

## CHAPTER 5

# MITIGATION MEASURES

This chapter presents NDEQ's overall approach to mitigation for the proposed Nebraska Reroute and the major plans from which mitigation commitments have been identified to date. It also presents mitigation Keystone has committed to resulting from NDEQ relating Nebraskans' concerns.

In addition to identifying and characterizing resources and potential impacts on resources, Chapter 4, Affected Environment and Environmental Consequences, of this Final Evaluation Report includes discussion of mitigation for potential impacts. Many of the mitigation and project impacts discussed in Chapter 4 are derived from Keystone's Construction Mitigation and Reclamation Plan (CMRP) (see Appendix C), DOS's Final EIS (August 2011), Keystone's *Supplemental Environmental Report*, Keystone's letter to NDEQ dated October 18, 2012, and Keystone's responses to NDEQ's requests for information (see Appendix H). The mitigation measures identified in Chapter 4 are a portion of those agreed to by Keystone and are not meant to be a complete listing.

Keystone would also be required to comply with all terms and conditions stipulated in applicable local, State, and federal permits. This requirement is an important component of the overall mitigation effort because it provides the nexus for the permitting agency to enforce compliance and ensure environmental or other protection. NDEQ is confident that enforcement would occur through the requirements of permits even though NDEQ may not be directly responsible.

### 5.1 NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY'S APPROACH TO MITIGATION

This evaluation review began with public meetings to collect Nebraskans' concerns regarding the Keystone XL Pipeline Nebraska Reroute. The concerns set the foundation for this report and focused NDEQ on impacts that would need to be mitigated. In conducting the evaluation of the proposed Nebraska Reroute, NDEQ performed the following:

- Careful and thorough review of all public comments
- Consultations with federal, regional, State, and local agencies
- Site visits
- Review of existing documentation including the Final EIS (DOS, 2011a)
- Full consideration of the proposed Nebraska Reroute information supplied by Keystone

NDEQ's approach to mitigation of impacts follows a sequence: 1) seek ways to avoid impacts, 2) minimize impacts, and 3) conduct restoration. Based on NDEQ feedback, Keystone modified its preferred reroute to avoid fragile soils in the northern portion and to avoid an area upgradient of the Clarks WHPA where the aquifer is thin, wells are shallow, and bedrock is close to the surface. For unavoidable impacts, NDEQ identified opportunities that minimize impacts on resources. Chapter 4 discusses numerous measures to minimize impacts, and these measures continue to be developed by Keystone. Lastly, when impacts cannot be avoided and have been

minimized to the extent possible, residual impacts will be mitigated through compensation or restoration by Keystone.

### 5.1.1 Nebraska Department of Environmental Quality Authority

Upon enactment of Neb. Rev. Stat. §§ 57-1501 to 57-1503, the NDEQ gained authority to conduct an evaluation for certain pipelines. The stated legislative purpose and findings for that authority are found in § 57-1501, which sets the broad policy that NDEQ has fully considered in its implementation of the authority. NDEQ is responsible for submitting an evaluation to the Governor on the impacts of the proposed Nebraska Reroute. This evaluation includes a discussion of the actions that will mitigate impacts likely to result from construction, maintenance, and operation of the proposed Nebraska Reroute.

### 5.1.2 Mitigation Commitments and Landowner Agreements

NDEQ encourages Keystone to negotiate mutually acceptable agreements with adversely affected landowners to address potential construction and restoration issues. All landowner agreements will comply with federal, State, and local permits.

## 5.2 PUBLIC REVIEW OF MITIGATION MEASURES

NDEQ encouraged the public and agencies to review and comment on the mitigation measures in the Draft Evaluation Report. For NDEQ to assess the comments effectively, NDEQ requested that comments be specific about any mitigation and the reasons why the suggested mitigation would be appropriate. NDEQ considered the suggested mitigation measures for this Final Evaluation Report, which will be presented to the Governor.

DOS is in the process of supplementing the Final EIS based on a revised Presidential Permit application from Keystone. Additional commitments may be developed during DOS's Supplemental EIS process.

## 5.3 COMMITMENTS MADE BY KEYSTONE

Keystone has made mitigation commitments that are recorded in several documents discussed below. The DOS's Final EIS and its appendices contain commitments Keystone made to address a wide variety of environmental impacts identified during DOS's environmental review. In addition, Keystone expanded and enhanced its mitigation commitments in response to specific issues that were raised by NDEQ and the public concerning the proposed Nebraska Reroute. Keystone has stipulated that it will adhere to applicable mitigation commitments outlined in DOS's Final EIS and Keystone's SER. Refer to the DOS Final EIS, and to Appendix C, and Appendix F.2 of this Final Evaluation Report for specific mitigation measures proposed by Keystone.

### 5.3.1 Construction, Mitigation, and Reclamation Plan

Keystone provided an updated CMRP in its SER (Keystone, 2012b), located in Appendix C of this Final Evaluation Report. The CMRP contains general conditions and conditions for uplands, drain tile systems, wetland crossings, waterbodies and riparian lands, hydrostatic testing, and site reclamation. The requirements described in the CMRP apply to the entire Keystone XL Pipeline project.

Keystone committed to implementing construction, mitigation, and reclamation actions contained in the CMRP to the extent that they do not conflict with the requirements of any applicable federal, State, or local rules and regulations, or other permits and approvals applicable to the project. Additionally, Keystone may negotiate with individual private landowners, activities that could result in adjustments to stated requirements in the CMRP on individual private land. Specific site conditions may also result in adjustments to the CMRP procedures. All work will comply with federal, State, and local permits.

The proposed Nebraska Reroute will be designed, constructed, operated, and maintained in a manner that meets or exceeds applicable industry standards and regulatory requirements.

Because the proposed Nebraska Reroute avoids the Sand Hills, Keystone updated the CMRP since the publication of the Final EIS to include reclamation and revegetation commitments in areas of fragile soils. Fragile soils are defined as those that have a high percentage of sand, high wind and water erosion potential, low water-holding capability, and rolling-to-steep terrain. The measures focus on reducing construction disturbance, appropriate reclamation, and post-construction monitoring. Keystone coordinated with representatives from the University of Nebraska, South Dakota State University, NRCS (Holt County), and the Nebraska Department of Roads to develop these techniques. See Appendix C for the details of each commitment.

### 5.3.2 Spill Prevention, Control, and Countermeasure Plan

Appendix C of the Final EIS (DOS, 2011a) contains a Draft SPCC Plan. The purpose of the SPCC Plan is to establish procedures to prevent the discharge of hazardous or regulated materials during the construction of the Keystone XL Pipeline Nebraska Reroute, particularly into or upon waters of the United States. The SPCC Plan applies to construction activities of the pipeline. The focus is primarily on fuels, lubricating substances, hydraulic fluids, and other hazardous materials present on the site. The SPCC Plan does not cover potential releases from the pipeline during operation. For information on potential spills associated with pipeline operation, including a required Pipeline Spill Response Plan (PSRP), see Chapter 6, Pipeline Safety and Potential Spills. The SPCC Plan is designed to reduce the likelihood of a spill during construction, provide for prompt identification and proper removal of contaminated materials if a spill does occur, comply with applicable State and federal laws and project permits, and protect human health and the environment. The SPCC Plan complements existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards and pollution rules in order to minimize the potential for unauthorized releases of hazardous materials, fuels, and lubricants.

The Draft SPCC Plan in the DOS Final EIS is a template for the pipeline construction contractor and will be finalized by each contractor based on all required site-specific information. The SPCC Plan describes all actions that Keystone will take to prevent spills, including training, site security, equipment inspection and maintenance, materials storage and handling, spill control and countermeasures, documentation and reporting, inspection and record keeping, applicable State requirements, and certification of nonsubstantial harm.

### 5.3.3 Emergency Response Plan

Appendix C of the Final EIS (DOS, 2011a) contains Keystone's Draft Emergency Response Plan (ERP). Keystone will submit its ERP to PHMSA prior to project operation. However, DOS

required Keystone to include a Draft ERP in the Final EIS to provide the public with basic information on the likely procedures that would be followed in the event of an accidental release from project facilities. The Draft ERP describes the key procedures, coordination activities, anticipated contacts, equipment to be used, possible cleanup activities, and other information needed to understand how Keystone would respond to an accidental release of crude oil during operation of the project. The ERP will be updated to include the proposed Nebraska Reroute-specific emergency preparedness and emergency response information prior to the project beginning operation.

### 5.3.4 Pipeline and Hazardous Materials Safety Administration Special Conditions

Appendix F.2 of this document contains a list of 57 Special Conditions that PHMSA recommended that DOS impose if a Presidential Permit were granted to the Keystone XL Pipeline project. Keystone has committed to implementing these 57 Special Conditions as part of the proposed Nebraska Reroute and has stipulated that the conditions are enforceable by PHMSA. These 57 Special Conditions address areas such as material requirements; construction requirements; operation and maintenance; and reporting, records retention, and senior-level certification requirements.

## 5.4 ADDITIONAL KEYSTONE COMMITMENTS

NDEQ evaluated the public comments and the impact of the Keystone XL Pipeline Nebraska Reroute on Nebraska's resources (presented in Chapter 4). NDEQ identified and discussed with Keystone additional opportunities to mitigate impacts. As a result, Keystone responded with a letter dated October 18, 2012, that lists additional commitments.

The following is a list of Keystone's additional commitments verbatim from the October 18, 2012, letter. Several of the commitments were previously proposed.<sup>1</sup> Items from the letter that were a review of existing commitments or regulatory processes are not included here. See the Additional Commitments from Keystone letter, dated October 18, 2012, in Appendix C for complete text.

#### **Public Liaison Officer**

*To address potential issues to landowners affected by Keystone XL:*

- *Prior to construction, Keystone would select, subject to NDEQ approval, and pay for, a public liaison officer to facilitate the exchange of information between Keystone and landowners, local communities, and residents. The purpose of the public liaison officer would be to respond to questions or concerns and to resolve promptly any complaints or problems that may develop as a result of the pipeline's construction. The public liaison officer would report to NDEQ or as otherwise directed by NDEQ. Keystone will*

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<sup>1</sup> After DOS issued the Final EIS in August 2011, Keystone sent a letter to the Nebraska State Legislature to offer mitigation measures that would address concerns raised by Nebraskans concerning the Sand Hills route. The measures proposed within the letter were withdrawn by Keystone after the decision was made to reroute the pipeline to avoid the Sand Hills. The public suggested that several of the proposed mitigation measures would still be applicable for the Nebraska Reroute.

consider agricultural extension agents, as well as other qualified individuals, in selecting a public liaison officer.

### Water Well Testing

- *Keystone would conduct baseline water quality testing for domestic and livestock water wells within 300 ft of the final centerline of the approved route in Nebraska, upon the request of individual landowners who provide the necessary access to perform the testing. These baseline samples would be collected prior to placing the pipeline in service. Subsequently, in the event of a significant spill in the area, Keystone would conduct water well testing as required by NDEQ pursuant to Title 118, Nebraska Administrative Code. Keystone would also provide an alternate water supply for any well where water quality was found to be compromised by a spill.*

### Leak Detection

- *Keystone would commit to keep abreast of the latest developments in external leak detection technologies (above and beyond those already proposed to be implemented on the Project, as described in the August 2011 Final Environmental Impact Statement), that could be installed along the pipeline at sensitive locations. Keystone would report to, and discuss with, the Department of Environmental Quality the status of innovation in such pipeline leak detection equipment and methods on or before January 1, 2014, and at such additional times thereafter until 2024 as the DEQ shall specifically request, but in no case more frequently than once every three years.*

### Emergency Response

- *Once a final Project route is determined in Nebraska, Keystone will conduct a detailed spill risk assessment for the section of the Keystone XL Pipeline system in the State. Utilizing that assessment, Keystone will determine the optimal location of spill response equipment and resources, taking into account response times to sensitive areas and receptors. These spill response locations will be reflected in the Emergency Response Plan that Keystone will submit to the federal Pipeline and Hazardous Materials Safety Administration for review and approval.*

### Assurance – Spill Clean-up

- *Keystone is committed to ensuring the safe operation of its pipeline system and to prevent any incidents from occurring. Should a release occur from the Keystone XL pipeline, Keystone is committed to clean up any releases that may occur. Keystone is also legally required to clean up spills under Title 118 and OPA 90. In addition to all of the above, and in response to public concern, Keystone would commit to file annually with Nebraska DEQ, by May 1 of each year:*
  - a) A certificate of insurance as evidence that it is carrying a minimum of \$200 million in third party liability insurance as adjusted by calculating the GDP-IPD from the date a Presidential Permit is issued for the Project and adjusting the amount of the third party liability insurance policy by this percentage. The third party liability insurance shall cover sudden and accidental pollution incidents from Keystone XL Pipeline in Nebraska; and*

- b) A copy of Keystone's SEC Form 10-K and Annual Report.*

### Surface Water

- *As outlined in Keystone's Construction Mitigation and Reclamation Plan (CMRP), trenches through water bodies that are dry or contain non-moving water at the time of crossing will not be left open for more than 24 hours, except in extenuating circumstances, to reduce chances of sediment discharge from a sudden storm event resulting in runoff. This commitment would not apply where excavation of rock by blasting or mechanical means may be required in the water body.*
- *Keystone will also abide by mitigation measures outlined in applicable water withdrawal and discharge permits to protect sensitive receptors, such as fisheries.*
- *As a standard procedure and as part of its water withdrawal and discharge permits, Keystone identifies water rights that could be affected by temporary interruptions of water flow.*
- *As the pump station location and design for Pump Station 24 is finalized, Keystone will develop an access plan for this pump station given its location near the Loup River that takes into account access issues during flood conditions.*

### Wetlands

- *Keystone would develop compensation for impacts for forested wetlands impacted by the construction right-of-way through the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 and 401 permitting program. Keystone would mitigate for impacts to non-jurisdictional, as well as jurisdictional forested wetlands.*

### Terrestrial Vegetation

- *Keystone would work with landowners and the NRCS to determine appropriate seed mixes.*
- *Prior to construction, Keystone will mark all areas of the right-of-way which contain infestations of noxious, invasive species or soil-borne pests. Keystone will implement Best Management Practices (BMPs) for conducting vegetation control where necessary before and after construction. Agricultural herbicides used would be developed in consultation with county or state regulatory agencies. All herbicides applied prior to or during construction will be non-residual. Herbicides will not be used in or within 100 feet of a wetland or waterbody.*
- *Where appropriate, Keystone will retain a local rangeland expert to coordinate area-specific seed mixes.*

### Wildlife

*The following are measures to mitigate habitat loss and wildlife mortality:*

- *To prevent unauthorized access, and to the extent permitted by landowners, Keystone would secure/lock temporary gates when construction activities are not occurring in the area where access is through that gate. Also to the extent permitted by landowners, Keystone would make reasonable efforts to restrict access to the pipeline corridor via*

*access roads after construction to minimize alteration of human activity patterns in formerly inaccessible areas.*

*The following additional measures would be implemented to manage habitat alteration:*

- *The use of soil additives such as fertilizers and pH modifiers in native rangelands to minimize the potential spread of non-native and invasive species would be discussed with agricultural extension agents/rangeland experts as required to assess suitability.*
- *Keystone would request landowners to discourage intensive grazing in the construction ROW during the first five growing seasons where forested areas will be reclaimed.*

### **Agriculture and Other Land Uses**

*Keystone would commit to the following mitigation measures address potential impacts to agriculture in Nebraska:*

- *If construction were to adversely affect wetlands in NRCS conservation lands (such as the Wetland Reserve Program) Keystone would follow applicable NRCS procedures in addition to other federal permit requirements.*
- *When agricultural (tilled) fields are disturbed, Keystone would work with the landowner regarding the type of vegetation that would be reestablished.*
- *Where Keystone is made aware of the presence of certified organic farms along the Project route prior to construction, Keystone would work with those organic farm operations to ensure that pipeline construction does not impair the farm's organic status. Keystone would take reasonable steps to identify organic farms along the Project route.*
- *If the Project crosses an organic farm, Keystone will work with the landowner to take reasonable steps to avoid mixing organic soil and non-organic soil.*

### **Public Services**

- *Before construction begins, Keystone's contractors develop detailed traffic plans that address all applicable laws, regulations and ordinances. Keystone would take into account minimizing impacts to school bus routes in developing these traffic plans.*
- *Keystone would ensure that underground and overhead utilities are located and that Keystone avoids contact and damage during construction.*
- *Keystone would ensure that contractors will have Site Specific Safety Plans in place before commencing work that will address locating, avoiding and protecting utilities.*
- *Keystone would dispose of construction camp trash (solid waste) by hauling to a licensed disposal facility.*

### **Noise**

- *To the extent practicable, Keystone will not site pump stations close to noise-sensitive receptors.*
- *For all pump stations, Keystone will observe the U.S. Environmental Protection Agency standard of 55 dBA Ldn measured at the nearest noise sensitive receptor. Keystone will complete a Noise Impact Assessment (NIA) study for each pump station in Nebraska once their location is finalized. Where it is determined by this study that predicted noise levels*

*might be higher than 55 dBA Ldn measured at the nearest noise sensitive receptor, Keystone will implement mitigation measures prior to the start-up. Noise abatement options considered are: above-ground pipe lagging, pump blankets, motor air intake enclosures, and engineered sound barriers. Keystone will conduct noise surveys in the event of noise complaints from nearby noise receptors.*

### **Energy**

- *During construction of the pipeline, to the extent practicable, Keystone would avoid relocating existing electric transmission lines and would avoid existing distribution lines.*
- *Where line relocation can not be avoided, Keystone would coordinate with the local public power district to temporarily or permanently relocate lines.*
- *To the extent practicable, Keystone would coordinate, and has been coordinating, with the local public power district to minimize potential impacts to landowners resulting from the construction of new transmission lines to pump stations. It should be noted that any new transmission lines are subject to a separate regulatory/permitting process.*

### **Hazardous Sites and Materials**

- *During construction, Keystone would make individuals available who are trained in identifying and disposing of hazardous materials.*
- *If tanks or contamination are found, they should be managed according to federal, State, and/or local regulations.*
- *If an unregistered well is found, Keystone would provide the landowner with technical assistance to register the well.*

#### **5.4.1 Keystone's Commitments Made After the Draft Evaluation Report**

During the comment period for the Draft Evaluation Report, NGPC submitted a comment stating that they would like assurances that Keystone would communicate with them while determining waterbody crossing methods. NDEQ discussed the issue with Keystone in December 2012. As a result, Keystone committed to confer with agencies, including NGPC, in order to 1) determine the stream crossing method that will have the least impact on endangered and threatened species, species of concern, and high quality fisheries and 2) define fish-spawning periods and construction schedules to avoid, where practicable, in-stream activities during sensitive periods.

In addition, Keystone has also committed to using downshield lighting and sodium vapor lights or equivalent lighting to minimize impacts on the American burying beetle.