corporate Communications
- Serve as media contact until advised of a Corporate Communications or Community Representative name and contact number off-site to which all media inquiries can be directed
- Ensure all telephone media inquiries go to Corporate Communications
- Maintain contact with Command Post Media Contact for regular factual updates, if no corporate media relations representative is in place
- Ensure Media representatives are not allowed into the EOC
- Provide factual updates to Media representatives, only when a corporate media relations representative is not in place

Regional EOC Documentation

The Regional EOC Documentation role consolidates information for electronic distribution, gathers and files all paper documentation. Specific responsibilities include but are not limited to:

- Prepare status reports for distribution on an electronic medium using information provided from EOC personnel logs
- Edit and consolidate the log information using the following general guidelines:
  - Major events and responses
  - Summary of actions taken by personnel
  - What is happening?
  - Who is involved?
  - Are there injuries?

- Is the public at risk?
- Where is the emergency?
- What is the magnitude of the situation?
- What has been done, so far?
- Obtain approval for status report from the Regional EOC Manager (QI) before sending

- Ensure all written instructions, logs, reports, telephone logs and related documentation are recorded and filed

Regional EOC Community Evacuation Leader

The Regional EOC Community Evacuation Leader coordinates and implements any resident notifications for evacuations. Specific responsibilities include but are not limited to:

- Document all conversations and activities using the Emergency Incident Log
- Determine whether residents should be initially alerted or evacuated (in consultation with the Regional EOC Manager (QI) and local Emergency Services
- Have available information on municipal evacuation centers and evacuee care should evacuation seem likely
- For evacuations:

  - Determine the priority for contacting the public taking into account the incident, the potential for the situation to deteriorate, weather conditions and potential sensitivities of neighbors
  - Determine best method of contacting the public (phone, personal visits or through municipal authority)
  - After contacting the public, initiate and coordinate the ongoing communications with neighbors and the public outside of the emergency awareness zone who may have been impacted by the incident

Regional EOC Administrative Support

The Regional EOC Administrative Support person provides general support to all Regional EOC personnel. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Support all EOC personnel as required
- Record time, date and name of each person notified on the Emergency Incident Log
- Word-processing
- Telephones, faxing, etc
- Assist with gathering and distributing information

4.2.4 Emergency Site Manager (QI)

The Emergency Site Manager (QI) coordinates and manages all aspects of emergency operations including site security, site access, containment, control point selection, recovery and clean-up operations.

The Emergency Site Manager (QI) in conjunction with the Regional EOC Manager (QI) determines the amount of resources within the Command Post. Not all roles will be activated, or others may be added, in any given spill. Furthermore, one person may take on several roles, and conversely one role may take several people.

Specific responsibilities in priority include but are not limited to:

- Establish emergency organization (command post), assign and brief personnel on key tasks
- Ensure that all parties can clearly identify the Keystone Emergency Site Manager (QI)
- Assign the Documentation Role and determine what other roles are required
- Maintain primary contact with the Federal On Scene Coordinator (FOSC)
- Conduct an Emergency Incident Assessment, based on the information available about the incident, and identify priority issues and objectives
- Determine manpower and equipment resources required, based on the nature of the spill
- Notify and maintain contact with local emergency response agencies (e.g., police, fire, ambulance, government, etc.) and citizens or landowners immediately affected by incident
- Notify Regional EOC Manager (QI) regarding incident status and maintain contact, as required, throughout incident
- Assume duties and responsibilities related to the incident which have not been assigned to other emergency personnel
- Ensure documentation is kept related to incident costs, product recovery and a log of incident activities
- Anticipate potential changes to the incident, and identify any additional resources required (e.g., additional equipment or supplies, relief or back-up personnel, lighting for night operations, etc.)
- Work in conjunction with emergency response personnel and municipal authorities at the scene
- Determine when the emergency is over in consultation with the Corporate EOC Manager and the Regional EOC Manager (QI)

4.2.5 Command Post

Site Security

Security is responsible to secure the scene, preserve evidence, and prevent theft.

Site security should be established and routes into the site should be sealed to prevent unauthorized access, and protect the safety of the public. Site security personnel may be Company personnel, hired contractors or local police authorities who assist in the incident. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Maintain and monitor a security perimeter established around the site
- Ensure the protection of equipment or supplies stored at the site
- Preserve and protect evidence related to the incident for investigation and follow-up
- Check-in of authorized personnel coming into the site
- Convey necessary information to authorized personnel entering the site
- Post signs, warnings or barricades on-site
- Supervise the contract security personnel
- Identify yourself as Keystone's Site Security to any Fire, Police, or Ambulance personnel at the scene
- Refer all media inquiries to the Media Contact person
- Staff the entry point at all times with a minimum of two people
- Record all personnel entering the emergency site using Visitor Log
- Restrict entry to the site to authorized persons only

- Once the perimeter is secure preserve any items (evidence) which you feel may be used in investigations of the emergency
- Photograph the area where any items are located prior to moving if area must be disturbed
- Prevent unauthorized persons from examining or photographing evidence items
- Cover the evidence items with plastic, tarps, cardboard, plywood, etc. to prevent damage if weather is inclement

Resource Mobilization

The Resource Mobilization person determines requirements for personnel, equipment and materials. This position also records hours worked by personnel on site and provides this information to the Regional EOC Resources contact as well as the Emergency Site Manager (QI). Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Serve as the "single window" contact at the site for all personnel requiring resources (e.g., safety equipment, technical supplies)
- Advise the Emergency Site Manager (QI) immediately of any cancellations or schedule changes
- Advise the Resources contact in the Regional EOC of any changes in the need for resources, or in the mobilization schedule

Staging Leader

The Staging Leader locates a suitable staging area, upwind from the emergency site and ensures the orderly deployment of equipment to the site. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Document all resources entering or leaving staging area using the Emergency Incident Log
- Direct resources to proper locations
- Work closely with the Regional EOC Resources contact to ensure accurate information about the type, quantity, and arrival times of resources to the staging area
- Communicate to the Regional EOC Resources contact any difficulties, delays, etc. in supplying resources to the scene from the Staging Area

Environmental / Technical

The Environmental / Technical Roles work with the Regional EOC Environmental / Technical persons and provide technical expertise needed to contain and control hazards. This will require various areas of expertise depending on the type of emergency event being managed. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Provide specific technical expertise such as environmental, water management etc., depending on the nature of the emergency, to contain and control hazards
- Conduct an environmental assessment to identify potential environmental issues or concerns, through review of environmental sensitivity information, site reconnaissance, and liaison with government officials
- Identify short term and long term environmental issues and recommend appropriate environmental procedures to the Emergency Site Manager (QI) for minimizing or mitigating environmental impacts at the site
- Coordinate environmental sampling, protection and clean-up efforts

- Advise Keystone personnel and contractors on environmental concerns or constraints related to site activities
- Coordinate post emergency site assessment and development of a site specific remediation plan
- Evaluate technical resources requirements and advise Resource Role of requirements

Safety

The Safety Role ensures safety of personnel, and use of safe practices on site. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Ensure the site is initially inspected and monitored to ensure it is safe for workers, based on the product hazards involved and site conditions
- Monitor the safety of personnel at the emergency site by ensuring safe work practices are being followed and safety precautions are being taken
- Prepare and implement the site safety/evacuation plan for the site
- Identify the nearest medical facilities and transport method
- Ensure all personnel receive a site safety orientation identifying hazards and control measures including a product hazard briefing, prior to undertaking any emergency response activity
- Ensure all new contractors (i.e., contractors who have not worked for the company before, and are unfamiliar with company safety procedures), have completed the Contractor Safety Orientation and have a valid confirmation card
- Ensure proper safety equipment is available for workers and is used in a proper manner
- Ensure site monitoring is continued on a regular basis
- Ensure safety precautions are in place to protect the public
- Evaluate site safety operations on a continuous basis, and report concerns or recommendations to the Emergency Site Manager (QI)

Media Contact

The Media Contact responds to various media questions and ensures the safety of all media personnel. Completion of Media training is a requirement of this position. Specific responsibilities include but are not limited to:

- Document all actions using the Emergency Incident Log
- Gather media personnel in a single location at a safe, reasonable distance from the emergency site
- Work with the media until Keystone's media specialist arrives
- Maintain contact with Communications in the Corporate EOC to determine what is to be released to media
- Maintain a list of all media personnel on site using Media Contact Log
- Log all questions and requests for information from media using the Media Contact Log
- Maintain contact with Media Contact in the Regional Emergency Operations Center and provide regular factual updates
- Clear all requests for photo opportunities through the Emergency Site Manager (QI)

Documentation

The Documentation person works directly with the Emergency Site Manager (QI) and documents all activities on site. Specific responsibilities include but are not limited to:

- Document all actions of the Emergency Site Manager (QI), using the Emergency Incident Log
- Provide direct support to the Emergency Site Manager (QI)
- Log and handle all communications for the Emergency Site Manager (QI), as requested

Community Evacuation Coordinator

The Community Evacuation Coordinator works with the Regional EOC Community Evacuation Leader and the local authorities with evacuation at or near the emergency site. Specific responsibilities include but are not limited to:

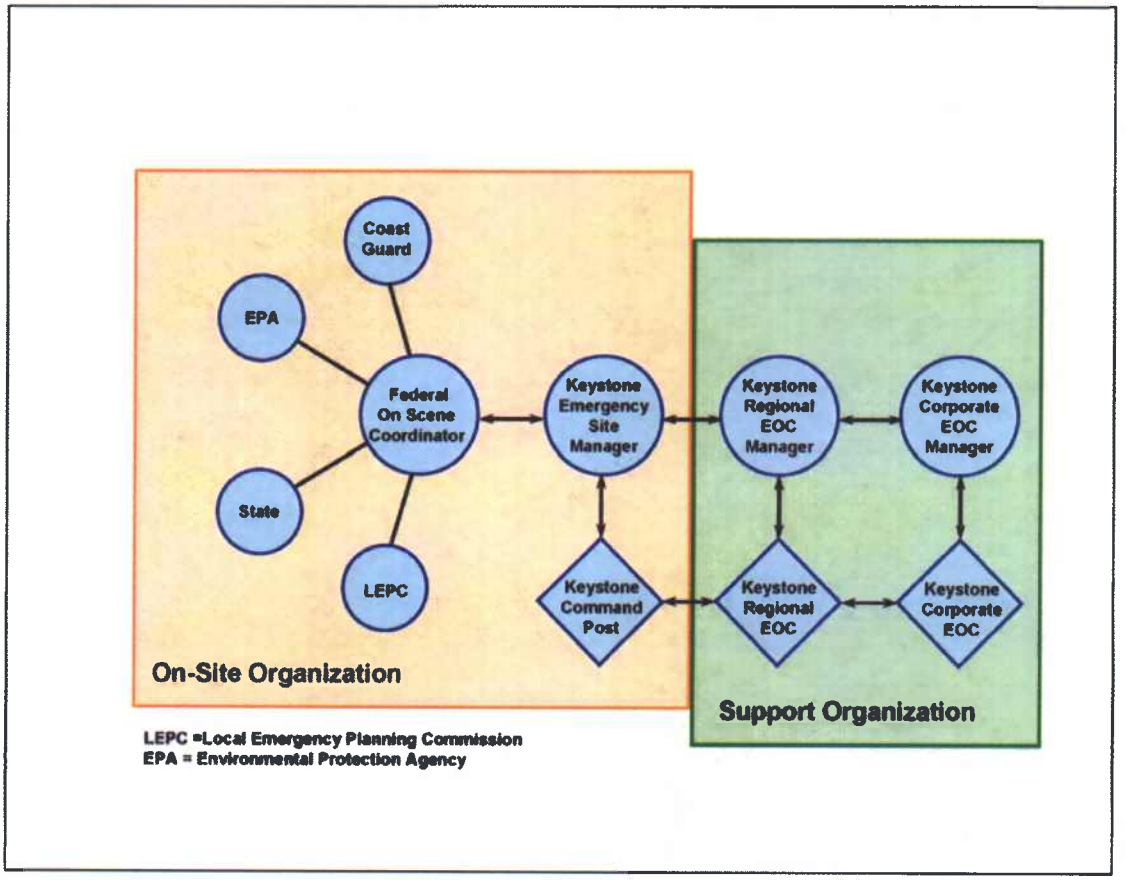
- Document all actions using the Emergency Incident Log
- Keep the Evacuation Leader at the Regional EOC informed of the evacuation center status and issues
- Work with local authorities who are managing the evacuation and evacuation center(s)
- Obtain a record of the evacuees' arrival at the designated evacuation center
- Keep the Regional EOC Evacuation Leader briefed on the status of the arrival of evacuees at the center
- In conjunction with Community Relations, provide information to the evacuees on the status of the incident
- Ensure there is a record kept of temporary destinations when evacuees leave the center
- Do not put yourself at risk

4.3 Federal On-Scene Coordinator Coordination Process

The Emergency Site Manager (QI) is the primary contact for the Federal On Scene Coordinator (FOSC). The FOSC is the lead agency and is responsible for monitoring and directing activities related to the spill.

A flow diagram outlining the action and communication paths under a Unified Command structure to be utilized in oil spill response is shown in Figure 4.

Figure 4: Basic Unified Command Structure



5.0 LIST OF CONTACTS

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized, State and Local requirements and contacts along with contract resources and contacts have been determined.

5.1 Qualified Individuals for Each Response Zone

Table 7: Contact Information for Qualified Individuals

Position	**Regional EOC Manager (QI)**
Name	
Address	
Telephone	Secondary Telephone
Position	**Alternate Regional EOC Manager**
Name	
Address	
Telephone	Secondary Telephone
Position	**Emergency Site Manager (QI)**
Name	
Address	
Telephone	Secondary Telephone
Position	**Alternate Emergency Site Manager**
Name	
Address	
Telephone	Secondary Telephone

5.2 Agency Contacts

Table 8: Agency Contacts

Agency/Company	Contact	Telephone Numbers
Federal		
National Response Center		800-424-8802
State		
Local		

5.3 Corporate Financial Contact for each Response Zone

Table 9: Corporate Financial (Insurance)

Name	Company	Telephone Numbers

5.4 Oil Spill Response Organizations and Contractors, Services and Resources

Table 10: OSRO Contacts

OSRO/Contractor	Contractor Responsibility	Resource Capability for First 7 Days	Quantity of Equipment or Service Available
Name:			
24 Hour Contact No.:			
Address:			
Response Time:			

5.5 Oil Transportation and Reclamation Facilities and Services

Table 11: Oil Transportation and Reclamation Facilities

Contractor	Service Provided	Capacity	Availability
Name:			
24 Hour Contact No.:			
Address:			

6.0 TRAINING PROCEDURES

The requirements listed identify specialized training for individuals prior to taking on responsibilities under the Oil Spill Response Plan.

6.1 On Site Personnel

Table 12: Training Requirements – On Site Personnel

Position	Specialized Training to Meet Oil Spill Response Duties
First Responders	○ HAZWOPER Training to Hazmat Technician Level 3 with annual refresher as required ○ Keystone Emergency Management System (EMS) training ○ National Fire Protection Association (NFPA) training
Emergency Site Manager – Qualified Individual	○ HAZWOPER Training to Hazmat Level 4 Specialist with annual refresher as required ○ Incident Command System (ICS) Communication training ○ Keystone Emergency Management System (EMS) training ○ National Fire Protection Association (NFPA) training
Command Post Media	○ Keystone Emergency Management System (EMS) training ○ Keystone Media Relations training
Command Post Safety	○ Keystone Emergency Management System (EMS) training ○ Advanced safety related training
Command Post Documentation	○ Keystone Emergency Management System (EMS) training
Command Post Site Security	
Command Post Resource Mobilization	
Command Post Technical	
Command Post Staging Leader	
Command Post Evacuation Coordinator	

6.2 Regional EOC

Table 13: Training Requirements - Regional EOC

Position	Specialized Training to Meet Oil Spill Response Duties
Regional EOC Manager – Qualified Individual	o HAZWOPER Training to the Level of Hazardous Materials Specialist with annual refresher as required o Incident Command System (ICS) training o Keystone Emergency Management System (EMS) training
Regional EOC Media Contact	o Keystone Emergency Management System (EMS) training o Keystone Media Relations training
Regional EOC Communications	o Keystone Emergency Management System (EMS) training
Regional EOC Documentation	
Regional EOC Security	
Regional EOC Technical	
Regional EOC Resource Mobilization	
Regional EOC Community Evacuation Leader	
Regional EOC Administration Support	

6.3 Training Records

Keystone will utilize an electronic system to track and maintain records of training, including refresher training, for all employees. The system will be located at Keystone's head office.

Contractors are responsible for maintaining all training records for their employees. Periodic audits will be conducted by Keystone, to ensure contractors training records comply with emergency training requirements. Audit documentation will be retained in Keystone's files.

7.0 EXERCISE PROCEDURES

Keystone's exercise program is designed to meet the exercise requirements as outlined in the National Preparedness for Response Exercise Program (PREP) Guidelines developed by the U.S. Coast Guard and adopted by the Pipeline and Hazardous Materials Safety Administration (PHMSA), the Minerals Management Service (MMS), and the U.S. Environmental Protection Agency (EPA). Participation in this program ensures that the Company meets all federal exercise requirements mandated by OPA '90.

The primary elements of the exercise program are notification exercises, table top exercises, Company owned equipment deployment exercises, contractor exercises, unannounced exercises by government agencies and area-wide exercises up to and including actual field drills conducted by industry and the government agencies.

Keystone will ensure that operating personnel participate in exercises or responses on an annual basis in order to ensure they remain trained and qualified to operate the equipment in the operating environment and to ensure the Oil Spill Response Plans are effective, if ever needed. However, personnel and equipment that are assigned to multiple Response Zones will participate in only one deployment exercise per year.

The exercise year for all Company facilities will be from January 1 to December 31.

In addition to the exercise program as outlined in Table 14, Keystone will also participate in both unannounced Federal Agency led exercises and Area exercises when requested.

Table 14: Exercise Program Type and Frequency

Exercise Type (for each Response Zone)	Exercises Conducted in Triennial Cycle
Qualified Individual Notification Exercises (one per year to be conducted during non-business hours)	12
Spill Management Team Tabletop Exercises (one must involve a worst case discharge scenario)	3
Equipment Deployment Exercises (using either internal and/or external)	3
Unannounced Exercise (any of the above Exercises, with the exception to the Qualified Individual Notification Exercise, if conducted unannounced, satisfy this requirement)	3

The terms referenced in the above Table are defined as follows:

- Tabletop exercise is an exercise of the response plan and the spill management team's response efforts without the actual deployment of equipment.
- Spill management team is the group of personnel identified to staff the appropriate organizational structure to manage spill response implementation in accordance with the response plan.

- Internal exercises are those that are conducted wholly within the plan holder's organization. Internal exercises include personnel such as the qualified individual and those affiliated with the plan holder's spill management team, including OSRO's. The internal exercises do not involve other members of the response community.

- External exercises are those that extended beyond the internal focus of the plan holder's organization, and involve other members of the response community. The external exercises are designed to examine the response plan and the plan holder's ability to coordinate with the response community to conduct an effective response to an incident.

7.1 Debriefing and Documentation

At the conclusion of an actual spill event or a field exercise, a debriefing will be conducted to evaluate the response, local procedures and the overall Emergency Management System (EMS). All company personnel involved in responding, managing, or performing a support function during an actual spill event or exercise will participate in their respective debriefing. This debriefing should take place the same day or as soon as practical thereafter. At the discretion of the Regional EOC Manager (QI), and when appropriate, debriefing sessions will be organized as follows:

- Internal Debriefings are to discuss all aspects of Keystone's emergency preparedness and response.
- External debriefings are designed to discuss only those aspects related to Keystone and agency interaction with respect to communications.
- Media debriefings will be held separately from all other debriefings. Media debriefings will focus on Keystone's interaction with the media.

Representatives from each of the debriefing sessions will then meet to discuss the results of their session and combine information, presenting a complete review of the event. When appropriate, the information derived from these debriefing sessions will be incorporated into the Oil Spill Response Plan.

Lists of exercises conducted, the objectives met, and the results of the debriefing sessions identified above will be documented. This documentation will be in writing and signed by the individual having responsibility for the facility conducting the exercise. All spill response exercise documentation records will be maintained on file at the facility for a minimum of five years.

8.0 RESPONSE PLAN REVIEW AND UPDATE PROCEDURES

All sections of the Oil Spill Response Plan will be reviewed at least annually and revised as required by the Keystone Emergency Management Specialist, or as required, based on new data, additions and modifications to the pipeline system or new government regulatory requirements.

Revisions will incorporate recommendations from training drills or actual spills, industry research into spill countermeasures, new equipment information and updated emergency contact information.

In the event of a worst case discharge, the response will be reviewed and assessed against the Oil Spill Response Plan to evaluate and record the Plan's effectiveness.

The Oil Spill Response Plan will be resubmitted every 5 years from the date of last submission in accordance with 49CFR§194.121, for the areas of the pipeline that have been designated as potentially causing significant and substantial harm.

If a new or different operating condition or information would substantially affect the implementation of the Response Plan, Keystone will immediately modify its Response Plan to address such a change and resubmit to the Pipeline and Hazardous Material Safety Administration (PHMSA) within 30 days of making the change.

9.0 RESPONSE ZONE ONE APPENDIX

9.1 Information Summary

Response Area Location	Milepost (MP) = 0 at Canadian Border to MP = 535 in mid-Nebraska, south end of Colfax County
State	**North Dakota** (MP 0 to ≈ MP 215)
Counties	Pembina, Cavalier, Walsh, Nelson, Steele, Barnes, Ransom, and Sargent
State	**South Dakota** (MP 215 to ≈ MP 431)
Counties	Marshall, Day, Clark, Beadle, Kingsbury, Miner, Hanson, McCook, Hutchinson, and Yankton
State	**Nebraska** (MP 431 to ≈ MP 535)
Counties	Cedar, Wayne, Stanton, Platte, Colfax
Owner	Keystone
Emergency Telephone	1 (XXX) XXX-XXXX
Owner Location (Street)	450 - 1st Street SW
City: Calgary	Province: Alberta Postal Code: T2P 5H1

9.2 Qualified Individuals

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized.

Position	**Regional EOC Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Alternate Regional EOC Manager**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Emergency Site Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Alternate Emergency Site Manager**
Name	
Address	
Emergency Telephone	Secondary Telephone

9.3 Determination of Harm

The operator expects that Response Zone One will meet the "significant and substantial" harm criteria due to the proximity of high consequence areas. However, a final determination is reserved pending completion of the design details required to perform the analysis. For the purposes of this preliminary document, Keystone has assumed the aforementioned criteria will be met.

9.4 Notification Procedures

The Regional EOC Manager (QI) is the key individual responsible for evaluating and activating the Oil Spill Response.

9.4.1 Prioritized Notification Checklist for Key Individuals

First Responder

- ☐ Notification of potential spill and dispatch received from OCC
- ☐ SPILL VERIFIED
- ☐ Notification of Emergency Services, if required

  Verify with OCC:
  - ☐ Pipeline shutdown and status
  - ☐ Pipeline segment isolation
- ☐ Regional EOC Manager (QI) notified

Regional EOC Manager (QI)

- ☐ Notification received from OCC
- ☐ Notification of spill details received from First Responder
- ☐ OIL SPILL RESPONSE PLAN ACTIVATED
- ☐ Emergency Site Manager (QI) notified
- ☐ Regional EOC activated
- ☐ Mobilize response resources requested by Emergency Site Manager (QI)
- ☐ Corporate EOC Manager contacted
- ☐ Agency contacts initiated as per Section 2.3

Emergency Site Manager (QI)

- ☐ Notification received from Regional EOC Manager (QI)
- ☐ On site First Responder contacted to obtain briefing on spill
- ☐ On Site Command Post activated
- ☐ Regional EOC advised of resource requirements
- ☐ First Responder relieved

9.4.2 Notification Contacts

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized and State and Local requirements and contacts have been determined.

Keystone

Table 15: Response Zone One Keystone Notification

Position Making Call	Keystone Contacts	Primary Telephone No.	Secondary Telephone No.
OCC	**First Responder**		
	Regional EOC Manager (QI)		
	- Primary		
	- Alternate		
	Corporate EOC		
Regional EOC Manager (QI)	**Emergency Site Manager (QI)**		
	- Primary		
	- Alternate		
	Corporate EOC Manager		

Agency

Table 16: Response Zone One Agency Notification

Position Making Call	Agency Contact List	Telephone	Other Telephone/Fax
Regional EOC Manager (QI)	**Federal**		
	National Response Center	1-800-424-8802	
	State		
	Local		

Emergency Services

Table 17: Response Zone One Emergency Services Notification

Position Making Call	Emergency Contact List	Telephone	Other Telephone/Fax
Emergency Site Manager (QI)	Emergency Services		
	Fire/Ambulance		
	Police/Sheriff		
	Hospital		

9.4.3 Information Reported to Agencies

Communication Report (Call) Record

Regional EOC Manager (QI)

The following agency mandatory information, ***as identified in bold italic***, will be provided initially with subsequent notifications to complete the required mandatory criteria or advise of any changes.

Name of Pipeline: _____

Time of Discharge: _____

Location of Discharge (MP): _____

(GPS): _____

Type of Oil: _____

Reason of Discharge: _____

Estimated Volume of Oil Spill: _____

Weather Condition on Scene: _____

Action taken/ Planned by Person on Scene: _____

Injuries: _____

Extent of Injuries: _____

Evacuation: _____

Public Consequence: _____

9.5 Spill Detection and Mitigation Procedures

Response Zone specific procedures will be identified and described following completion of the necessary design details.

9.6 Oil Spill Response Organizations and Contractors, Services and Resources

The contact lists below are currently incomplete and will be updated as Keystone identifies contract resources and contact information.

Table 18: Response Zone One OSRO Contacts

OSRO/Contractor	Contractor Responsibility	Resource Capability for First 7 Days	Quantity of Equipment or Service Available
Name:			
24 Hour Contact No.:			
Address:			
Response Time:			

9.7 Oil Transportation and Reclamation Facilities and Services

The contact lists below are currently incomplete and will be updated as Keystone identifies contract resources and contact information.

Table 19: Response Zone One Oil Transportation and Reclamation Facilities

Contractor	Service Provided	Capacity	Availability
Name:			
24 Hour Contact No.:			
Address:			

9.8 Type of Oil, Volume and Calculation Method for Worst Case Discharge Volume

Pending completion of the necessary engineering design details a worst case discharge calculation will be undertaken.

Keystone expects to transport crude oils in the range of 12 to 45° API.

9.9 Maps and Drawings

9.9.1 Location of Worst Case Discharge

Pending completion of engineering design details this information will be provided.

9.9.2 Location of Potentially affected Public Drinking Water Intakes

Pending completion of engineering design details this information will be provided.

9.9.3 Potentially affected environmentally sensitive areas

Pending completion of engineering design details this information will be provided.

9.9.4 Control Points and access descriptions

Pending completion of engineering design details this information will be provided.

9.10 Piping Diagram and Plan Profile

Pending completion of engineering design details this information will be provided.

10.0 RESPONSE ZONE TWO APPENDIX

10.1 Information Summary

Response Area Location	(MP) = MP 535 to MP 634 and Cushing Extension (CE), CE MP 0 to CE MP 291
State	**Nebraska** (MP 535 to ≈ MP 634) and Cushing Extension (CE) MP 0 to ≈ MP 4
Counties	Butler, Seward, Saline and Jefferson
State	**Kansas** (CE MP 4 to ≈ CE MP 212)
Counties	Washington, Clay, Dickinson, Marion, Butler, and Cowley
State	**Oklahoma** (CE MP 212 to ≈ CE MP 291)
Counties	Kay, Noble, and Payne
Owner	Keystone
Emergency Telephone	1 (XXX) XXX-XXXX
Owner Location (Street)	450 - 1st Street SW
City: Calgary	Province: Alberta Postal Code: T2P 5H1

10.2 Qualified Individuals

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized.

Position	**Regional EOC Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Alternate Regional EOC Manager**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Emergency Site Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Alternate Emergency Site Manager**
Name	
Address	
Emergency Telephone	Secondary Telephone

10.3 Determination of Harm

The operator expects that Response Zone Two will meet the "significant and substantial" harm criteria due to the proximity of high consequence areas. However, a final determination is reserved pending completion of the design details required to perform the analysis. For the purposes of this preliminary document, Keystone has assumed the aforementioned criteria will be met.

10.4 Notification Procedures

The Regional EOC Manager (QI) is the key individual responsible for evaluating and activating the Oil Spill Response.

10.4.1 Prioritized Notification Checklist for Key Individuals

First Responder

- ☐ Notification of potential spill and dispatch received from OCC
- ☐ SPILL VERIFIED
- ☐ Notification of Emergency Services, if required

  Verify with OCC:
  - ☐ Pipeline shutdown and status
  - ☐ Pipeline segment isolation
- ☐ Regional EOC Manager (QI) notified

Regional EOC Manager (QI)

- ☐ Notification received from OCC
- ☐ Notification of spill details received from First Responder
- ☐ OIL SPILL RESPONSE PLAN ACTIVATED
- ☐ Emergency Site Manager (QI) notified
- ☐ Regional EOC activated
- ☐ Mobilize response resources requested by Emergency Site Manager (QI)
- ☐ Corporate EOC Manager contacted
- ☐ Agency contacts initiated as per Section 2.3

Emergency Site Manager (QI)

- ☐ Notification received from Regional EOC Manager (QI)
- ☐ On site First Responder contacted to obtain briefing on spill
- ☐ On Site Command Post activated
- ☐ Regional EOC advised of resource requirements
- ☐ First Responder relieved

10.4.2 Notification Contacts

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized and State and Local requirements and contacts have been determined.

Keystone

Table 20: Response Zone Two Keystone Notification

Position Making Call	Keystone Contacts	Primary Telephone No.	Secondary Telephone No.
OCC	**First Responder**		
	Regional EOC Manager (QI)		
	- Primary		
	- Alternate		
	Corporate EOC		
Regional EOC Manager (QI)	**Emergency Site Manager (QI)**		
	- Primary		
	- Alternate		
	Corporate EOC Manager		

Agency

Table 21: Response Zone Two Agency Notification

Position Making Call	Agency Contact List	Telephone	Other Telephone/Fax
Regional EOC Manager (QI)	**Federal**		
	National Response Center	1-800-424-8802	
	State		
	Local		

Emergency Services

Table 22: Response Zone Two Emergency Services Notification

Position Making Call	Emergency Contact List	Telephone	Other Telephone/Fax
Emergency Site Manager (QI)	Emergency Services		
	Fire/Ambulance		
	Police/Sheriff		
	Hospital		

10.4.3 Information Reported to Agencies

Communication Report (Call) Record

Regional EOC Manager (QI)

The following agency mandatory information, ***as identified in bold italic***, will be provided initially with subsequent notifications to complete the required mandatory criteria or advise of any changes.

Name of Pipeline: _____

Time of Discharge: _____

Location of Discharge (MP): _____

(GPS): _____

Type of Oil: _____

Reason of Discharge: _____

Estimated Volume of Oil Spill: _____

Weather Condition on Scene: _____

Action taken/ Planned by Person on Scene: _____

Injuries: _____

Extent of Injuries: _____

Evacuation: _____

Public Consequence: _____

10.5 Spill Detection and Mitigation Procedures

Response Zone specific procedures will be identified and described following completion of the necessary design details.

10.6 Oil Spill Response Organizations and Contractors, Services and Resources

The contact lists below are currently incomplete and will be updated as Keystone identifies contract resources and contact information.

Table 23: Response Zone Two OSRO Contacts

OSRO/Contractor	Contractor Responsibility	Resource Capability for First 7 Days	Quantity of Equipment or Service Available
Name:			
24 Hour Contact No.:			
Address:			
Response Time:			

10.7 Oil Transportation and Reclamation Facilities and Services

The contact lists below are currently incomplete and will be updated as Keystone identifies contract resources and contact information.

Table 24: Response Zone Two Oil Transportation and Reclamation Facilities

Contractor	Service Provided	Capacity	Availability
Name:			
24 Hour Contact No.:			
Address:			

10.8 Type of Oil, Volume and Calculation Method for Worst Case Discharge Volume

Pending completion of the necessary engineering design details a worst case discharge calculation will be undertaken.

Keystone expects to transport crude oils in the range of 12 to 45° API.

10.9 Maps and Drawings

10.9.1 Location of Worst Case Discharge

Pending completion of engineering design details this information will be provided.

10.9.2 Location of Potentially affected Public Drinking Water Intakes

Pending completion of engineering design details this information will be provided.

10.9.3 Potentially affected environmentally sensitive areas

Pending completion of engineering design details this information will be provided.

10.9.4 Control Points and access descriptions

Pending completion of engineering design details this information will be provided.

10.10 Piping Diagram and Plan Profile

Pending completion of engineering design details this information will be provided.

11.0 RESPONSE ZONE THREE APPENDIX

11.1 Information Summary

Response Area Location	Milepost (MP) = MP 634 to MP 1073
State	**Nebraska** (MP 634 to ≈ MP 649)
Counties	Jefferson, Gage
State	**Kansas** (MP 649 to ≈ MP 743)
Counties	Marshall, Nemaha, Brown, and Doniphan
State	**Missouri** (MP 743 to ≈ MP 1016)
Counties	Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, and St. Charles
State	**Illinois** (MP 1016 to ≈ MP 1073
Counties	Madison, Bond, Fayette, and Marion
Owner	Keystone
Emergency Telephone	1 (XXX) XXX-XXXX
Owner Location (Street)	450 - 1st Street SW
City: Calgary	Province: Alberta Postal Code: T2P 5H1

11.2 Qualified Individuals

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized.

Position	**Regional EOC Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Alternate Regional EOC Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Emergency Site Manager (QI)**
Name	
Address	
Emergency Telephone	Secondary Telephone
Position	**Alternate Emergency Site Manager**
Name	
Address	
Emergency Telephone	Secondary Telephone

11.3 Determination of Harm

The operator expects that Response Zone Three will meet the "significant and substantial" harm criteria due to the proximity of high consequence areas. However, a final determination is reserved pending completion of the design details required to perform the analysis. For the purposes of this preliminary document, Keystone has assumed the aforementioned criteria will be met.

11.4 Notification Procedures

The Regional EOC Manager (QI) is the key individual responsible for evaluating and activating the Oil Spill Response.

11.4.1 Prioritized Notification Checklist for Key Individuals

First Responder

- ❑ Notification of potential spill and dispatch received from OCC
- ❑ SPILL VERIFIED
- ❑ Notification of Emergency Services, if required

  Verify with OCC:
  - ❑ Pipeline shutdown and status
  - ❑ Pipeline segment isolation
- ❑ Regional EOC Manager (QI) notified

Regional EOC Manager (QI)

- ❑ Notification received from OCC
- ❑ Notification of spill details received from First Responder
- ❑ OIL SPILL RESPONSE PLAN ACTIVATED
- ❑ Emergency Site Manager (QI) notified
- ❑ Regional EOC activated
- ❑ Mobilize response resources requested by Emergency Site Manager (QI)
- ❑ Corporate EOC Manager contacted
- ❑ Agency contacts initiated as per Section 2.3

Emergency Site Manager (QI)

- ❑ Notification received from Regional EOC Manager (QI)
- ❑ On site First Responder contacted to obtain briefing on spill
- ❑ On Site Command Post activated
- ❑ Regional EOC advised of resource requirements
- ❑ First Responder relieved

11.4.2 Notification Contacts

The contact list is currently incomplete but identifies the key contact positions required for activation of the Oil Spill Response Plan. Specific data fields will be completed when Keystone's personnel organization structure is finalized and State and Local requirements and contacts have been determined.

Keystone

Table 25: Response Zone Three Keystone Notification

Position Making Call	Keystone Contacts	Primary Telephone No.	Secondary Telephone No.
OCC	**First Responder**		
	Regional EOC Manager (QI)		
	- Primary		
	- Alternate		
	Corporate EOC		
Regional EOC Manager (QI)	**Emergency Site Manager (QI)**		
	- Primary		
	- Alternate		
	Corporate EOC Manager		

Agency

Table 26: Response Zone Three Agency Notification

Position Making Call	Agency Contact List	Telephone	Other Telephone/Fax
Regional EOC Manager (QI)	**Federal**		
	National Response Center	1-800-424-8802	
	State		
	Local		

Emergency Services

Table 27: Response Zone Three Emergency Services Notification

Position Making Call	Emergency Contact List	Telephone	Other Telephone/Fax
Emergency Site Manager (QI)	Emergency Services		
	Fire/Ambulance		
	Police/Sheriff		
	Hospital		

Information Reported to Agencies

Communication Report (Call) Record

Regional EOC Manager (QI)

The following agency mandatory information, ***as identified in bold italic***, will be provided initially with subsequent notifications to complete the required mandatory criteria or advise of any changes.

Name of Pipeline: _____

Time of Discharge: _____

Location of Discharge (MP): _____

(GPS): _____

Type of Oil: _____

Reason of Discharge: _____

Estimated Volume of Oil Spill: _____

Weather Condition on Scene: _____

Action taken/ Planned by Person on Scene: _____

Injuries: _____

Extent of Injuries: _____

Evacuation: _____

Public Consequence: _____

11.5 Spill Detection and Mitigation Procedures

Response Zone specific procedures will be identified and described following completion of the necessary design details.

11.6 Oil Spill Response Organizations and Contractors, Services and Resources

The contact lists below are currently incomplete and will be updated as Keystone identifies contract resources and contact information.

Table 28: Response Zone Three OSRO Contacts

OSRO/Contractor	Contractor Responsibility	Resource Capability for First 7 Days	Quantity of Equipment or Service Available
Name:			
24 Hour Contact No.:			
Address:			
Response Time:			

11.7 Oil Transportation and Reclamation Facilities and Services

The contact lists below are currently incomplete and will be updated as Keystone identifies contract resources and contact information.

Table 29: Response Zone Three Oil Transportation and Reclamation Facilities

Contractor	Service Provided	Capacity	Availability
Name:			
24 Hour Contact No.:			
Address:			

11.8 Type of Oil, Volume and Calculation Method for Worst Case Discharge Volume

Pending completion of the necessary engineering design details a worst case discharge calculation will be undertaken.

Keystone expects to transport crude oils in the range of 12 to 45° API.

11.9 Maps and Drawings

11.9.1 Location of Worst Case Discharge

Pending completion of engineering design details this information will be provided.

11.9.2 Location of Potentially affected Public Drinking Water Intakes

Pending completion of engineering design details this information will be provided.

11.9.3 Potentially affected environmentally sensitive areas

Pending completion of engineering design details this information will be provided.

11.9.4 Control Points and access descriptions

Pending completion of engineering design details this information will be provided.

11.10 Piping Diagram and Plan Profile

Pending completion of engineering design details this information will be provided.