

NORTH DAKOTA PUBLIC SERVICE COMMISSION

Application for Route Permit

Hess Corporation
Tioga NGL Project

Prepared by E3 Environmental, LLC

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INTRODUCTION

Hess Corporation (Hess) owns and operates several crude oil and natural gas facilities in North Dakota including the Tioga Gas Plant and the Tioga Rail Terminal in Williams County. Hess is planning the construction of three (3) pipelines which will connect the Tioga Gas Plant (TGP) and the Tioga Rail Terminal (TRT). The Project is being referred to as the Tioga natural gas liquids project (TNGL or Project.) For the purposes of this application NGLs include propane (C3), butane (C4) and other residual natural gas liquid constituents (C5). Three (3) pipelines will be installed as a part of this project, one 8-inch un-odorized propane pipeline (C3 Line), one 6-inch un-odorized butane pipeline (C4 Line) and one 6-inch other natural gas liquids pipeline (C5 Line); the pipelines will be co-located in the same right-of-way (ROW). The proposed Project will be a uniform length of approximately 3.6 miles and will occur entirely within Williams County, North Dakota. The proposed Transmission Facility Corridor (Corridor) is comprised entirely of private land.

Hess is submitting to the North Dakota Public Service Commission (Commission or PSC) a single consolidated application for a Certificate of Corridor Compatibility and Route Permit for the Project.

The application provides the requisite information as stipulated by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08.1; and,
- PCS Administrative Code, Chapter 69-06-05, Transmission Facility Permit.

The information presented in this application is organized according to the format prescribed in the Commission's Application Guidelines for an Application for a Route Permit, which divides the information into the following categories:

- SECTION 1: Type, Size and Design
- SECTION 2: Route Analysis and Findings
- SECTION 3: Evaluation of the Proposed Route in Regard to Applicable Considerations in Section 49-22-09 and Criteria Established in Section 49-22-05.1
- SECTION 4: Mitigative Measures
- SECTION 5: Description of Right-of-Way Preparation and Reclamation Procedures
- SECTION 6: Utility's Easement Acquisition, Landowner Notification, and Easement Compensation Plan
- SECTION 7: List of Preparers

SECTION 1: TYPE, SIZE AND DESIGN

1.1 TYPE

The Project is a NGL transmission pipeline project. The steel pipelines will meet U.S. Department of Transportation (DOT) regulations, specifically the design, installation, pressure testing, operations and maintenance requirements as outlined in 49 CFR Part 195.

1.2 APPROXIMATE LENGTH OF FACILITY

The proposed TNGL will be a uniform length of approximately 3.6 miles in total length. The entire project will be located in Williams County, North Dakota.

1.3 SIZE AND DESIGN OF PIPELINE FACILITY

The steel pipelines will meet DOT regulations, specifically the design, installation, pressure testing, operations and maintenance requirements as outlined in 49 CFR Part 195.

1.3.1 PIPE SIZE

The TNGL will be constructed of steel pipes which shall, at a minimum, meet the following standards.

- One-8” Nominal Diameter Steel Pipe (C3 Line)
 - ASME Class 300 Carbon Steel; API 5L, X-52 Std., HFI/ERW, FBE Coated Line Pipe
 - Wall Thickness of 0.322 inches; pipeline casing will be installed at State and US Highway crossings and Railroad crossings.
- One-6” Nominal Diameter Steel Pipe (C4 Line)
 - ASME Class 300 Carbon Steel; API 5L, X-52 Std., HFI/ERW, FBE Coated Line Pipe
 - Wall Thickness of 0.280 inches; pipeline casing will be installed at State and US Highway crossings and Railroad crossings.
- One-6” Nominal Diameter Steel Pipe (C5 Line)
 - ASME Class 300 Carbon Steel; API 5L, X-52 Std., HFI/ERW, FBE Coated Line Pipe
 - Wall Thickness of 0.280 inches; pipeline casing will be installed at State and US Highway crossings and Railroad crossings.

1.3.2 OPERATING PRESSURE AND THROUGHPUT

The Project has been designed with the following design parameters listed below:

- C3-Line
 - Maximum/Normal Operating Pressure: 740/456 pounds per square inch gauge (psig)
 - Maximum/Normal Throughput: 37,000/18,050 barrels per day (bpd)
- C4-Line
 - Maximum/Normal Operating Pressure: 740/295 psig
 - Maximum/Normal Throughput: 16,000/8,000 bpd
- C5 Line
 - Maximum/Normal Operating Pressure: 740/138 psig
 - Maximum/Normal Throughput: 10,000/5,000 bpd

1.4 ABOVEGROUND FACILITIES

The proposed Project will include two (2) mainline valves (MLV) for each of the three (3) pipelines. These facilities will be installed to meet DOT regulations and will allow for the isolation of select segments of the pipeline for inspection and maintenance purposes. These MLVs will be installed within the existing TGP and TRT facilities.

1.5 WIDTH OF RIGHT-OF-WAY

- Typical Construction Right-of-Way Width:
 - 100-feet wide typical for single trench ROW
 - 200-feet wide typical for triple trench ROW
- Permanent Right-of-Way Width:
 - 50-feet wide

1.6 LOCATION

The Project will be located in Williams County, North Dakota, originating at the TGP located approximately 1-mile east of Tioga North Dakota, and terminating at the TRT located approximately 1-mile southwest of Tioga North Dakota. Please refer to the project maps provided in Appendix B.

1.7 PROJECT SCHEDULE

1.7.1 ROUTE PERMIT

Hess is seeking a Route Permit in or before April 2012.

1.7.2 CERTIFICATE OF CORRIDOR COMPATIBILITY

Hess is submitting the application for a Certificate of Corridor Compatibility in February 2012 which has been included with this application for a Route Permit. The two applications have been combined to form this Consolidated Application. Hess is seeking a Certificate of Corridor Compatibility in or before April 2012.

1.7.3 CONSTRUCTION SCHEDULE

Hess has scheduled construction to commence as early as April 1, 2012. Pipeline construction is expected to take approximately four (4) months to complete. Construction of the three pipelines will occur simultaneously. Pipeline commissioning will be conducted once construction is complete and shall prepare each pipeline for placement into service. Restoration will begin in 2012 and shall continue as long as seasonal conditions allow, these efforts shall be temporarily suspended as necessary during frozen or saturated conditions, resuming in 2013. Hess will continue restoration efforts until final restoration has been achieved which is anticipated to occur in 2013.

SECTION 2: ROUTE ANALYSIS AND FINDINGS

2.1 PIPELINE ROUTE

The proposed Route was developed based upon a thorough analysis of the proposed Corridor (a 1-mile wide corridor centered upon the proposed Route, *i.e.*, one-half mile on either side of the proposed Route), as discussed in the application for a Certificate of Corridor Compatibility. This broad-based analysis confirmed that the proposed pipeline Corridor was suitable and that it would cause minimal environmental impacts, thus conforming to the Commission's siting criteria.

Once the Corridor was established, Hess studied routing alternatives and developed the proposed pipeline alignment (Route), which satisfies the Project's objectives while also conforming to the Commission's siting requirements for a transmission route. In support of Hess' Route selection, the analytical studies from the Corridor were refined and augmented with field studies. Field studies were conducted along the entire length of the Project by trained natural and cultural resource specialists. The environmental survey corridor was a minimum of 300-feet centered upon the proposed Route and was extended up to 350-feet in areas to accommodate construction workspace and potential routing alternatives. The survey corridor is depicted on the maps in Appendix B. The purpose of these field studies was to inventory any potential resource issues (*e.g.*, wetlands, waterbodies, protected species, critical habitats, or cultural resources) that may intersect the proposed pipeline alignment and to collect the baseline field data necessary to prescribe alternative routing or mitigation to minimize environmental impacts. The results of these field surveys are discussed in the following sections. A full Natural Resources and Wetland Determination Report (Natural Resources Report) is provided in Appendix D, and the Class I and Class III Cultural Resource Inventory Report (Cultural Resources Report) is provided in Appendix E.

2.2 ENVIRONMENTAL SURVEY

All field surveys were conducted based upon a minimum 300-foot wide survey corridor, centered upon the proposed pipeline Route. Routing variants were developed when resources were identified that would likely require avoidance mitigation. In these instances, the area surveyed was increased to accommodate routing modifications. The surveys conducted for the TNGL covered the entire construction right-of-way which accommodates all workspace required for Project construction. Field surveys were completed on May 1, July 1 and September 8 of 2011.

2.2.1 NOXIOUS WEEDS

Field efforts included a detailed noxious weed inventory. "Noxious weed" is a general term used to describe fast-spreading, non-native plant species in a given area. They have adverse ecological and economic impacts due to their ability to outcompete native plant species for habitat and resources. Field surveys identified two (2) noxious weed colonies of Canada thistle and one (1) colony of Leafy spurge in the survey corridor.

Hess will implement the appropriate mitigation for these features. Please see Appendix B for the mapped location of these occurrences, Appendix D for the complete Natural Resources Report, and Section 4: Mitigative Measures in this document for the proposed mitigation procedures.

2.2.2 TREE/SAPLING/SHRUB SURVEY

The natural resource surveys included a tree/shrub inventory. This inventory recorded the pre-construction status of this resource and shall form a baseline for restoration and mitigation reconciliation. Approximately 5 trees/samplings or shrubs may be impacted by construction activities. Please see Appendix D for the complete Natural Resources Report and SECTION 4 Mitigative Measures of this application for proposed mitigation measures.

2.2.3 WETLAND AND WATERBODIES SURVEY

The proposed alignment was inventoried for wetland and waterbody features. Field crews identified features, characterized the feature as wetland or waterbody and recorded feature boundaries relative to the proposed centerline.

2.2.3.1 WETLAND SURVEY

Survey efforts documented the wetlands that were present within the survey corridor. The location of each recorded feature included a reference to the proximity of the feature relative to the proposed centerline to facilitate avoidance mitigation where practicable. A total of six (6) wetlands were recorded, totaling approximately 3.6 acres, of which approximately 0.8 acres may be directly impacted by construction of the proposed Project. Hess will implement appropriate mitigation at each of these features, which may include avoidance (*e.g.*, workspace modification), construction mats, topsoil segregation, vegetation preservation, and other Best Management Practices (BMPs) to minimize impacts when working in or around wetlands.

Please see Appendix B (see Figure SC-NR) for the mapped location of each feature, Appendix D for the complete Natural Resources Report and SECTION 4 Mitigative Measures of this application for proposed mitigation measures.

2.2.3.2 WATERBODIES SURVEY

Field studies included an inventory of waterbodies that occurred within the survey corridor. The location of each recorded feature included a reference to the proximity of the feature relative to the proposed centerline to facilitate avoidance mitigation where practicable.

Survey personnel inventoried waterbodies (*e.g.*, ponds, creeks, streams) with a discernible ordinary high water mark (OHWM). The OHWM is a widely accepted physical characteristic used to identify features that are likely regulated by the U.S. Army Corps of Engineers (COE.) One (1) waterbody was inventoried during field efforts which will be crossed by the Route. Hess' will utilize the horizontal directional drill (HDD) installation method for the Project. Hess shall implement BMPs during

construction and installation of the waterbody crossing to minimize and avoid, where practicable, direct impacts to these features.

Please see Appendix B (see Figure SC-NR) for the mapped location of this feature, Appendix D for the complete Natural Resources Report and SECTION 4 Mitigative Measures of this application for the proposed mitigation measures.

2.2.4 WILDLIFE INVENTORY

Approximately 160 wildlife species are resident or seasonal visitors to the Project Corridor. These include common mammals (raccoons, white-tailed and mule deer, and pronghorn); various songbirds (bobolink, grasshopper sparrow, western meadowlark and horned lark); eagles and raptors (bald and golden eagles, red-tailed hawk, and northern harrier); and numerous other fauna. The proposed alignment was inventoried for sensitive species' and their critical habitat. No threatened or endangered species were observed by field biologists. Please see Appendix D for the complete survey report.

2.2.4.1 FEDERALLY PROTECTED SPECIES SURVEY

Under authority of the Endangered Species Act (ESA), the U.S. Fish and Wildlife Service (USFWS) and the Fisheries Service division of the National Oceanic and Atmospheric Administration (NOAA) have identified and maintain a list of species and critical habitats that have been afforded protection under the ESA. The ESA also provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they live.

The USFWS, in their comments dated May 23, August 17 and November 23, 2011, expressed specific concerns regarding species protected by the ESA. In response, Hess commissioned field studies to confirm presence or absence of these species and/or their critical habitats. The results of this assessment are provided below; refer to Appendix D for a complete Natural Resources Report:

Whooping crane: The Whooping crane is present in North Dakota on a semi-annual basis during spring and fall migrations between breeding grounds in Wood Buffalo National Park in Canada and winter grounds in the Aransas National Wildlife Refuge in the Gulf of Mexico. During migration, the species utilizes larger wetland complexes for roosting habitat and adjacent uplands for foraging. The USFWS noted that the proposed project was located within the migration corridor of the Whooping Crane. The USFWS also noted that the cranes are vulnerable to power line strikes during migration. Field crews observed potentially suitable habitat (i.e.; cultivated fields suitable for foraging) for migrating whooping cranes within the survey corridor. Please refer to Appendix C for related agency consultations, Appendix D for the detailed survey results, and Section 4: Mitigative Measures in this document for proposed mitigation measures.

Piping plover: Field studies of the survey corridor confirmed the absence of suitable habitat or plovers.

Interior least tern: Field studies of the survey corridor confirmed the absence of suitable habitat or terns.

Pallid sturgeon: Field studies of the survey corridor confirmed the absence of suitable habitat.

Bald eagles: Field studies confirmed the absence of nesting or roosting habitat within 0.5 miles of the centerline of the survey corridor.

Golden eagles: No golden eagles were observed within 0.5 miles of the project area. Field crews recorded potential golden eagle breeding habitat, but evidence of nests or nesting was absent. Hess will work with the USFWS as necessary if nesting activity is observed within 0.5 miles of the proposed pipeline route. Please refer to Appendix C for related agency consultations, Appendix D for the detailed survey results, and Section 4: Mitigative Measures in this document for proposed mitigation measures.

2.2.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The North Dakota State Historic Preservation Office (SHPO) is responsible for managing the historic and archaeological resources of the state. Hess commissioned, SWCA, Inc. (SWCA), to conduct a Class I Cultural Resource Inventory of the Corridor; background research was conducted on April 26, 2011. The Class I Cultural Resource Inventory identified 17 previously recorded cultural resources within the proposed Corridor. These results were used to assess Corridor compatibility for routing and later for Route refinement and preparation for field studies.

The ensuing Class III Cultural Resource Inventory of the Route was completed on May 18, July 1, and September 8, 2011 by SWCA. During field studies, SWCA newly recorded a segment of the historic Great Northern Railway mainline, which is currently owned and operated by Burlington Northern Santa Fe Railway (32WI1007.)

Site 32WI1007 is eligible for nomination to the National Register of Historic Places (NRHP) however this newly recorded segment is recommended as a non-contributing portion of the larger resource due to previous impacts that have modified its physical and historic integrity; however, avoidance of this resource is recommended. Hess plans to conduct a HDD to avoid impacting this resource.

On November 4, 2011, Hess received concurrence of *No Historic Properties Affected* and *No Significant Sites Affected* for the Project from the SHPO, provided the proposed avoidance and mitigation measures are implemented.

Please refer to Appendix C for related agency consultations, Appendix E for the Cultural Resources Report and SECTION 4: Mitigative Measures of this application for proposed mitigation measures.

2.2.6 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

On January 5, 2012, the USFWS provided a response regarding the presence of USFWS managed lands within the Project Corridor. The USFWS identified one Waterfowl Protection Area (WPA) located in the northwest corner of the Corridor. Hess has chosen a Project alignment which will avoid impacts to the WPA. See Appendix C for a record of this consultation and Appendix B for project maps.

SECTION 3: EVALUATION OF THE PROPOSED ROUTE IN REGARD TO APPLICABLE CONSIDERATIONS IN SECTION 49-22-09 AND CRITERIA ESTABLISHED IN SECTION 49-22-05.1

3.1 EXCLUSION AREAS

Exclusion areas are geographical areas that should be excluded in the consideration of a route for a transmission facility. The following table and text identify and discuss exclusion areas identified along the proposed Route.

Exclusion Area	Crossed by Proposed Route
Federal	
National Parks or Memorial Parks	No
Historic Sites or Landmarks	Yes
Natural Landmarks or Monuments	No
Wilderness Areas	No
State	
Historic Sites, Monuments, or Historical Markers;	No
Archaeological Sites	No
Parks	No
Nature Preserves	No
County	
Parks	No
Recreation Areas	No
Municipal Parks	No
Other	
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	No
Areas where Animal or Plant Species that are Unique or Rare to this State would be Irreversibly Damaged	No

3.1.1 FEDERAL RESOURCE REVIEW

Hess has initiated consultations with various Federal agencies and has conducted a comprehensive review of published information. Hess has concluded that no national parks, memorial parks, landmarks, natural landmarks, monuments, or wilderness areas will be affected by the TNGL however Hess did identify one historic site which will intersect the proposed Route.

Hess commissioned a Class I Cultural Resource Inventory of the proposed Corridor and augmented that effort with a Class III Cultural Resource Inventory of the Route. The results of the Class III effort are summarized in Section 2.2.4. Hess has developed a site-specific mitigation plan for the culturally historic site (32W11007) that intersects the proposed Route. On November 4, 2011, Hess received concurrence of *No Historic Properties Affected* and *No Significant Sites Affected* for the Project from the SHPO, provided the proposed avoidance and mitigation measures are implemented. Please

see Appendix C for related consultations, Appendix E for the Cultural Resources Report and SECTION 4: Mitigative Measures for a detailed discussion of proposed mitigation at site 33WI1007.

3.1.2 STATE RESOURCE REVIEW

Hess has confirmed, through a combination of agency consultations, review of publicly available information and field studies, that no state parks, historic sites, monuments, historical markers, or nature preserves are crossed by the proposed Route.

Hess commissioned a Class I Cultural Resource Inventory of the proposed Corridor and augmented that effort with a Class III Cultural Resource Inventory of the Route. The results of the Class III effort are summarized in Section 2.2.4. Hess has developed a site-specific mitigation plan to avoid impacts to 32WI1007 which intersects the proposed Route. On November 4, 2011, Hess received concurrence of *No Historic Properties Affected* and *No Significant Sites Affected* for the Project from the SHPO, provided the proposed avoidance and mitigation measures are implemented. Please see Appendix C for related consultations, Appendix E for the Cultural Resource Inventory Report and SECTION 4: Mitigative Measures for a detailed discussion of proposed mitigation at the archaeological site identified during the Class III survey.

3.1.3 COUNTY RESOURCE REVIEW

Hess has confirmed through a combination of agency consultations, review of publicly-available information and field studies the absence of county parks, county recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the proposed Route.

3.1.4 AREAS CRITICAL TO THE LIFE STAGES OF THREATENED AND ENDANGERED ANIMAL OR PLANT SPECIES

Hess has commissioned surveys of the proposed Route. The scope of the surveys included documentation of Federally listed species identified during field surveys or evidence of their critical habitats. Emphasis was placed on those species identified through public domain research, as well as the results of Project-specific consultations conducted for the Corridor analysis. No areas critical to the life stages of threatened or endangered animals or plants were identified during this effort. The results of these field efforts are detailed in SECTION 2.2.3: Wildlife Inventory and proposed mitigation is discussed in SECTION 4: Mitigative Measures.

3.1.5 AREAS WHERE ANIMAL OR PLANT SPECIES THAT ARE UNIQUE OR RARE TO THIS STATE WOULD BE IRREVERSIBLY DAMAGED

Based upon agency consultations and subsequent field surveys, the proposed Project would not result in irreversible impacts that are detrimental to species or their habitats. Hess will implement proposed mitigation plans and fully comply with environmental permits in order to avoid potential impacts to unique or rare animal or plant species or their habitats.

3.2 AVOIDANCE AREA INVENTORY AND ANALYSIS

Avoidance areas are geographical areas that shall not be considered in the routing of a transmission facility unless, under the circumstances, it is shown that there is no reasonable alternative. The following table and text identify and discuss avoidance areas crossed by the proposed Route.

Avoidance Area	Crossed by Proposed Route
Federal	
Historic Districts	No
Wildlife Areas	No
Wild, Scenic or Recreational Rivers	No
Wildlife Refuges	No
Grasslands	No
State	
Wild, Scenic or Recreational Rivers	No
Game Refuges or Game Management Areas	No
Forests or Forest Management Lands	No
Grasslands	No
Other	
Historic Resources not meeting Exclusion Areas criteria	No
Areas of Known Geologic Instability	No
Areas within 500-Feet of a Residence, School, or Place of Business	No
Reservoirs and Municipal Water Supplies	No
Water Sources for Organized Rural Water Districts	No
Irrigated Land (not applicable to underground facilities)	NA
Areas of Recreational Significance which are not designated as Exclusion Areas	No

3.2.1 FEDERAL RESOURCE REVIEW

A review of publicly available information was conducted, and Hess has concluded that no designated or registered historic districts, wildlife areas, wild, scenic or recreational rivers, wildlife refuges, or grasslands are crossed by the Route.

3.2.2 STATE RESOURCE REVIEW

Hess conducted a review of publicly available resources and has concluded that no designated or registered state wild, scenic, or recreational rivers, game refuges, game management areas, management areas, forests, forest management lands, or grasslands are crossed by the proposed Route.

3.2.3 HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA

Hess conducted a review of publicly available resources and has concluded that there are no historical resources that do not meet the exclusion area criteria, crossed by the Route.

On November 4, 2011, Hess received SHPO concurrence of *No Historic Properties Affected* and *No Significant Sites Affected* for the Project, provided the proposed avoidance and mitigation measures are implemented. Please see SECTION 2.2.4 North Dakota State Historic Preservation Office for a discussion of related studies and results, Appendix C for related consultations, Appendix E for the Cultural Resources Report and SECTION 4: Mitigative Measures for a detailed discussion of proposed mitigation at the archaeological sites identified during the Class III Cultural Resource Survey.

3.2.4 AREAS OF KNOWN GEOLOGIC INSTABILITY

There are no known areas of geological instability along the proposed Route. North Dakota has not experienced an earthquake of sufficient magnitude to damage welded steel piping or structural steel in recorded history. Sink holes are known to occur in North Dakota but are more closely related to mining activities and no evidence of mining or sink holes was identified. Finally, the potential for landslides was evaluated; earth movement of this nature is closely associated with areas of great topographic relief, high gradient slopes, recent deposits that have yet to reach a stable angle of repose, or where underground water movement may create a slurry of rock and mud resulting in a subsidence. There are no locations along the proposed Route that can be characterized as instable.

3.2.5 AREAS WITHIN 500-FEET OF A RESIDENCE, SCHOOL OR PLACE OF BUSINESS

Hess utilized aerial photography to identify structures located within 500 feet of the proposed pipeline alignment. Field surveys were conducted of each structure to characterize the structure as rural residence, school or place of business. Hess did not identify any locations where an occupied structure is located within 500 feet of the proposed alignment.

3.2.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES

Hess has confirmed that the Route does not contain reservoirs or municipal water supply sources.

3.2.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS

Hess has confirmed that the Route does not contain water sources that are utilized by organized rural water districts.

3.2.8 IRRIGATED LAND

This criterion does not apply to underground transmission facilities; as such, it is not applicable to this Project.

3.2.9 AREAS OF RECREATIONAL SIGNIFICANCE WHICH ARE NOT DESIGNATED AS EXCLUSION AREAS

Hess has confirmed that the Route does not cross areas of Recreational Significance.

3.3 FACTORS TO BE CONSIDERED IN EVALUATING APPLICATIONS AND DESIGNATIONS OF SITES, CORRIDORS AND ROUTES (49-22-09)

Available Research and Investigation Relating to the Effects of the Location, Construction, and Operation of the Proposed Facility on Public Health and Welfare, Natural Resources and the Environment:

The Route selection process between the TGP and the TRT identified and evaluated several options for routing this Project. These studies were designed to define a preferred route that achieves Project objectives, is technologically and economically feasible for construction, and minimizes impacts to landowners and the environment.

Field studies were conducted to identify environmental, biological, and cultural resources along the Route; the results of this effort are discussed in SECTION 2: Route Analysis and Findings and full reports are provided in Appendices D and E. SECTIONS 3.4: Selection Criteria and SECTION 3.5: Policy Criteria, included below, discuss possible effects on the public health and welfare.

The proposed Project will include the installation of two (2) MLVs per pipeline. These valves will be installed to meet DOT regulations and will allow for the isolation of select segments of the Project for inspection and maintenance purposes, as well as during abnormal operating conditions. The MLVs will be installed within the existing TGP and TRT facilities, as such will not result in the loss of agricultural or farm land.

During operation of the TNGL, the pipeline system shall be continuously monitored via Hess' Supervisory Control and Data Acquisition (SCADA) system, which is designed to shut in any section that exhibits abnormal operating parameters.

The Effects of New Energy Conversion and Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects:

The Project does not include energy conversion or transmission technologies and systems that are specifically designed to minimize adverse environmental impacts. The Project will be constructed in compliance with environmental permits. The conditions of these permits are designed to minimize adverse environmental impacts. Additionally, Hess may utilize low impact construction techniques (e.g.; horizontal directional drill) to reduce environmental impacts. Refer to SECTION 4: Mitigative Measures for a full description of the mitigation measures Hess has planned to minimize impacts resulting from the Project's location, construction, and operation.

Adverse Direct and Indirect Environmental Effects which cannot be Avoided Should the Proposed Site or Route be Designated:

Unavoidable adverse direct and indirect environmental effects will be temporary and shall be minimized through compliance with environmental permits. The potential impacts to resources including vegetation, wildlife, agricultural operations, transportation, and noise levels associated with construction are discussed in SECTION 3.5: Policy Criteria. Hess will mitigate these temporary impacts to the maximum extent possible.

The Project will be constructed in compliance with environmental permits. The conditions of these permits are designed to minimize adverse environmental impacts. Refer to SECTION 4: Mitigative Measures for a full description of the mitigative measures planned to minimize impacts resulting from the Project's location, construction, and operation.

Alternatives to the proposed corridor or route which are developed during the hearing process and which minimize adverse effects:

Hess will fully participate in the hearing process and will address any alternatives developed during the hearing process, as applicable.

Irreversible and irretrievable commitments of natural resources should the proposed corridor and route be designated:

Hess is not aware of any irreversible or irretrievable commitments of natural resources that would result from the requested approvals.

Direct and Indirect Economic Impacts of the Proposed Facility:

Construction of this Project will provide firm, reliable service for a maximum 63,000 bpd of NGL and a critical transportation link between the TGP and the TRT for delivery to critical U.S. and Canada markets via railcar transportation.

Existing Plans of the State, Local Government, and Private Entities for Other Developments at or in the Vicinity of the Proposed Route:

Through the course of Project planning and subsequent routing, Hess identified and is coordinating with other pipeline operators in the region where the proposed Route crosses parcels to be developed in the future or common rights of way (Plains Pipeline, Enbridge, Bear Tracker and Williston Basin Gas Pipelines). Hess is not aware of any other future development plans within or in close proximity to the Route.

The Effect of the Proposed Route on Existing Scenic Areas, Historic Sites and Structures and Paleontological or Archaeological Sites:

Hess has commissioned Class I and Class III Cultural Resource Surveys of the Route. Hess has modified the alignment to avoid or in one instance (*i.e.*; 32WI1007) developed

a mitigation plan for the eligible site that encroaches upon the proposed construction corridor. The proposed mitigation is detailed in SECTION 4: Mitigative Measures. All related correspondence can be found in Appendix C and supporting documentation of field studies can be found in Appendix E.

Project-specific consultation with various Federal, State and Local agencies did not identify any scenic areas within the Route. All related correspondence can be found in Appendix C.

SWCA, on behalf of Hess, initiated a Project review with experts who possess knowledge of North Dakota's paleontological resources; these consultations concluded that there are no known resources within the proposed Corridor or Route.

The Effect of the Proposed Route on Areas Which are Unique Because of Biological Wealth or Because they are Habitats for Rare and Endangered Species:

The proposed Route is not anticipated to result in permanent adverse impacts to the environment. No Federal or State listed species or their critical habitats were identified during field surveys. Please see SECTION 2: Route Analysis and Findings for a comprehensive discussion of Hess' efforts to identify sensitive environmental resources along the proposed Route. Provided that Hess adheres to environmental permit conditions, the Project will not result in impacts to listed or sensitive species or their habitats. See Appendix C for complete Federal and State agency consultations. Detailed survey results can be found in Appendix D.

Problems Raised by Federal Agencies, Other State Agencies and Local Entities:

Hess has consulted with several Federal and State agencies to identify possible environmental resources within the Corridor and any related agency concerns. Refer to Appendix C for a complete record of consultations. Resource issues raised by agencies included:

- GFD-disturbance of native prairie and wooded draws, protection of wetlands and alterations to existing drainage patterns.
- USFWS-threatened and endangered species and critical habitat protection (e.g., undisturbed native prairie), migratory bird habitat and wetland/waterbody protection, erosion control and restoration/reseeding procedures.

The Route selection process has taken into consideration comments received from responding agencies. Hess has also modified the Route, as necessary, where field studies confirmed the presence of sensitive resources and where avoidance was the recommended mitigation. Through these efforts, Hess has refined the Route or developed mitigation strategies to avoid or minimize direct impacts. Further details regarding agency consultations and concerns can be found in the Application for Certificate of Corridor Compatibility and avoidance, planning and mitigation measures are further detailed in SECTION 4: Mitigative Measures of this application. See

Appendix C for complete Federal and State agency consultations. Detailed survey results can be found in Appendix D.

3.4 SELECTION CRITERIA

The selection criteria require a study of environmental impacts and changes in land use that may result from the siting of the proposed Project. Hess has successfully avoided or minimized negative effects with respect to the selection criteria to the maximum extent practicable.

3.4.1 AGRICULTURAL IMPACT ASSESSMENT

Agricultural Production: The Project will temporarily impact approximately 44 acres of land in North Dakota, of which approximately 71% are cultivated. The majority (95%) of the land crossed can be characterized as agricultural. Once the construction is complete, the land will be restored to its pre-construction contours and land use to the extent practical. Hess will provide payments to landowners for crop loss resulting from Project construction.

Family Farms and Ranches: The Project's impact to family farms and ranches will be temporary and closely associated with construction of the pipeline. Hess will negotiate easements with landowners crossed by the Project. Prior to clearing, landowner fences will be braced and cut to allow the passage and operation of equipment; temporary gates and fences will be installed to control livestock where necessary. Once construction is complete, the land will be restored to its pre-construction contours and land use, to the extent practicable. Fences and gates impacted by the Project will be replaced in accordance with landowner agreements. See SECTION 4: Mitigative Measures for the mitigation plan for agricultural and range lands.

The Project will have minimal impact to lifestyle or farm/ranch operations once construction has been completed. Buried pipelines will not impact typical farm or ranch operations, and those areas directly impacted by construction will be restored to their pre-construction condition.

The location of pipeline markers is defined under 49 CFR 195 for pipelines. Hess works with local landowners and county officials to ensure that pipeline markers are located where required but also in an acceptable location for these parties. These markers are to be placed in full view so that they are not accidentally damaged by nor cause damage to landowner or county equipment

Lands Suitable for Irrigation: The proposed Route will potentially cross lands that are currently irrigated and others that are potentially suitable for irrigation. The proposed project will not result in permanent impact to these fields. Construction activities will result in temporary impacts that will be brief in duration. Standard construction and restoration techniques will mitigate impacts as all disturbed areas will be returned to pre-construction contours and land use

Surface Drainage: All areas disturbed by construction will be returned to pre-construction contours to the extent practicable, which should result in no change in surface drainage. Impacts to surface drainage will be temporary and limited to construction activities. During construction, Hess will implement a project-specific Storm Water Pollution Prevention Plan (SWPPP) approved by the North Dakota Department of Health (NDDoH) to manage stormwater run-off and will employ proper erosion and sediment control measures throughout construction and restoration.

Ground Water: The aquifers that underlay North Dakota are typically associated with two types of geologic formations, specifically bedrock and glacial drift. Bedrock aquifers in the area are known to occur from 3,000 to 5,000 feet below the surface while glacial drift aquifers are known to occur at depths of from a few feet to up to 500 feet below the surface. Ground excavation associated with the Project will generally be limited to depths no greater than 10 feet; as such, it is unlikely that the project would have significant or permanent impact on groundwater resources.

3.4.2 THE IMPACTS UPON

Noise-Sensitive Land Uses: The Project is located in a rural setting, effectively isolating it from the majority of sensitive receptors. Once constructed and in-service, normal pipeline operations are not audible. Field studies verified that there are no potential noise-sensitive resources or inhabited structures located within 500-feet of the proposed pipeline Route.

Visual Effect on Adjacent Areas: The proposed Project will include the installation of six (6) MLVs. These facilities are small aboveground features which will be installed within the existing footprint of the TGP and TRT respectively. The visible piping and equipment are finished and maintained with a white painted surface. No other permanent aboveground features are to be installed as a part of the Project.

Extractive and Storage Resources: This Project will not impact any extractive or storage resources.

Wetlands, Woodlands, and Wooded Areas: A comprehensive desktop review of published data, including aerial photography and National Wetland Inventory data was conducted to assess the presence or absence of wetlands, woodlands, and wooded areas. The review of the proposed Corridor confirmed the presence of these resources. Hess commissioned field surveys to identify and record the locations of these resources with respect to the proposed Route. The results of these field studies have resulted in the development of a preferred alignment to minimize impacts to wetlands, woodlands, and wooded areas. Please refer to SECTION 2: Studies of Corridor Certificate Application for a comprehensive discussion of Hess' consultations, and Appendices C and D for reference. Mitigation details are discussed in SECTION 4: Mitigative Measures of this Application.

Radio and Television Reception, and other Communication or Electronic Control Facilities: Hess does not anticipate that the Project will impact radio, television, or other electronic control facilities.

Human Health and Safety: Hess' corporate policy meets or exceeds Federal and State laws, rules and regulations and is enforced and adhered to by all Hess' employees and contractor employees. Hess utilizes procedures designed to protect property and personnel, and to maintain regulatory compliance, in its operations and construction activities. By implementing these policies and practices, Hess promotes a safe and healthy workplace during construction and operation of all its assets.

The design of the TNGL incorporates the use of valves at each pipeline terminus. The purpose of the valves is to allow for the isolation of a pipeline to facilitate maintenance in a safe and controlled manner. Additionally, in the event of an abnormal operating condition, valves can be closed as necessary to prevent an uncontrolled release of product. Finally, the operation of the TNGL will be continuously monitored via Hess' SCADA system, which is designed to shut in any section that exhibits abnormal operating parameters.

Animal Health and Safety: The wildlife currently inhabiting the Route are common and generally mobile. The local wildlife inhabitants will be temporarily displaced by the Project without a measurable impact to the viability of these populations. No species of special concern are anticipated to experience direct impacts due to construction or operation of the Project.

Plant Life: The Project will not result in the permanent loss of agricultural or pastureland. Construction impacts will be temporary and the restoration will return the fields to their pre-construction condition to the extent practicable. No species of special concern will be impacted by the Project.

3.5 POLICY CRITERIA

3.5.1 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

Hess selects pipeline corridors and routes to minimize impact as required by the statutes, rules and regulations of the Commission. As appropriate, Hess may employ local environmental consultants and archaeologists to assist with planning. Local farmers may also be employed for restoring cropland to tillable condition following construction. Hess is proud of its safety record in the operation of facilities in North Dakota and is prepared to meet any emergency that should arise in order to minimize the impact of any pipeline failure.

The operation of the TNGL would be monitored by the continuously manned Hess Tioga Gas Plant Control Center located in the Tioga Gas Plant. This facility monitors most of Hess' natural gas and natural gas liquid pipeline operations in North Dakota. With this system in place, abnormal operating parameters will be quickly identified and the proper response shall be implemented quickly and efficiently. The operation

of the pipeline conforms to DOT standards, as such, Hess maintains a rigid pipeline integrity program and periodically runs internal line inspection tools to find anomalies, and perform repairs as required.

3.5.2 LOCATION AND DESIGN

The Project will be located in Williams County, North Dakota, originating at the TGP located approximately 1-mile east of Tioga North Dakota, and terminating at the TRT located approximately 1-mile southwest of Tioga North Dakota. Please refer to the project maps provided in Appendix B.

The project will be designed with the minimum specifications as outlined in SECTION 1.3 and 1.4 of this Route Permit.

Hess will ensure the design of the pipeline to be in full compliance with applicable DOT standards.

3.5.3 TRAINING AND UTILIZATION OF AVAILABLE LABOR IN THIS STATE FOR THE GENERAL AND SPECIALIZED SKILLS REQUIRED

The construction labor pool utilized by the Project will be primarily comprised of a non-local workforce because pipeline construction is a specialized niche construction market that relies extensively on skilled trades with specific knowledge of pipeline construction techniques. The primary contractor will be a non-local contractor, supplying specialized skilled labor. Hess will draw upon the local labor force to supply general laborers. The workforce is anticipated to reach a peak of approximately 50 personnel, of which up to 10 percent could be local hires.

3.5.4 ECONOMIES OF CONSTRUCTION AND OPERATION

The Project represents an opportunity to enhance existing infrastructure through the construction of approximately 3.6 additional miles of pipeline. In doing so, Hess will gain access to existing rail shipping capacity with only nominal construction investment. The Project represents a total investment of approximately \$4.05 million for the installation of pipeline and appurtenant facilities in Williams County, North Dakota. Once constructed and in-service, the continued costs of maintenance and operation of the proposed pipeline are expected to be minimal.

3.5.5 USE OF CITIZEN COORDINATING COMMITTEES

Hess has established and maintains a good relationship with the local residents through its long-term regional presence operating various assets in the area. Through these relationships Hess has maintained several grass roots communication channels to inform local residents regarding the developments associated with the Project.

3.5.6 COMMITMENT OF A PORTION OF THE TRANSMITTED PRODUCT FOR USE IN THIS STATE

Currently the result of this Project will be the delivery of NGL to market points in the United States and Canada.

3.5.7 LABOR RELATIONS

Hess does not anticipate encountering any adverse labor relations on this Project. The labor market in the Project area is supportive of the oil and gas industry.

3.5.8 THE COORDINATION OF FACILITIES

Hess owns and operates all of the affected facilities; thus, coordination will be seamless and executed from within Hess' internal management systems.

3.5.9 MONITORING OF IMPACTS

During construction and for the duration of the Project, Hess' primary contractor shall be responsible for providing oversight of construction activities. Hess will manage environmental obligations throughout construction and restoration. Hess will identify responsible parties to provide onsite environmental oversight of construction activities.

3.5.10 UTILIZATION OF EXISTING AND PROPOSED ROW AND CORRIDORS

The entire Project right-of-way will be collocated with six (6) gathering pipelines and two (2) fiber optic cables; as such 100% of the project will utilize existing and proposed right-of-way.

3.5.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

Hess is actively marketing in the region, and projects of various form and function are frequently studied. However, Hess does not have current plans to construct or expand transmission facilities in North Dakota in the foreseeable future, as reported in their current 10-Year Plan (see Appendix F).

SECTION 4: MITIGATIVE MEASURES

4.1 LOCATION

The location of the proposed Route is a function of the location of the TGP and the location of the TRT, as well as the process of evaluating various alternatives to identify the most desirable and suitable route. Hess commissioned field surveys of the proposed Route to address specific agency concerns expressed during consultations, inventory the resources present along the Route, define the location and boundaries of resources that intersect the proposed Route, identify potential impacts to natural resources and identify avoidance or other mitigation opportunities to further minimize the impacts of the Project.

Trees and shrubs: Hess shall comply with the Commission's tree and shrub mitigation specifications. Field surveys included a pre-construction tree and shrub inventory. The clearing or removal of trees or shrubs will be done selectively, in a manner that minimizes the disturbance to woody vegetation and in compliance with the Commission's specifications. The replacement of trees and shrubs will be based upon actual impacts due to construction and shall meet the 2:1 ratio specified by the Commission and shall be fully documented.

Wetlands and Waterbodies: Wetland and Waterbody crossings will be conducted in accordance with Hess' BMPs and shall adhere to the conditions included in Federal and State permits. Hess plans to HDD all waterbodies and wetlands. This method may also be used on streams that are classified as perennial waterbodies.

Wetland/Waterbody Mitigation: Hess plans to cross wetlands and waterbodies utilizing the HDD method of installation, as such disturbance to wetlands or the bed/bank of waterbodies is not anticipated.

Hess will also take precautionary measures outside wetland boundaries and waterbody banks to prevent construction in uplands from having an impact on these sensitive resources. These measures include:

- Installing sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary where necessary to prevent sediment flow into the wetlands.
- Installing sediment barriers along the edge of the construction work area where wetlands/waterbodies are adjacent to the construction right-of-way and the ground surface slopes toward the feature.
- Temporary extra workspaces will be limited to the minimum size needed to install the wetland/waterbody crossing.
- Riparian vegetation will be preserved by limiting clearing of vegetation between temporary extra workspace areas and wetland/waterbody edges.

- Trench spoil placement will be restricted to at least 10 feet from the wetland/water's edge on the right-of-way, or in temporary extra workspace areas.
- Waterbody buffers will be maintained (*e.g.*, temporary extra workspace area setbacks, refueling restrictions) in the field with signs until construction, related ground-disturbing activities are complete.
- Storage and refueling activities will be restricted near surface waters and procedures in the Spill Prevention Control and Countermeasures (SPCC) Plan will be promptly implemented if a spill or leak occurs during construction.
- A permanent slope breaker will be installed across the right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the water's edge.

Migratory Bird Treaty Act: Hess, in consultation with the USFWS, has determined that habitat manipulation is an acceptable mitigation technique for compliance with the Migratory Bird Treaty Act (ACT). Hess plans to initiate site preparation in early April (*i.e.*, mowing or grading the right-of-way) and maintain an active construction site through restoration to avoid direct impacts to breeding birds

Whooping crane: The Whooping crane is federally listed as an endangered species. It is present in North Dakota on a semi-annual basis during the spring and fall migration between breeding grounds in Wood Buffalo National Park in Alberta and Northwest Territories, Canada, winter grounds in the Aransas National Wildlife Refuge in the Gulf of Mexico. The USFWS noted that the proposed Project was located within the migration corridor of the Whooping Crane. Whooping cranes may utilize a variety of habitats across a vast landscape during migration. Field surveys identified potential migratory foraging habitat in the survey corridor.

To mitigate any adverse effects on migratory cranes, Hess proposes to suspend heavy equipment operations upon confirmation of a whooping crane(s) within 0.5 miles of the construction corridor. Suspended activities shall resume in the absence of whooping cranes as coordinated by the USFWS. The USFWS also reported that overhead power lines present a hazardous habitat for cranes and noted that juveniles are measurably more vulnerable to this risk. The proposed pipeline will not require the installation of any overhead utilities. Please see Appendix C for USFWS consultation.

Bald and Golden Eagle: Field surveys conducted between May and September, 2011 confirmed the absence of nests or nesting activities where habitat was suitable along the route.

To mitigate potential adverse effects on nesting and breeding eagles, the USFWS recommends maintaining a nest buffer of at least 0.5 miles for any eagles nesting in the area. Hess will work with the USFWS as necessary if an eagle nest is identified within 0.5 miles of the proposed pipeline route.

Cultural Resources: On November 4, 2011, SHPO concurred with Hess' mitigation plan summarized herein. The SHPO confirmed that the required mitigation is limited to 1 site of potential cultural or historic significance found to occur within Route.

32WI1007 (MP 0.12): This site was identified in the Class I inventory as a newly recorded segment of the historic Great Northern Railway. SWCA recommended the newly recorded segment of 32WI1007 be recommended as a non-contributing portion of the larger resource due to the impacts to its physical and historic integrity. Hess will avoid this resource by boring underneath the site; no further mitigation is required. Please see Appendix C for related agency correspondence and Appendix E for survey results.

4.2 CONSTRUCTION

The proposed construction of the pipeline will be conducted in an orderly sequence designed to complete the Project in the minimum amount of time required to safely prepare the site, install the pipelines and restore the areas disturbed by construction.

Construction is estimated to require approximately four (4) months with restoration to immediately follow. Construction techniques will be employed that minimize the area of ground disturbance, off-site deposition of sediments and long-term impacts to agricultural productivity.

Restoration will immediately follow project construction and commissioning. Final grading will restore the original contours of the land to the extent practicable. Disturbed areas will be prepared for re-seeding and restoration will be coordinated to meet landowner specifications.

4.3 OPERATION

Once constructed and put into service, the proposed Project will operate continuously delivering NGLs from the TGP to the TRT. Normal pipeline operations are imperceptible to the general public, as they are silent, buried and therefore not visible, and require only minimal aboveground activity. Standard operating procedures will conform to DOT standards and requirements and as such, periodic inspection and maintenance of the right-of-way will be required.

Noxious Weeds: Field surveys identified three locations where Canada thistle or Leafy Spurge occurs within the route and proposed work space. Hess will advise contractors of these locations. Equipment leaving infested tracts will be visually inspected prior to leaving the area, vegetation and soils shall be cleaned from vehicles and equipment. The vehicles and equipment shall be cleaned (e.g.; power washed) to remove remaining soils and vegetation prior to entering uninfested tracts.

SECTION 5: DESCRIPTION OF RIGHT-OF-WAY PREPARATION AND RECLAMATION PROCEDURES

Construction will be an assembly-line process and will include the following general tasks: surveying and staking, clearing and grading, trenching, pipe stringing, pipe bending, welding, coating, hydrostatic testing, lowering in, tie-ins, backfilling, rough grading, and final restoration (*e.g.*, topsoil replacement, final grading, seeding and mulching, where required). The pipeline may be placed into service before final restoration has been completed in all areas.

At any location along the Project, construction activities will require approximately eight (8) weeks to complete from start to finish, except when weather-related delays affect the schedule. Construction activity at any location is not continual, but occurs in distinct phases with several days or weeks between each phase. For example, clearing and grading may require one day to progress for one mile along the Project right-of-way, but trenching may not follow in that area for several weeks. During the interim, there may not be any construction-related activity in the area, or it may be limited to occasional vehicular or pedestrian traffic.

Surveying and Staking

Prior to construction activities, Hess will stake the centerline and establish the boundaries of the approved work areas (*e.g.*, the construction right-of-way boundaries and temporary extra workspace areas), and flag the location of approved access roads and foreign utility lines. Wetland boundaries and other environmentally sensitive areas will also be marked or fenced for protection at this time.

Clearing and Grading

Prior to clearing, landowner fences will be braced and cut, and temporary gates and fences will be installed to control livestock where necessary. A clearing crew will clear the work area of vegetation and obstacles that may be encountered (*e.g.*, remaining trees, stumps, logs, brush, and rocks) in the work area.

The right-of-way will be graded, where necessary, to provide a reasonably level work surface and to segregate topsoil. Topsoil will be carefully removed and stored along the edge(s) of the right-of-way in a manner that allows for a haul road and trench line. The topsoil depth in the area is variable, but generally, the topsoil is between 2-9 inches deep with the deepest topsoil in valleys and the thinnest topsoil on the hillsides and hilltops. The topsoil depth and the layer removed will be determined in the field. Upon completion of pipeline construction, the trench will be backfilled and topsoil will be returned to the upper soil horizon. All disturbed areas shall be graded to restore the original contours, as reasonably practicable.

Where steep slopes or side slopes are encountered, the construction contractor may grade the slope to reduce the grade, or in areas of side slopes, two-tone the area to create a level working surface. At these locations, excess spoil will be pushed to the

side of the construction right-of-way, distributed over the working area and travel lane, or stored in alternative temporary workspace. This material will be returned to the original location and preconstruction contours will be reestablished to the extent practicable during restoration.

Concurrent with grading, erosion and sediment control devices will be installed as required by state stormwater permit conditions. The pipeline will be placed such that adequate cover from the bottom of the waterbody is in place. This is individual to the waterbody but is to be no closer than 5 feet to the bottom of the waterbody. Construction mats will also be installed across saturated wetlands to prevent rutting as equipment travels the right-of-way. Erosion and sediment control devices, which may include silt fences, straw wattles, straw bales, and road access pads, will be installed where necessary to prevent soil and sediment from leaving the construction work area.

Following installation of the pipe and backfilling of subsoil in the trench, the right-of-way will be returned to the original grade after a period of soil settlement. A soil crown will be placed over the trenched areas to accommodate future soil settlement.

Trenching

The trench will be excavated by using track-mounted backhoes or trenching machines to a depth that provides sufficient cover over the pipeline after backfilling. The bottom width of the trench will be sufficient to accommodate the three pipelines. Typically, the trench will be excavated to a sufficient depth to allow for a minimum of four feet of cover after construction. In cultivated areas, the depth of cover will be sufficient to be safely below the maximum tillage depth. Additional cover requirements may be applicable at public road crossings and waterbody crossings.

Pipe Stringing, Bending, and Welding

Sections of externally coated pipe up to 65 feet long (*e.g.*, joints) will be transported over public roads to the right-of-way by truck and placed or “strung” along the right-of-way parallel to the trench in a continuous line. After the pipe sections are strung along the trench and before they are welded together, individual sections of the pipe may be bent, where necessary, so that the finished pipeline sections conform to the natural contours of the land. Typically, a track-mounted, hydraulic pipe-bending machine will be used. Where multiple or complex bends greater than what can be properly bent in the field are required, a factory made “fitting” will be used.

After the pipe sections are bent, the joints will be welded together into sections and placed on temporary supports. Welding will comply with requirements listed in Title 49 CFR Part 195 and API Standard 1104 *Welding of Pipelines and Related Facilities*. Each weld will be tested by using radiographic non-destructive examination (NDE) to ensure that no defective welds are present and that Hess’ engineering standards are met. Welds that do not meet standards and specifications will be removed and/or repaired.

A third-party contractor certified in non-destructive inspection will be used and inspections will be performed as outlined in Title 49 CFR Part 195. After the welds are approved, a protective coating will be applied to the welded joints. The pipeline will subsequently be electronically and visually inspected for defects in the external coating. Damage to or defects in the coating will be repaired prior to lowering-in the pipeline. Cathodic protection systems will also be directly bonded to the pipe at this time.

Hydrostatic Testing

Hess will hydrostatically test the pipeline once it has been aligned and welded. Hydrostatic testing shall conform to DOT standards and shall establish the MOP for the pipeline when it is operational. Testing involves installation of test headers that control the pressure applied and are later removed upon the completion of a successful pressure test. The test procedures are a function of pressure and time. Once the desired test pressure has been achieved, the test section must hold the pressure for an 8-hour period, without a significant change in pressure. Once testing is completed, the test water is evacuated from the pipeline, and the line is prepared for commissioning. Hess will obtain a discharge permit from the NDDoH to authorize the pipeline dewatering activities; the ensuing discharge(s) will conform to the conditions stipulated in the permit.

Lowering-in and Backfilling

The trench will be inspected for the presence of rocks and other debris that could damage the pipe or protective coating. If rocks or other obstructions are observed, these will be removed and/or if necessary, the pipeline trench bottom will be padded with rock shield subsoil or sand prior to the pipeline being lowered into the trench.

If the trench bottom is obscured by water, the trench will be dewatered. Where dewatering is required, Hess will remove the water with a pump and discharge it in accordance with the applicable permit conditions.

In areas of steep slopes, breakers consisting of sand bags or foam will be installed to prevent ‘piping’ from occurring along the pipe in the trench after the area is backfilled.

The trench will be backfilled using the native material removed and compacted; however, the trench may be slightly crowned to accommodate settling.

Final Tie-in and Commissioning

Following successful pressure testing, test manifolds will be removed and the final pipeline tie-ins will be made. After final tie-ins are complete and the tie-in welds have been radiographically inspected, the pipelines will be commissioned. Commissioning involves activities to verify that equipment is properly installed and working, the controls and communications systems are functional. After commissioning activities

are complete, the pipelines will be filled NGLs and purged of air and then the pipeline is ready for service.

Cleanup and Restoration

Final cleanup will begin after backfilling as soon as weather and site conditions permit. During cleanup, construction debris remaining on the right-of-way will be collected and disposed of properly. Work areas will be graded and restored to preconstruction contours as closely as practical.

During restoration, segregated topsoil will be spread over the surface after final grading and permanent erosion controls will be installed. After permanent erosion control devices are installed, disturbed, non-cultivated areas will be seeded and slopes mulched where required. Seed mixes will be approved in advance and seeding will occur. Restoration in cultivated areas will be in accordance with landowner easement agreements.

Markers will be installed as required. The pipeline markers will be labeled to clearly identify pipeline ownership and emergency contact information in accordance with relevant DOT regulations. Aerial pipeline markers providing information and guidance to aerial patrol pilots will also be installed.

Waterbody/Wetland Restoration

Hess will be using the HDD method to cross all wetlands and waterbodies. This method can accomplish each crossing efficiently and minimize the duration of the construction and avoid direct impacts to wetlands and the bed/bank of waterbodies. Upon completion of construction, the restoration of disturbed areas shall be initiated immediately.

The horizontal directional drilling bore method involves setting a horizontal drill rig at one or both ends of the bore area. If the drill rig is located on or near the stream bank, erosion countermeasures will be installed to minimize bank disturbance and prevent further erosion during the drilling operation. The drill bores underneath the wetland/waterbody followed by a casing pipe which provides drilling fluid to dissipate heat and remove soil spoils. The main pipe, known as the string pipe, will be installed inside the casing pipe once the bore has been completed. The string pipe will then be connected to the main pipeline.

Following installation of the casing and string pipes, the bore areas will be restored as necessary. Hess will compact the banks and install erosion and sediment control blankets on the banks after seeding to prevent scour and a discharge of sediment to the waterbody. In addition, sediment control barriers will be installed on the top of the banks/adjacent to wetlands to prevent sediment generated from the right-of-way from entering the waterbody. These barriers will remain in place until the right-of-way approaches are adequately vegetated.

Agricultural Land Restoration

Portions of the Project will involve heavy construction through agricultural areas. These areas consist of active croplands predominately used to grow hard red spring wheat, red winter wheat, barley, durum, sunflowers and canola. Additionally, agricultural lands are also used as range or pasture land for livestock production. Hess has developed the following general construction methods in agricultural areas to complement the standard terms of easement agreements established with landowners:

- Hess shall observe landowner agreements negotiated for the TNGL. Easement conditions shall be detailed in construction documents and communicated to personnel responsible for construction and restoration services.
- Water flow will be maintained in supply systems unless shutoff is coordinated with the affected parties.
- Existing fences will be cut and braced along the right-of-way, and temporary gates and fences, if necessary, will be installed to control livestock and limit public access.
- On all actively cultivated lands, the trench would be excavated to sufficient depth to allow for a minimum of 5 feet of soil cover between the top of the pipe and the final land surface after backfilling.
- Restoration and revegetation practices (*i.e.*, seeding) will comply with the requirements outlined in landowner easement agreements and applicable agency regulations.
- Hess will not plant an annual cover crop on actively cultivated land unless requested by the landowner.
- Hess will respond to landowner concerns regarding issues related to site restoration following construction to mitigate to landowners satisfaction.

SECTION 6: UTILITY'S EASEMENT ACQUISITION, LANDOWNER NOTIFICATION AND EASEMENT COMPENSATION PLAN

6.1 LANDOWNER INFORMATION REGARDING EASEMENT ACQUISITION, AND NECESSARY EASEMENT CONDITIONS AND RESTRICTIONS

Once a preliminary route has been established, a title review is conducted of courthouse records for the purpose of identifying the current landowner. Hess will initiate contact with affected landowners via telephone to be followed with personal visits and e-mail correspondence. Contact by U.S. mail may be used as a last resort if no other means of landowner contact is successful.

During easement negotiations, landowners will be informed of the easement conditions and restrictions. Landowners will be compensated for the easement, as well as for damages resulting from construction of the Project. The Route includes adjustments made per landowner request. Hess, at all times, negotiates in good faith with landowners.

6.2 COMPENSATION POLICY

Hess' practice for determining landowner compensation for easements is based on research of comparable fair market pricing and prior experience negotiating easements locally.

SECTION 7: LIST OF PREPARERS

Tyler Bohan

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B.S. Chemical Engineering, University of North Dakota. Mr. Bohan is a Facilities Engineer assigned to projects for both the Tioga Gas Plant and the Tioga Rail Terminal as part of Hess' Bakken asset development. As a Facilities Engineer his experience includes indentifying and developing optimization and replacement projects for Hess assets, coordinating the TGP Process Safety Management Program, and upholding Hess design specifications and safety practices in new construction projects and base oil and gas operations.

William McCarthy, C.W.B.

Senior Environmental Compliance Analyst
E3 Environmental, LLC, 817 Vandalia Street, St. Paul, MN 55114

M.S. Wildlife Biology, University of Minnesota – Twin Cities; and B.S. Wildlife Biology, Michigan State University. Mr. McCarthy is an environmental compliance analyst with 15 years of environmental consulting experience working with various energy assets and regulatory agencies. As a compliance analyst he has managed the environmental requirements for facility siting, pipeline routing, federal licensing, and various federal, state and local permits. Mr. McCarthy is a certified wildlife biologist and in this role conducts and coordinates field studies, agency consultations, mitigation and avoidance plans.

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Environmental Engineer and Compliance Analyst
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B.S. Civil Engineering with an emphasis in Environmental Engineering-Iowa State University. Ms. Schmidt has pursued a career focused on regulatory compliance. Her experience includes providing permitting and compliance support associated with maintaining assets for safe and reliable distribution and transmission of energy throughout the continent. Ms. Schmidt has developed a broad working knowledge of NPDES construction stormwater compliance by working with distribution systems located in MN, OK, TX, LA and AR. Ms Schmidt also has extensive experience working with transmission assets involving COE permitting, ESA and SHPO consultations.

Judith Cooper. Ph.D.

Archaeologist/ Principle Investigator
SWCA, Inc., 116 North 4th Street, Suite 200, Bismarck, ND 58501

Ph.D. and M.A. Anthropology, Southern Methodist University and B.A. Anthropology, Pennsylvania State University. Dr. Cooper has over ten years of experience in North American archaeology and has worked on field (survey, testing, and recovery) and research projects in the northern Great Plains and Rocky Mountains. Dr. Cooper is experienced in federal and state cultural resources law and regulations, including Section 106 of the National Historic Preservation Act. As the Cultural Resources Lead in the SWCA's Bismarck office, she serves as a member of multi-disciplinary project teams to assure cultural resource concerns are appropriately addressed during the regulatory process.