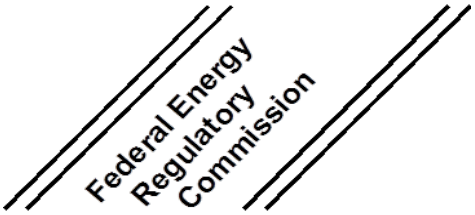


Office of
Energy Projects

December 2019

Northern Natural Gas Company **Docket No. CP19-479-000**

Bushton to Clifton A-Line Abandonment Project

Environmental Assessment

Washington, DC 20426

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

TECHNICAL ABBREVIATIONS AND ACRONYMS

APE	area of potential effects
AQCRs	air quality control regions
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH_4	Methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
CWA	Construction work area
dBA	A-weighted decibel
DKM	DKM Enterprises, LLC
DOT	U.S. Department of Transportation
EA	environmental assessment
ECS	Environmental Construction Standards
EI	environmental inspector
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
FERC	Federal Energy Regulatory Commission
GHG	greenhouse gas
GWP	global warming potential
HAPs	hazardous air pollutants
KDEP	Kansas Department of Environmental Protection
KGS	Kansaas Geological Survey
Ldn	Day-night sound level
Leq	equivalent sound level
MSHCP	Multi-Species Habitat Conservation Plan
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent to Prepare an Environmental Assessment for the Bushton to Clifton A-line Abandonment Project
NO_x	nitrogen oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OEP	Office of Energy Projects

Project	Bushton to Clifton A-line Abandonment Project
Plan	*Upland Erosion Control, Revegetation, and Maintenance Plan*
Procedures	*Wetland and Waterbody Construction and Mitigation Procedures*
psig	pounds per square inch gauge
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SPCC Plan	Spill Prevention Control and Countermeasure Plan
U.S.	United States
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound

A. PROPOSED ACTION

1. INTRODUCTION

The Federal Energy Regulatory Commission (FERC or Commission) prepared this environmental assessment (EA) to address the potential environmental effects of the abandonment and construction of facilities proposed by Northern Natural Gas Company (Northern). This EA was prepared in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and the Commission's implementing regulations under Chapter 1, Title 18 CFR, Part 380.

On June 6, 2019, Northern filed its application for the Bushton to Clifton A-Line Abandonment Project (Project, Docket No. CP19-479-000) with the Commission under Sections 7(b) and 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations. Northern requests authorization to abandon in-place the A-line facilities from Northern's Bushton Compressor Station (CS) near Bushton, Kansas, to Northern's Clifton CS near Clifton, Kansas. Northern also requests a Certificate of Public Convenience and Necessity (Certificate) to construct and operate a new compressor unit at its existing Tescott CS, location in Ottawa County, Kansas. We[1] address the environmental impacts of the proposed Project in this EA.

Specifically, the pipeline facilities to be abandoned in place include:

- 46 miles of 26-inch-diameter KSM20601 (M640A) mainline in Ellsworth, Lincoln, Ottawa, and Rice counties, Kansas;

- 48 miles of 26-inch-diameter KSM20601 (M630A) mainline in Clay, Cloud and Ottawa counties, Kansas; and

- 16 miles of 24-inch-diameter KSM20691 (M640J) systems A-line loop in Ellsworth, Lincoln, Ottawa counties, Kansas.

The A-line pipeline was constructed and completed in 1943, with the goal of transporting the natural gas found in the Hugoton, Kansas and Texas Panhandle fields to markets in the northern Mid-west. Northern now proposes to abandon the A-Line because it is obsolete by current safety standards. The A-line is Dresser-coupled, and Northern has been operating this segment of the A-line at a reduced pressure to minimize the risk of leaks and pipeline stress. As a loop of the A-line, the J-line (M640J) would also be abandoned in place, as it too would become obsolete. Northern states that

[1] "We," "us", and "our" refer to the environmental staff of the Office of Energy Projects.

following abandonment activities, including restoration of disturbed lands, the abandoned pipeline would be purchased by a third-party salvage company, DKM Enterprises, LLC (DKM). DKM intends to reclaim most of the abandoned pipeline for salvage. If the Commission approves Northern's application to abandon the pipeline, it would no longer be used for the interstate transportation of natural gas, and the pipeline and any future salvage activities would not be under the Commission's jurisdiction.

To replace the lost A-line capacity, Northern proposes to construct and operate an additional 11,152-horsepower turbine unit (Unit 6) and appurtenant facilities at the existing Tescott CS, location in Ottawa County, Kansas.

2. PURPOSE AND NEED

According to Northern, the purpose of this Project is to enhance the safety, security, and operational efficiency of Northern's pipeline system through abandonment in place of the A-line from Bushton, Kansas, to Clifton, Kansas, and to increase the Tescott CS compression capacity in Tescott, Kansas. Northern's application notes that the M630A and M640A mainlines were originally placed in service in the 1940s, have substantially escalating maintenance demands, and are no longer needed to support customers' current or future needs. Northern states that the abandonment of this segment of the A-line would improve reliability and provide for the safer long-term operation of Northern's system and that its remaining system is capable of meeting gas transportation requirements throughout its market area. The M640J line would be abandoned in place as it would become obsolete once the A-line is abandoned. Northern would retain and continue to operate other existing pipeline assets to serve markets on Northern's system. Northern states that the proposed abandonment would not impact Northern's ability to provide service to its customers.

Under section 7(c) of the NGA, the Commission determines whether proposed interstate natural gas transportation facilities would be in the interest of public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on financing, rates, market demand, gas supply, environmental impact and other issues concerning a proposed project.

Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment would not negatively affect the present or future public convenience and necessity.

3. PUBLIC REVIEW AND COMMENT

On July 16, 2019, we issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Bushton to Clifton A-Line Replacement Project* (NOI). The NOI was sent to affected landowners near the ground disturbance sites; Indian tribes; individuals and organizations having a potential interest in the Project; federal, state and local agencies; elected officials; local libraries; and newspapers. The NOI was published in the Federal Register and solicited comments on environmental matters pertaining to Northern's proposals. On November 6, 2019, a supplemental NOI was issued to notify property owners along the proposed A-line abandonment whose land could be involved in the planned salvage operation who were inadvertently excluded from the July 16, 2019 NOI environmental mailing list.

Written comments were requested from the public and agencies regarding specific concerns about the proposed Project or issues that should be considered during preparation of the EA. Two comments were received in response to the NOIs. The Kansas Department of Wildlife, Parks and Tourism indicated that it had no objections to the project and provided recommended best practices. The recommended best practices are discussed in the appropriate sections of this EA. Mr. Dean Larson commented that he had no objection to the pipeline being abandoned in-place; however, if the pipeline were salvaged, he questioned the restoration procedures and compensation. In section B.10 of this EA, we disclose available information on the planned salvage operation that would be non-jurisdictional to the FERC.

4. PROPOSED FACILITIES

The Project includes isolation and abandonment in place of A-line segments and an associated loop (J-line). Northern would abandon the pipeline in place, disconnecting and capping the A-line at two interconnections where it is linked to other system facilities. Northern has determined that ground disturbances would be required at two locations inside existing CS yards to isolate the segments of the A-line being abandoned: one location in Clay County, Kansas, and one location in Rice County, Kansas, as shown in table 1.

Table 1
Proposed Disconnect Sites for the A-line Project

Facility	MP	County	State	Facility Name – Disconnect Location
M640A Mainline	0.0	Rice	Kansas	Bushton CS
M630A Mainline	47.12	Clay	Kansas	Clifton CS

Northern would also install a new Unit 6 turbine at the Tescott CS. The new unit would tie into station piping that is connected to Northern's existing mainlines. Approximately 85 feet of 24-inch-diameter station piping, approximately 40 feet of 36-inch-diameter station piping, and approximately 80 feet of 8-inch-diameter station piping would be removed to accommodate tie-ins. The current CS occupies 30.6 acres of the approximate 83.0-acre parcel owned by Northern. Additional permanent property would not be acquired, and the operational footprint would remain at 30.6 acres. Access for construction would utilize the current permanent driveway, as well as for operation access to the facility upon completion.

The Unit 6 installation would include the installation of compressor and control buildings, a suction scrubber, a unit lube oil cooler, fuel gas heater, unit inlet air filter and exhaust systems, a unit blowdown silencer, a station backup generator, a station air compressor and dryer system, a station emergency shutdown system, associated above and below grade piping, valves, and instrumentation. The new compressor building would house the Unit 6 turbine package and would contain noise-attenuating panels, insulation, and air intake/exhaust hoods. The control building would house the motor control center and station controls. The existing fence line would not be modified during the Project. The existing utility power, water, and sewer facilities would be sufficient for the new facilities.

Land required for the Project includes additional temporary workspace (ATWS) centered on the A-line at the disconnect locations, ATWS for the Tescott CS Unit 6 installation, and two temporary access roads. In total, the Project would affect approximately 55.4 acres of land, which include 54.5 acres of ATWS and 0.9 acre of access road. Table 2 identifies the land requirements for the Project.

Table 2
Land Requirements for the Pipeline Disconnects and Above-grade Facilities

Project Component[1]	Dimensions (feet)	Land Required for Construction (acres)	Land Required for Operation (acres)
M640A Mainline Disconnect- Bushton CS, Rice County, Kansas			
ATWS	265 X 215	0.84	0.0
	1,420 X 705	18.27	0.0
Access Roads	2	0.86	0.0
Subtotal	--	**19.97**	0.0
M630A Mainline Disconnect- Clifton CS, Clay County, Kansas			
ATWS	660 X 420	4.74	0.0
Subtotal		**4.74**	0.0
Tescott CS Expansion, Ottawa County, Kansas			
ATWS	1,380 X 965	30.64	0.00
Subtotal	--	**30.64**	
PROJECT TOTAL		**55.35**	**0.00**

[1] Abandonment of the J-line does not require workspace

Figure 1 is an overview map showing the location of the Project. Specific activities Northern would undertake at these locations are described in section A.5.

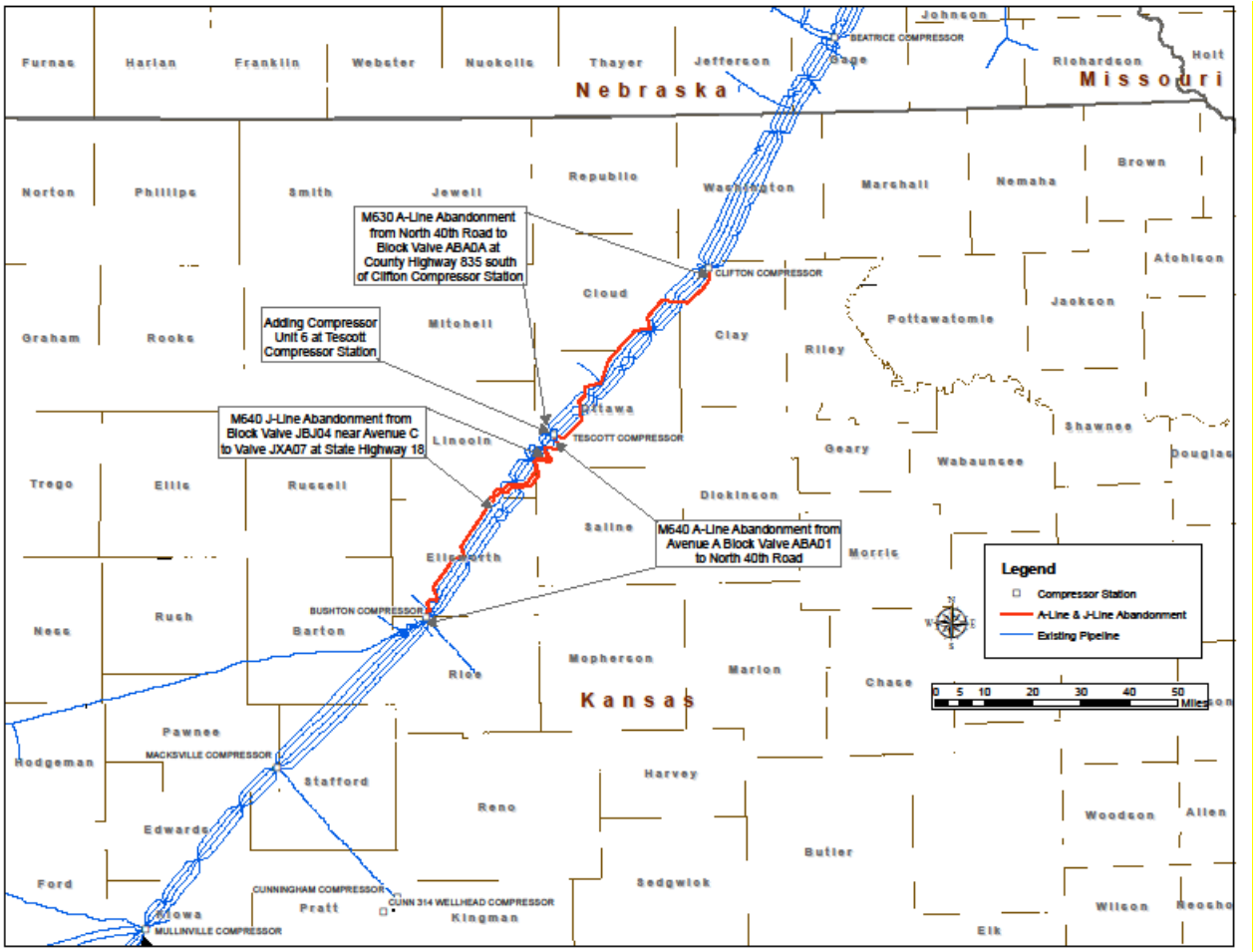


Figure 1: Overview Map of the Project Area

5. ABANDONMENT AND CONSTRUCTION ACTIVITIES, PROCEDURES, AND LAND REQUIREMENTS

Northern would disconnect and isolate the A-line in accordance with the U.S. Department of Transportation (DOT) regulations at 49 CFR Part 192 – Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. Construction and restoration activities would be in accordance with the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures).[2] The FERC's Plan and Procedures are guidelines developed to assist applicants by identifying baseline

[2] Copies of our Plan and Procedures are available for review on the FERC website (www.ferc.gov) under the environmental guidelines for the natural gas industry at: http://www.ferc.gov/industries/gas/enviro/guidelines.asp.

mitigation measures for minimizing the extent and duration of project-related disturbance. Northern would further minimize ground disturbance impacts by following the requirements and conditions of other applicable permits as listed in table 3. Northern has developed a Spill, Prevention, Control and Countermeasure (SPCC) Plan for the proposed Project to implement containment and cleanup procedures in the event of a spill or leak of contaminants during construction. Northern would employ at least one Environmental Inspector (EI), having duties consistent with those outlined in Section II.B of FERC's Plan.

Northern is planning to commence disconnect activities, as described below, and construction at the existing Tescott CS by April 2020. Northern is planning to complete the disconnections and construction of the new turbine at Tescott by November 1, 2020. Areas disturbed during construction would be restored, weather permitting, by December 2020. In the event final restoration is not completed by December 2020, Northern would file a winterization plan with FERC at that time. Temporary erosion control measures would remain in place until restoration is successful.

Work at the two disconnect sites would be conducted in one spread by one crew. A separate crew (spread) would complete construction of the new turbine at the Tescott CS. The two spreads would consist of as many as 42 construction and inspection personnel at the peak. Work would occur six days per week (Monday through Saturday) during daytime hours (7 a.m. to 7 p.m.). Tie-ins, testing and commissioning may extend beyond daylight hours and into Sunday, as necessary, to maintain the Project schedules.

Construction activity and storage of construction material would be limited to the approved workspace. Waste materials would be disposed of in a manner consistent with state and local regulations. Disturbed areas would be reclaimed and restored similar to adjacent land cover, consistent with the Plan and Procedures. Construction would include general activities such as clearing and grading, foundation installation, erection of above grade facilities, installation of piping equipment, testing of equipment and clean up and restoration.

Typical construction activities associated with the disconnection activities and the above grade facility at the Tescott CS are summarized below.

Disconnection Activities

Once a work site has been cleared and graded, the crew would isolate segments of the abandonment and blow down and purge natural gas from the pipeline. The pressure of the pipeline would be reduced through drawdown or temporary compression. The pipeline would then be excavated and exposed at system disconnect sites. No more than 4,000 cubic feet of gas would be vented.

Exposing the pipe would require excavating a 50-foot by 70-foot trench within each of the two station yards, generally between 6 and 10 feet below the surface. Excavated materials would be stockpiled within the approved work area. After the pipe is exposed, a small section of the pipe would be cut out and removed and steel caps would be welded onto both ends of the pipe remaining in place. Secondary containment would be placed below the pipe at each cut to catch unexpected liquids that may be present in the pipe. Liquids captured in secondary containment would be tested for Polychlorinated biphenyl and disposed of properly. After the pipe has been capped, the trench would be backfilled. In areas where topsoil was segregated, subsoils would be backfilled first, followed by topsoil. Portions of pipe and related appurtenances and structures that are more than three feet below ground, would be abandoned in place. Disconnection activities at any given site are expected to take up to 10 days.

Northern designed the Project to avoid excavation or grading in wetland areas to the extent feasible. Approximately 0.08 acre of temporary wetland impact would occur at the Clifton CS to facilitate disconnection of the A-line. Any open-cut excavation would be completed in accordance with the measures specified in FERC's Procedures, U.S. Army Corps of Engineers (USACE) permit conditions, and Northern's construction plans. Vegetation would be cut flush with the surface of the ground and removed from the wetland. Grading, topsoil segregation, and excavation would be limited to the area immediately over the existing pipeline. Sediment barriers would be installed within wetlands along the edge of the right-of-way, where necessary, to minimize the potential for sediment to run off the construction workspace and into wetland areas outside the construction work area. If trench dewatering is necessary in the wetland, the trench water would be discharged in stable, vegetated, upland areas and filtered through a filter bag or siltation barrier. No heavily silt- laden water would be allowed to flow into a wetland.

Once disconnection of the A-line is complete, disturbed work areas would be final graded to restore preconstruction contours and natural drainage patterns. Equipment mats, terra mats, and timber riprap would be removed from the wetland. Northern would seed uplands and disturbed areas would be restored similar to the adjacent land cover to blend with the surrounding natural landscape. The wetland would be allowed to revegetate through the existing seed bank in the wetland topsoil.

Above-grade Facility Construction Procedures

Typical construction activities associated with the above-grade facility at the Tescott CS are summarized below. Northern would utilize existing CS entrances and driveways to access workspaces within the Tescott CS. Construction activity and storage of construction material would be limited to approved workspaces. Construction would include general activities such as clearing and grading, foundation installation, erection of

above-grade facilities, installation of piping equipment, testing of equipment and clean up and restoration.

The CS site would be partially cleared of existing vegetation, graded as described in the Tescott CS Stormwater Pollution Prevention Plan (SWPPP), and prepared for construction. Prior to any ground-disturbing activities, sediment barriers such as silt fence and staked straw bales would be installed and maintained adjacent to the wetland and ATWS to minimize the potential for sediment runoff. Sediment barriers would be installed across the full width of the workspace. Excess soil removed during construction would be stored on-site for future restoration or disposed of in an approved manner.

After site preparation is complete, excavation would be performed, as necessary, to accommodate the new concrete foundations. Forms would be set, rebar installed and the concrete poured and cured in accordance with minimum strength requirements. Backfill would be compacted in-place and excess soil would be evenly spread within the station yard or hauled off for proper disposal. Northern estimates the foundations for the proposed Tescott CS would be less than 6 feet in depth. The new compressor building would be constructed on a concrete mat while the control building would utilize spread footings and stem walls.

All non-screwed piping associated with the Tescott CS would be welded, except where connected to flanged components. All welders and welding procedures would be qualified in accordance with API Standards. Equipment and structures would be installed in compliance with applicable local, state and federal code requirements. Above-grade piping would be cleaned and painted according to Northern's specifications and in accordance with regulatory requirements. Disturbed areas would be restored immediately after construction activities end. During restoration, the subsoil would be backfilled first followed by the topsoil.

Hydrostatic Testing

Hydrostatic testing or air testing would be conducted in accordance with U.S. Department of Transportation (DOT) regulations Title 49 CFR Part 192 to verify the integrity of the piping components of the CS before being placed into service. Any water used would be withdrawn from a municipal source and transported to the Project in larger tanker trucks. Northern, in conjunction with its contractors, would determine the municipality that would be used to supply the water. Hydrostatic test water would be obtained in compliance with state regulations and existing water rights.

The water would be pumped from tanker trucks into onsite storage tanks. From there, the water would be pumped into the new piping. Northern may reuse the test water

in an effort to minimize water use. After use, Northern may temporarily store hydrostatic test water in onsite storage tanks.

The test water is expected to contact only new pipe and no additives or chemicals would be added to the test water. Once Northern has completed a pressure test, the hydrostatic test water would be discharged into a well-vegetated upland area adjacent to the right-of-way or hauled off for disposal at an approved facility. Discharged waters would be dispersed by a splash plate and filtered through hay or straw bales. Use of grassy areas as the final discharge point would provide additional filtering, as well as an impediment to rapid runoff. The test water would not be discharged directly into streams/rivers or contain chemical additives, and no chemicals would be used after testing (e.g., to dry the pipe). Compressed air, nitrogen, or other inert gases may be used as a test medium as allowed by 49 CFR Part 192.

6. PERMITS, APPROVALS AND REGULATORY REQUIREMENTS

A list of federal, state and local environmental permits, approvals and consultations for the Project, as well as the current status of each, is provided in table 3. Northern would be responsible for obtaining the permits and approvals required to construct and operate the Project regardless of whether or not they appear in the table below.

Table 3
Applicable Permits, Approvals, and Consultations for the Proposed Line-A Abandonment Project

Responsible Agency	Permit or Clearance Required	Status of Permit/Clearance
Federal		
FERC	Certificate and authorization for abandonment, construction, and operation for interstate natural gas transmission pipeline facilities	Pending
EPA[b]	Clean Air Act permits and approvals	Delegated to the state (KDHE)[a]
	Clean Water Act (CWA) Section 401 Water Quality Certification	Delegated to the state (KDHE)
	CWA Section 402 permits for wastewater or stormwater discharges	Delegated to the state (KDHE)
USACE – Kansas City District	CWA Section 404 – Dredge and Fill Permit; Section 10 Rivers and Harbors Act	Notification of non-report Nationwide Permit 12 submitted February 18, 2019. USACE responded February 28, 2019 confirming NWP-12 is applicable.

Table 3 Applicable Permits, Approvals, and Consultations for the Proposed Line-A Abandonment Project		
Responsible Agency	**Permit or Clearance Required**	**Status of Permit/Clearance**
USFWS[c] – Kansas Field Office	Section 7 Endangered Species Act, Bald and Golden Eagle Protection Act, and MBTA	Habitat summary and no effect determination information submitted February 18, 2019. USFWS concurred with determination on February 25, 2019.
State – Kansas		
KDHE	For the Tescott CS, Northern would complete a Notification of Construction Application; modify existing Class I operating permit	Notification of Construction Application would be obtained prior to the start of construction while the modification to the existing operational permit would be completed in 2020.
	Section 401 Water Quality Certification	Authorization concurrent with USACE NWP-12. No individual 401 certification would be required.
	NPDES Stormwater Permit	Oil and gas construction sites are exempt and not required to obtain coverage under the KDHE NPDES Stormwater Runoff from Construction Activities General Permit KSR100000.
	NPDES Hydrostatic Test Water Discharge Permit	Permit application for Permit application for Hydrostatic General Permit (KSG670000).
	NPDES Trench Water Discharge Permit	Northern would submit a KDHE Notice of Intent for groundwater discharges associated with the Project under NPDES Stormwater Runoff from Construction Activities General Permit KSR100000.
KDWPT[d]	State Protected Species Consultation	Field survey information submitted March 6, 2019. KDWPT concurred with determination on April 5, 2019.
Kansas Historical Society - SHPO[e]	Section 106 Consultation, NHPA[f]	May 23, 2019
Local		
Clay County Floodplain Manager	Floodplain development permit	Would be obtained prior to the start of construction.
Rice County Planning and Zoning	Floodplain development permit	Would be obtained prior to the start of construction.

[a] Kansas Department of Health and Environment
[b] United States Environmental Protection Agency
[c] United States Fish and Wildlife Service
[d] Kansas Department of Wildlife, Parks and Tourism
[e] State Historic Preservation Office
[f] National Historic Preservation Act
[g] Unanticipated Discovery Plan

B. ENVIRONMENTAL ANALYSIS

Ground-disturbing activities would be limited to two locations to isolate the segments of the A-line being abandoned and workspace to install Unit 6 at the Tescott CS. Temporary impacts on approximately 55 acres are expected. Appendix A is a detailed list of all proposed areas of disturbance associated with the Project.

1. GEOLOGY

The Project workspaces would be within the Smoky Hills physiographic region of Kansas (Kansas Geological Survey [KGS], 2010). Surficial geology in the Project vicinity includes outcrops of Cretaceous age shale, chalk, limestone, and sandstone (Zeller, 1968). Bedrock is overlain by Pleistocene age glacial deposits consisting of lacustrine, outwash, and till deposits.

Topography in the Project vicinity generally consists of level to gently rolling terrain. The approximate elevation of the Bushton CS is 1,760 feet above mean sea level, the Tescott CS is approximately 1,400 feet above mean sea level, and the Clifton CS is approximately 1,250 feet above mean sea level.

1.1. Mineral Resources

Fuel and non-fuel mineral resources in Kansas include hydrocarbon production (oil and gas), salt, gypsum, building stone, and aggregate. Limestone has also been quarried for building stone or crushed for aggregate (West, 2010).

The Bushton CS is adjacent to the Prosper Field, an oil and gas production field in the Arbuckle Oil zone. Three oil wells were identified within 0.25 mile of the Bushton CS workspace, including one located within the workspace. However, all three wells are reported as plugged and abandoned. No oil and gas wells or fields were identified within 0.25 mile of the Tescott or Clifton CS workspaces (KGS, 2019a).

Based on a review of U.S. Geological Survey (USGS) topographic and mineral resources maps (USGS, 2011), and information from the Kansas Historical Society (2019), active, inactive, or historic surface and subsurface mines were not identified within 0.25 mile of the Project workspaces. Furthermore, all ground disturbance would be within existing industrial properties owned by Northern. Therefore, we conclude that the Project would not impact mineral resources.

1.2. Geologic Hazards

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people. Such hazards are typically seismic-related, including earthquakes, surface faulting, and soil liquefaction; landslides; and ground subsidence

hazards. Given the limited scope of the Project and associated ground disturbance and because all Project activities would be within existing facility boundaries, we do not anticipate significant impacts or risk of damage to the Project facilities from geologic hazards.

2. SOILS

Soils at the Project disconnect sites have largely been disturbed by previous industrial use. Per the Natural Resources Conservation Service (NRCS), Project area soils consist predominantly of moderately well-drained to well-drained silt loams with slopes ranging from 0 to 30 percent. These soils are generally not hydric, not highly wind erodible, and not highly compaction prone. Soils are generally highly water erodible and prone to rutting. The majority of soils have high revegetation potential and are not underlain by shallow bedrock (bedrock 60 inches or less from the ground surface). A total of 48.6 acres (87.7 percent) of Project area soils are classified as prime farmland. However, the three workspaces are within existing CSs and have previously been permanently removed from agricultural production.

To minimize rutting, Northern would use existing paved and gravel roads to access workspaces. If rutting to a depth of six inches or greater occurs during construction in ungraded areas, Northern would immediately limit construction activities in that area or implement protective measures (e.g., install equipment mats) to prevent additional rutting. To minimize soil erosion, Northern would install temporary and permanent erosion control devices as specified in FERC Plan, the Project-specific SWPPPs, and applicable permits. The effectiveness of temporary erosion control devices would be monitored by Northern's EI and modified by Northern's construction contractor. Temporary erosion control devices would be inspected on a regular basis and after each rainfall event of 0.5 inch or greater to ensure controls function properly. Given Northern's proposed mitigation measures and because it would revegetate or stabilize disturbed areas with gravel cover following construction and abandonment activities, impacts on soils would be temporary and not significant.

Inadvertent Spills or Discovery of Contaminants

Northern conducted a database search using publicly available databases to identify facilities with potential and/or actual sources of contamination within 500 feet of the Project. The U.S. Environmental Protection Agency (EPA) Facility Registry Service (EPA, 2019a) and databases maintained by the Kansas Department of Health and the Environment (KDHE) were reviewed (2019a; 2019b). Based on this review, sites with the potential for soil contamination were not identified within or adjacent to the Clifton or Tescott CS workspaces.

Ten historic petroleum spills or leaking underground storage tank incidents were identified within the Bushton CS. Based on the KDHE reports, six of these spills

involved releases of five gallons or less of petroleum product. With the exception of one incident, all ten reported spills were appropriately contained and remediated and have been closed with the KDHE. Groundwater monitoring is on-going for a release of chlorinated solvents from an underground wastewater storage tank that occurred prior to the removal of the tank in 1996. Soil impacts at the time of initial site characterization in 2006 were limited to the immediate vicinity of the storage tank, located approximately 800 feet southwest of the Bushton CS disconnect location. Given that the source of the release has been removed and the distance from the impacted soil to proposed areas of excavation, we conclude that Project activities are not likely to encounter existing soil contamination.

During Project activities, contamination from accidental spills or leaks of fuels, lubricants, and coolant from equipment could adversely impact soils. To minimize impacts, Northern would implement measures contained in its SPCC Plan which specifies cleanup procedures in the event of inadvertent spills. If any contaminated soil or groundwater is encountered during Project activities, the contaminated materials would be sampled and Northern would develop a site-specific contaminated soil and/or groundwater plan to handle and dispose of impacted materials in accordance with applicable Kansas regulations.

3. WATER RESOURCES

3.1 Groundwater

The Project workspaces are within stream-valley aquifers associated the Saline, Republican and Arkansas rivers. These regional surficial aquifers range in thickness but are commonly at least 100 feet thick (Miller and Appel, 1997). Groundwater yields from these aquifers may be as high as 3,000 gallons per minute, and the chemical quality of the water in the stream-valley aquifers generally is suitable for most uses (Miller and Appel, 1997). The underlying bedrock aquifer is within the Cenozoic era Dakota formation. Much of the Dakota formation is approximately 350 feet thick and consists of integrated units of sandstone with lenticular silt and clay imbedded with lenticular sand. In the Project area, this aquifer contains freshwater (Miller and Appel, 1997).

The Project area does not overlie any EPA-designated sole-source aquifers (EPA, 2019b) and would not cross any groundwater management districts (Kansas Department of Agriculture, 2019). Further, no known public or private water supply wells are within 150 feet of the Project (KGS, 2019b). Northern did not identify springs within 150 feet of Project workspaces during field surveys.

Under the Safe Drinking Water Act, each state is required to develop and implement a Wellhead Protection Program in order to identify the land and recharge areas contributing to public supply wells and protect the recharge areas to prevent the contamination of drinking water supplies. The KDHE administers the wellhead

protection program for Kansas and defines three groundwater protection zones based on distances from groundwater wells: Zone A (100-foot radius surrounding a groundwater well), Zone B (2,000-foot radius around a groundwater well), and Zone C (a two-mile radius around a groundwater well). Based on the response to an open records request submitted by Northern to the KDHE, the Bushton CS is within protection zones B and C for water wells operated by Northern, and Zone C for a groundwater well at the processing plant north of the Bushton CS. All wells are more than 200 feet from proposed workspaces. Additionally, the Clifton CS is within protection Zone C for a water supply well operated by the City of Milford. This well is more than one mile from the proposed workspace.

Northern would not appropriate groundwater, other than as necessary to dewater excavation areas. Surface drainage and groundwater recharge patterns can be temporarily affected by construction activities. Changes to these patterns can cause minor fluctuations in groundwater levels and/or increased turbidity; however, we expect water levels to quickly re-establish equilibrium and turbidity levels to rapidly subside.

Based on the limited scope and depth of disturbance associated with this Project, as well as Northern's implementation of its various construction plans (SPCC Plan, SWPPPs, and the FERC Plan and Procedures), we conclude that the Project would not significantly impact groundwater resources.

3.2 Groundwater Contamination

Based on a review of EPA and KDHE databases for regulated sites within 500 feet of the Clifton and Tescott CS workspace, Project activities are not likely to encounter existing contaminated groundwater (EPA, 2019a; KDHE 2019a and 2019b).

Ten historic petroleum spills or leaking underground tank incidents were identified within the Bushton CS. Based on KDHE information, six of these spills involved a release of five gallons or less of petroleum product. With the exception of one incident, all reported spills were appropriately contained and remediated and have been closed with the KDHE. Groundwater monitoring is on-going for a release of chlorinated solvents from an underground wastewater storage tank that occurred prior to the removal of the tank in 1996. Following the initial recovery of chemical of concern 1,1-dichloroethane (DCA), Northern implemented a Voluntary Cleanup Plan, approved by the KDHE, which included a semi-annual monitoring plan and subsequent DCA recovery plans. The most recent groundwater monitoring, completed in December 2018 and April 2019, did not identify concentrations of DCA above the groundwater pathway KDHE risk-based level (RSK) for Kansas (25 micrograms per liter). If the levels remain below the KDHE RSK levels for the fall 2019 and spring 2020 sampling events, closure would be requested. If KDHE concurs with closure, all monitoring wells would be removed and plugged. If monitoring wells are not removed prior to the start of the Project, Northern

would surround the wells with orange construction fencing to protect them from damage or destruction during abandonment activities.

The disconnect activities at the Bushton CS are approximately 930 feet to the northeast (up/cross gradient) of the DCA plume. Temporary workspace closer to the plume would be used for contractor staging; there would be no impacts to groundwater. Based on recent groundwater monitoring efforts, the depth to groundwater at the Bushton CS ranges from approximately 15 to 25 feet below the ground surface and groundwater has been recorded as close as 10.0 feet below the ground surface. This is below the anticipated depth of excavations. Given the anticipated depth of excavation, the distance to the known DCA plume, and Northern's proposed measures we do not anticipate that Project activities would encounter known existing contaminated groundwater.

Northern anticipates closure of the site prior to the start of construction. If closure is granted, no special procedures would be required for groundwater management. At present, KDHE allows purged waters from testing to be containerized, tested (per EPA methodology) and released to the soil surface if the test water is below the RSK levels. If the site has not achieved closure at the time of abandonment, procedures similar to purged water testing would be proposed to the KDHE when applying for any dewatering and stormwater permit application.

The introduction of contaminants into groundwater due to accidental release of Project-related chemicals, fuels, or hydraulic fluid during isolation activities could have an adverse effect on groundwater quality. To avoid spill-related impacts, Northern would implement its SPCC Plan. If any contaminated soil or groundwater is encountered during Project activities, the contaminated materials would be sampled and Northern would develop a site-specific contaminated soil and/or groundwater plan to handle and dispose of impacted materials in accordance with applicable Kansas regulations.

We conclude that the mitigation measures proposed by Northern would adequately avoid or minimize potential impacts on groundwater resources.

3.3 Surface Water and Wetlands

Surface Water

The Project would be constructed within three watersheds: Bushton CS is located with Outlet Plum Creek (Hydrologic Unit Code [HUC] 110300110203), Clifton CS is located within Beaver Creek-Republican River (HUC 102500170409), and Tescott CS is located within Town of Tescott-Saline River (HUC 102600100502). Surveys conducted in November and December 2018 identified four waterbodies in the Project area: one waterbody within the fenceline at the Bushton CS and three waterbodies within the fenceline at the Clifton CS. No waterbodies were delineated at the Tescott CS. Northern has designed the Project workspaces to avoid all four waterbodies. At the Clifton CS,

workspaces would be about 86 feet from CL-Stream 1, about 1,146 feet from CL-Stream 2, and about 1,754 from CL-OW 1 (pond). At the Bushton CS, Project workspace would be about 50 feet from BS-Stream 1. To avoid potential impacts on these waterbodies, such as the introduction of hazardous materials and sedimentation, Northern would implement measures in its SPCC Plan and the Plan and Procedures. Specific measures include prohibiting refueling or storing hazardous materials within 100 feet of a waterbody and installing appropriate erosion control devices (e.g. silt fence, straw bales, etc.). Therefore, we conclude that the Project would not impact surface water resources.

Hydrostatic Testing and Dust Suppression

Hydrostatic testing would be conducted in accordance with DOT regulations Title 49 CFR Part 192 to verify the integrity of the new compressor and the piping components before being placed into service. A total of about 52,000 gallons of water obtained from local municipal water supply would be needed for hydrostatic testing: approximately 50,000 gallons for the Tescott CS and less than 1,000 gallons each for the Bushton and Clifton CSs. Hydrostatic test water would be obtained in compliance with state regulations and existing water rights. No additives or chemicals would be added to the test water. Northern may reuse the test water in an effort to minimize water use. After use, Northern may temporarily store hydrostatic test water in onsite tanks. Once Northern has completed a pressure test, the hydrostatic test water would be discharged into a well-vegetated upland area or hauled off for disposal at an approved facility in accordance with applicable permits and the FERC Plan and Procedures.

Northern would obtain water necessary for dust control from a local municipal source in compliance with state regulations and existing water rights. Northern may also potentially use hydrostatic test water for the control and mitigation of fugitive dust in areas disturbed for construction. While actual amounts of water required for dust control would vary based on climatic conditions at the time of construction, Northern estimates that 5,000 to 10,000 gallons may be needed for dust control.

Given that Northern would conduct hydrostatic testing and dust suppression activities in compliance with the Procedures, we conclude that hydrostatic testing and dust control would not result in significant impacts.

Wetlands

Field surveys were conducted in November and December 2018 to locate and verify the presence of wetlands within the proposed Project areas in accordance with the USACE Wetland Delineation Manual (USACE, 1987), subsequent USACE guidance documents (USACE, 1991, 1992) and the Great Plains Regional Supplement (USACE, 2010). Four wetlands were identified: two palustrine emergent wetlands (PEM) were identified at the Bushton CS and two PEM wetlands were identified at the Clifton CS. However, only one PEM wetland (Wetland CL-W1) would be directly impacted at the Clifton CS. No wetlands were identified at the Tescott CS.

The Project would temporarily impact less than 0.1 acre of PEM wetland at the Clifton CS (Wetland CL-W1). Temporary impacts would result from activities associated with excavation, disconnection of existing pipeline, capping, and backfilling. To minimize impacts on Wetland CL-W1 and potential impacts on nearby wetlands, Northern would comply with measures in the Plan and Procedures, including the use of erosion control devices, such as silt fence to avoid or minimize sedimentation. Permanent wetland loss would be avoided since no permanent wetland fill would result from the construction activities for the Project. Northern would also implement measures in its SPCC Plan to prevent or clean-up inadvertent spills of hazardous materials. Further, the USACE confirmed that the Project is authorized under Nationwide Permit 12 in a letter dated February 28, 2019. Northern would comply with the conditions of this permit. Following construction, the wetland would be allowed to revegetate naturally, and is expected to be restored to preconstruction conditions relatively quickly (within two growing seasons). For these reasons, we conclude that impacts on wetlands would be temporary and minor.

3.4 Modifications to the Procedures

Construction in wetlands would comply with measures in the Procedures, with the exception of two ATWS being located within 50 feet of a wetland at the Clifton and Bushton CSs. Northern is requesting modifications to the Procedures, section VI.B.1.a, given that the location of existing facilities cannot allow for a 50-foot setback of workspaces at these two locations. At the Clifton CS, the location where the pipeline disconnect must occur to disconnect the A-line from Northern's existing pipeline system is located within CL-Wetland 1 (less than 0.1 acre). At the Bushton CS, the workspace location is about 46 feet from BS-Wetland 2. Northern has located this workspace to the west as much as possible to avoid direct wetland impacts. Northern would minimize impacts by installing appropriate erosion control devices and implementing FERC's Procedures and the regional conditions of the USACE's Nationwide Permit 12. We find these justifications and mitigation measures acceptable.

4. FISHERIES, VEGETATION, WILDLIFE, AND SPECIAL STATUS SPECIES

4.1 Fisheries

As previously discussed, no waterbodies would be directly impacted, however waterbodies are located near Project workspaces at the Bushton and Clifton CSs. No waterbodies are present at the Tescott CS. Construction activities adjacent to waterbodies could result in temporary impacts on fisheries and aquatic resources if sediment or hazardous materials flow into nearby waterbodies, which could increase stress, injury, and mortality of stream biota. Northern's proposed measures that are protective of surface water resources, including the measures in the Plan and Procedures

and its SPCC Plan would also be protective of fisheries. Therefore, we conclude that that the Project would not impact fisheries.

4.2 Vegetation and Wildlife

Project workspaces consists of approximately 55.3 acres of industrial/commercial land and less than 0.1 acre of PEM wetland (table 4). The primary vegetation cover type affected by construction of the Project is industrial/commercial non-vegetated land interspersed with mowed grass areas and landscape trees. The temporarily impacted wetland is dominated by broadleaf cattail. Impacts on wetlands were previously discussed in section B.3.3. No unique or sensitive vegetation types would be affected by the Project.

Table 4
Estimated Disturbance of Vegetation Cover Types

Facility	Wetland		Industrial/Commercial[2]	
	Temporary (acres)[1]	Permanent (acres)	Temporary (acres)[1]	Permanent (acres)
Bushton CS	0.00	0.00	19.97	0.00
Clifton CS	0.08	0.00	4.66	0.00
Tescott CS	0.00	0.00	30.64	0.00
Total	**0.08**	**0.00**	**55.27**	**0.00**

[1]Temporary cleared areas consist of that portion of the ATWS that would be allowed to revegetate following construction.
[2] The totals shown in this table include industrial areas including roads, parking areas and buildings interspersed with mowed grass and landscape trees.

The primary impact on vegetation would be a loss of vegetative cover associated with construction of the Project. Temporary impacts on vegetation would be restored according to the Plan and Procedures after construction. Some areas may be gravel–covered following construction, however, all areas that would be disturbed by the Project are within existing CS yards. No federal, state or county noxious or invasive weeds were identified in the Project area.

Wildlife common to the Project areas include whitetail deer, bobwhite quail, pheasant, cottontail rabbit, turkey, and gray squirrel, gopher, opossum, ground squirrel, and various rodents. No raptor, bald eagle, or golden eagle nests were observed during surveys.

During construction, wildlife, including migratory birds[3] protected under the Migratory Bird Treaty Act, could be disturbed by vegetation clearing and the noise of construction equipment, with some being displaced into similar habitats adjacent to the

[3] The Project falls within Bird Conservation Region 19: Central Mixed Grass Prairie; however, no part of the Project is within a designated Important Bird Area.

work areas. Abandonment activities may also result in direct mortality to smaller and less mobile individuals. However, abandonment activities would take place within the existing CS fence lines and would require minimal vegetation clearing (no tree clearing or tree side-trimming) within the construction work areas. Additionally, if construction commences during the peak breeding season for migratory birds (mid-April to mid-July in Kansas), Northern would have a biologist conduct a pre-construction nest survey for breeding birds within the Project workspaces no more than two days prior to construction and would consult with the U.S. Fish and Wildlife Service (USFWS) and Kansas Department of Wildlife, Parks, and Tourism (KDWPT) and abide by appropriate buffers if breeding birds and/or nests are identified. Further, all areas would be restored and revegetated following construction and individuals are expected to return to the area following construction. For these reasons, we conclude that the Project would not have a significant impact on vegetation, wildlife, and migratory birds.

Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the Endangered Species Act, species considered as candidates for such listing by the USFWS, and those species that are state-listed as threatened or endangered.

Federally listed species

A search of the USFWS' Information for Planning and Consultation database identified three federally listed species that may potentially occur within the Project area: the federally threatened northern long-eared bat, the federally whooping crane, and the least tern.

No suitable summer roost trees or winter hibernacula were identified in the Project area. Additionally, no tree clearing or trimming is proposed; therefore, the Project would have *no effect* on the northern long-eared bat.

The Project area is located within the primary migration pathway of the whooping crane. During migration, whooping cranes use a variety of habitats, but wetland mosaics appear to be the most suitable. Rice County, Kansas, contains critical habitat for the whooping crane within the Quivira National Wildlife Refuge, which is more than 20 miles from the Bushton CS site. The Project workspaces are located within active CS facilities and there are no large wetland complexes located within or immediately adjacent to the CSs. Although the Project would temporarily impact 0.08 acre of wetland at the Clifton CS site, the wetland complex within the Clifton CS workspace is adjacent to a parking area and is not suitable habitat for whooping cranes. Based on the lack of suitable stopover habitat, the Project would have *no effect* on the whooping crane.

The least tern uses sparsely vegetated sand and gravel bars within wide, unobstructed river channels for breeding and nesting. The Project areas are located within active CS facilities and there are no waterways with sparsely vegetated sand or gravel bars within the Project workspaces. Therefore, the Project would have *no effect* on the least tern.

Northern submitted a habitat assessment review to USFWS on February 18, 2019 indicating that the Project would have no effect on federally listed species. USFWS concurred in a letter dated February 25, 2019.

While not identified by the USFWS database report, the federally threatened piping plover was identified during a review of state-listed species as potentially occurring within the counties affected by the Project. However, the piping plover is not known to occur in the counties crossed by Project according to the USFWS (USFWS, 2019) and surveys did not identify any suitable habitat for the piping plover (beaches and dry barren sand bars in open shorelines of rivers and lakes). Therefore, the Project would have *no effect* on this species and no further consultation with the USFWS is necessary.

State-listed species

A number of state-listed species were identified as potentially occurring in the counties where the Project is located. Northern submitted a habitat assessment review to the KDWPT on March 6, 2019. In its response on April 5, 2019 and August 12, 2019[4], the KDWPT stated the Project would not result in significant impacts on crucial wildlife habitats, therefore no special mitigation measures are recommended. It also stated that the Project would not impact any public recreational areas, nor could any potential impacts to currently-listed threatened or endangered species or species in need of conservation be documented. No KDWPT permits or special authorizations would be needed if construction is started within one year, and no design changes are made in the Project plans. The KDWPT did offer general recommendations for Northern to implement when applicable. These include: implementing and maintaining standard erosion controls during all aspects of construction by installing sediment barriers (e.g. wattles, filter logs, rock check ditches, mulching, or any combination of these) across the entire construction area to prevent sediment and spoil from entering aquatic systems; and abiding by all applicable regulations and guidance from KDHE for the contaminant testing and discharge of hydrostatic test water. Northern would implement the KDWPT general recommendations, as practicable. For these reasons, we conclude that the Project would not adversely impact state-listed species.

[4] The KDWPT also provided its comments and general recommendations in a comment on the FERC docket dated August 12, 2019.

5. CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) requires the FERC to take into account the effects of its undertakings on historic properties, and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Historic properties are prehistoric or historic districts, sites, buildings, structures, objects, or properties of traditional, religious, or cultural importance, which are listed or eligible for listing on the National Register of Historic Places (NRHP). Northern provided us with information, analyses, and recommendations necessary to document compliance with Section 106, as allowed by the ACHP's implementing regulations at 36 CFR Part 800.2(a)(3) and outlined in our *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects* (July 2017), as specified in 18 CFR Part 380.12(f)).

We sent copies of our NOI for this Project to the Kansas Historical Society (SHPO), U.S. Department of the Interior Bureau of Indian Affairs, National Park Service, the ACHP, and a number of Indian tribes that historically used or occupied the Project area or may have an interest in the area.

Northern also contacted Indian tribes that may have knowledge about cultural resources in the Project area. On May 13, 2019, Northern sent letters to the Cheyenne and Arapaho Tribes, Oklahoma; Kaw Nation, Oklahoma; Kiowa Indian Tribe of Oklahoma; Delaware Tribe of Oklahoma, Osage Nation; Pawnee Nation of Oklahoma; and the Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie).

On April 4, 2019, a letter outlining the historic context of the A-line was submitted for review and comment to the SHPO. The SHPO maintained that the A-line lacked significance in terms of age, uniqueness, construction techniques, technology, and materials, and therefore did not satisfy the NRHP criteria for eligibility. On March 12, 2019, Northern submitted a consultation letter and four cultural resource reports to the SHPO, along with a request for determination of no historic properties affected. The SHPO responded with a letter, dated May 23, 2019, concurring with Northern's assessment and stated they have no objection to Northern's plan to abandon the A and J-lines in place and have a third-party contractor remove and salvage the lines, with the exception of several defined segments where sensitive resources are present. We agree.

Northern appended its Plan for Unanticipated Discovery of Cultural Resources and Human Remains (Discovery Plan) as Attachment 4B to Resource Report 4, of the Environmental Report included with its application to the FERC. In the event of a discovery of cultural resources or human remains during abandonment activities, Northern would follow the procedures outlined in its Discovery Plan. We find the Discovery Plan acceptable.

No traditional cultural properties or properties of religious or cultural importance to Indian tribes have been identified in the Project area, and no archaeological or architectural sites have been identified in the direct area of potential effects. We agree with the SHPO that no historic properties would be affected by the Project.

6. LAND USE, RECREATION AND AESTHETICS

A total of about 55.4 acres of land would be temporarily affected by construction, of which 55.3 acres are classified as industrial/commercial land. The remaining 0.08 acre is classified as wetland. Project activities include ATWS associated with disconnecting and capping the pipeline and construction of the new compressor. Northern would use ATWS and access roads to complete the proposed construction activities. No pipe or contractor yards would be used for the Project. All ATWS and access roads are located within Northern's existing CSs.

Table 5 is a summary of land use acreages affected by construction and operation of the proposed Project.

Table 5
Acreage Affected by Construction and Operation of the Project

Facility	Wetland		Industrial/ Commercial		Total	
	Const	Oper	Const	Oper	Const	Oper
Bushton CS						
ATWS	0.00	0.00	19.11	0.00	19.11	0.00
Access Roads	0.00	0.00	0.86	0.00	0.86	0.00
Clifton CS						
ATWS	0.08	0.00	4.66	0.00	4.74	0.00
Tescott CS						
ATWS	0.00	0.00	30.64	0.00	30.64	0.00
TOTAL	**0.08**	**0.00**	**55.27**	**0.00**	**55.35**	**0.00**

Approximately 0.08 acre of wetland would be temporarily impacted by construction activities at the Clifton CS, as previously discussed in section B.3.3. Northern configured the construction footprint at the Clifton CS to avoid the wetland to the extent practicable. No wetlands are located within the workspace at the Tescott or Bushton CSs. Workspace at the Bushton CS was designed to avoid a wetland and waterbody located along the east boundary of the station.

Northern's SPCC plan provides restrictions and mitigation measures to minimize potential impacts associated with the release of fuels, lubricants or other potentially toxic

materials used during routine construction. Refueling and storage of hazardous materials would be prohibited within 100 feet of wetlands during construction.

No planned residential or commercial developments are located within any areas that would be directly impacted by the Project. There are no public lands, national or state parks, or national wild and scenic rivers located within 0.25 mile of the proposed Project area. Industrial/commercial land within the Project workspace includes the existing Northern CSs. Approximately 55.3 acres of industrial/commercial land within Northern's existing CSs would be temporarily impacted by the Project. No operational impact on industrial/commercial land would occur due to the Project. The Project would not require new easement and access to the construction workspaces would be from public road crossings. The existing permanent entrance roads to the Bushton and Tescott CSs would be utilized for access. Two existing drives at Clifton would be utilized. No modifications or expansions would be required for any of the access roads.

The Project is consistent with current land uses in the Project area and would not result in any permanent changes. All temporary workspaces would be restored to pre-construction conditions. Therefore, we conclude that the Project would not have a significant impact on land use.

7. AIR QUALITY AND NOISE

7.1 Air Quality

Air quality would be affected by construction and operation of the Project. During construction, short-term emissions would be generated from the usage of equipment, land disturbance, and increased traffic from worker and delivery vehicles for all locations. Operational emissions would limited to the proposed 11,152-horsepower unit at the existing Tescott CS and would result in a minimal change in existing air emissions.

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the EPA has established National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NOx) ozone, particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2).[5] These standards incorporate short-term (hourly or daily) levels and long-term (annual) levels to address acute and I chronic exposures to the pollutants, as appropriate. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including

[5]The current NAAQS are listed on EPA's website at https://www.epa.gov/criteria-air-pollutants/naaqs-table.

economic interests, visibility, vegetation, animal species, and other concerns not related to human health. NAAQS are presented in table 6.

Air quality control regions (AQCRs) are areas established by the EPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated, based on compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas. The Project pipeline abandonment would be located in Clay, Cloud, Ellsworth, Lincoln, Ottawa, and Rice counties, Kansas. The new compressor unit would be located at the existing Tescott CS in Ottawa County, Kansas. All counties are in attainment for all criteria pollutants.

Prevention of Significant Deterioration and Nonattainment New Source Review

The Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) air permit programs are designed to protect air quality when air pollutant emissions are increased either through the construction of new major stationary sources or major modifications to existing stationary sources. The KDHE administer the PSD and NNSR permitting programs in their state. The Tescott CS is an existing minor stationary emissions source, and a major modification would require a PSD review. The potential emissions from the modifications at the Tescott CS would not be considered a major modification as emissions would be less than the significant emissions threshold of 25 tons per year, therefore PSD review is not required. All counties the project would be located in are classified as attainment for all pollutants and would not be subject to NNSR permitting.

One additional factor considered in the PSD permit review process is the potential impacts on protected Class I areas. Class I Areas were designated because the air quality was considered a special feature of the area (e.g., national parks, wilderness areas, national forests). Class 1 requirements for air quality analysis apply to new sources located within 62 miles of a Class 1 area. There are no Class 1 areas within range of the Project, therefore, an assessment of the impact on Class I areas would not be required.

Table 6
National Ambient Air Quality Standards

Pollutant	Averaging Period	Standards	
		Primary	Secondary
Sulfur dioxide (SO_2)	1-hour [l,m]	75 ppb 196 µg/m^3	
	3-hour [b]	--	0.5 ppm 1300 µg/m^3
	Annual [a,m]	0.03 ppm 80 µg/m^3	--
	24-hour [b,m]	0.14 ppm 365 µg/m^3	--
PM_{10}	24-hour [d]	150 µg/m³	150 µg/m³
$PM_{2.5}$ (2012 Standard)	Annual [e]	12.0 µg/m³	15.0 µg/m³
$PM_{2.5}$ (2006 Standard)	24-hour [f]	35 µg/m³	35 µg/m³
Nitrogen Dioxide	Annual [a]	0.053 ppm (53 ppb) 100 µg/m^3	0.053 ppm (53 100 µg/m^3
	1-hour [c]	100 ppb 188 µg/m^3	--
Carbon Monoxide (CO)	8-hour [b]	9 ppm	--
	1-hour [b]	10,000µg/m^3 35 ppm 40,000 µg/m^3	--
Ozone (2008 Standard)	8-hour [g,h]	0.075 ppm	0.075 ppm
Ozone (2015 Standard)	8-Hour [i]	0.070 ppm	0.070 ppm
Ozone (O3)	1-hour [j,k]	0.12 ppm	0.12 ppm
Lead (Pb)	Rolling 3-month [a]	0.15 µg/m³	0.15 µg/m³

a. Not to be exceeded
b. Not to be exceeded more than once per year
c. Compliance based on 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area
d. Not to be exceeded more than once per year on average over 3 years
e. Compliance based on 3-year average of weighted annual mean $PM_{2.5}$ concentrations at community-oriented monitors
f. Compliance based on 3-year average of 98th percentile of 24-hour concentrations at each population-oriented monitor within an area
g. Compliance based on 3-year average of fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area
h. The 2008 8-hour ozone standard would remain in effect until one year after an area is designated for the 2015 8-hour ozone standard, which corresponds with January 16, 2019 based upon attainment designations for the 2015 ozone standard issued on January 16, 2018
i. Permit applications that have not met EPA's grandfathering criteria would have to demonstrate that the proposed project does

not cause or contribute to a violation of any revised ozone standards that are in effect when the permit is issued, including the 2015 revised standards
j. Maximum 1-hour daily average not to be exceeded more than one day per calendar year on average
k. The 1-hour ozone standard has been revoked in all areas in which Project activities would occur
l. Compliance based on 3-year average of 99^{th} percentile of the daily maximum 1-hour average at each monitor within an area
m. The 24-hour and annual average primary standards for SO_2 have been revoked
ppm = parts per million by volume;
ppb = parts per billion by volume.
$\mu g/m^3$ = micrograms per cubic meter.

Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a "major source." The existing Tescott CS currently operates under a Title V permit which would need to be modified to incorporate the proposed modifications associated with the Project.

New Source Performance Standards (NSPS)

The EPA promulgates NSPS to establish emission limits and fuel, monitoring, notification, reporting, and recordkeeping requirements for stationary source types or categories that cause or contribute significantly to air pollution.

Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) would apply to the emergency generator being replaced at the Tescott CS. Subpart KKKK (Standards of Performance for Stationary Combustion Turbines) would apply to the stationary combustion turbine at the Tescott CS. Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Production Transmission and Distribution) would apply to the compressor unit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The 1990 CAA Amendments established a list of 189 hazardous air pollutants (HAPs), resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from specific source types located at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements.

Subpart ZZZZ- National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines would apply to the new emergency generator and would be met by compliance with Subpart JJJJ standards.

General Conformity

The EPA promulgated the General Conformity Rule to implement the conformity provision of Title I, Section 176(c)(1) of CAA. Section 176(c)(1) requires that the federal government not engage, support, or provide financial assistance for licensing or

permitting, or approve any activity not conforming to, an approved CAA implementation plan.

The General Conformity Rule is codified in Title 40 CFR Part 51, Subpart W and Part 93, Subpart B, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A conformity determination must be conducted by the lead federal agency if a federal action's construction and operational activities is likely to result in generating direct and indirect emissions that would exceed the conformity threshold (*de minimis*) levels of the pollutant(s) for which an air basin is in nonattainment or maintenance. According to the conformity regulations, emissions from sources that are subject to any NNSR or PSD permitting/licensing (major or minor) are exempt and are deemed to have conformed.

The General Conformity Rule was developed to ensure that federal actions in nonattainment and maintenance areas do not impede states' attainment of the NAAQS. The lead federal agency must conduct a conformity determination if a federal action's construction and operational activities is likely to result in generating direct and indirect emissions that would exceed the General Conformity Applicability threshold levels of the pollutant(s) for which an air basin is designated nonattainment or maintenance. Section 176(c)(1) states that a federal agency cannot approve or support any activity that does not conform to an approved State Implementation Plan. Conforming activities or actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of the NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity Rule entails both an applicability analysis and a subsequent conformity determination, if deemed necessary. A General Conformity Determination must be completed when the total direct and indirect emissions of a project would equal or exceed the specified pollutant thresholds on a calendar year basis for each nonattainment or maintenance area. As noted earlier, the proposed Project activities would occur in areas in attainment for all criteria pollutants, therefore a general conformity applicability analysis is not required.

State, County, and Local Air Quality Regulations

The KDHE requires that each facility proposing to construct or modify a stationary source or emission unit who is not required to obtain a PSD construction permit, shall obtain approval from the department before commencing construction.

Greenhouse Gases

Greenhouse gases (GHGs) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. GHGs are gases that absorb infrared radiation in the atmosphere, and an increase in emissions of these gasses has been determined by the EPA to endanger public health and welfare by contributing to global climate change. The most common GHGs emitted during fossil fuel combustion and natural gas transportation are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Emissions of GHGs are typically expressed in terms of CO_2 equivalents (CO_2e), where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO_2 over a specific timeframe, or its global warming potential (GWP). The 100-year GWP of CO_2 is 1, CH_4 is 25, and N_2O is 298.[6] During construction and operation of the Project, these GHGs would be emitted from non-electrical construction and operational equipment, as well as from fugitive CH_4 leaks from the aboveground facilities.

On November 8, 2010, the EPA signed a rule that finalizes reporting requirements for the petroleum and natural gas industry under 40 CFR 98. Subpart W of 40 CFR 98 requires petroleum and natural gas facilities that emit 25,000 metric tons or more of CO2e per year to report annual emissions of specified GHGs from various processes within the facility. Construction emissions are not covered under the GHG Reporting Rule, but those related to the proposed Project are expected to be well below the 25,000 metric tons reporting threshold. Operational emissions from the proposed facilities are likewise not expected to exceed this threshold and be reported to the EPA. The EPA has expanded its regulations to include the emission of GHGs from major stationary sources under the PSD program. The EPA's current rules require that a stationary source that is major for a non-GHG-regulated New Source Review pollutant must also obtain a PSD permit prior to beginning construction of a new or modified major source with mass-based GHG emissions equal to or greater than 100,000 tons per year (tpy) and significant net emission increases in units of CO_2e equal to or greater than 75,000 tpy. There are no NAAQS or other significance thresholds for GHGs.

Construction Emissions

Construction of the Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-

[6] These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the EPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

road and off-road construction vehicle traffic, could also occur. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., NO_x, CO, VOC, SO_2, and PM_{10}).

Northern would mitigate exhaust emissions from construction equipment by requiring contractors to meet all air quality regulations and emission standards associated with each piece of equipment, use low-sulfur diesel fuel in non-road construction equipment, and limit idling of diesel and gasoline powered on-road vehicles and non-road construction equipment operating at, or visiting, the construction site. Construction related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for each area of the Project. These emission-generating activities would include earthmoving, construction equipment exhaust, on-road vehicle traffic, and off-road vehicle traffic. Northern conservatively utilized emission factors from EPA's NONROAD2008a and MOVES2014 emission modeling software.

Construction is estimated to occur between April and November 2020. The air quality impacts of Project construction would be considered short-term and would be further minimized by Northern's implementation of fugitive dust control measures outlined in the Fugitive Dust Control Plan. Control measures include watering exposed soil surfaces, modifying the speed of truck and equipment traffic in disturbed areas, and/or removing dirt from roadways. Following construction, air quality would revert back to previous conditions. Construction emissions for the Project are presented in table 7. All emissions would occur between April and November 2020.

Table 7
Construction emissions for the Project

Description	Estimated Construction Emissions (tons per year)								
	Criteria Pollutants						CO_{2e}	Formaldehyde	Total for All HAPS
	NO_x	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$			
Bushton and Clifton CSs									
Engine Emissions	1.8	0.5	0.1	0.0	0.1	0.1	84	0.0	0.0
Disconnection Blowdown emissions	-	-	0.0	-	-	-	14	-	-
Subtotal	1.8	0.5	0.1	0.0	0.1	0.1	98	0.0	0.0
Tescott CS									
Engine Emissions	31.5	7.4	2.5	0.0	1.4	1.3	1489	0.3	0.5
Unpaved Roads	-	-	-	-	1.9	0.2	-	-	-
Earthmoving	-	-	-	-	0.2	0.0	-	-	-
Subtotal	31.5	7.4	2.5	0.0	3.5	1.5	1489	0.3	0.5
Total emissions	33.3	7.9	2.6	0.0	3.6	1.6	1587	0.3	0.5

Given the temporary nature of construction, and the intermittent nature of construction emissions, we find that emissions from construction-related activities for the Project would not be expected to cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

Operational Emissions

Emission generating modifications at the Tescott CS would include the addition of one new 11,152- horsepower Solar Taurus 70 gas-fired compressor unit, one emergency generator, one gas heating skid and facility fugitives. The Tescott CS has one existing compression turbine and ancillary equipment that operate under a KDHE air permit. There would be no other sources of operational emissions associated with the Project. The compressor unit is intended to replace lost capacity from the abandonment of the A-line; therefore, no incremental downstream capacity would be created through the proposed Project. Operational emissions for the Project facilities are presented in table 8.

Table 8
Estimated Operational Emissions (tons per year)

Description	Criteria Pollutants						CO_{2e}	Single HAP	Total for All HAPS
	NO_x	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$			
Solar Taurus 70 turbine	25.1	27.7	13.8	6.2	5.0	5.0	42,353	0.2	0.4
Fuel gas heater	0.1	0.1	0.0	0.0	0.0	0.0	144	0.0	0.0
Emergency Generator	0.5	0.9	0.3	0.0	0.0	0.0	226	0.0	0.1
Facility Fugitives	-	-	0.8	-	-	-	128	-	-
Maximum potential emissions - Project	25.7	28.7	14.9	6.2	5.0	5.0	42,851	0.2	0.5
Existing Permitted Facility Potential Emissions	156.4	40.1	5.4	1.7	3.2	3.2	-	< 10	< 10
New Potential Emissions with Project	182.1	68.8	20.3	7.9	8.2	8.2	-	< 10	< 10
PSD/NSR major stationary source threshold	**250.0**	**250.0**	**250.0**	**250.0**	**250.0**	**-**	**-**	**-**	**-**
Title V major source threshold (Class I)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**-**	**10.0**	**25.0**

The Project would employ a blowdown system to serve the new compressor turbine. The blowdown system would include a blowdown silencer. During the period

of commissioning and testing of the station, it is estimated that a unit blowdown could occur three to four times per day during daytime hours. Total estimated emissions from Project blowdowns are presented in table 9.

Description	Table 9 Average Annual Emissions (tons per year)	
	Volatile Organic Compounds (VOC)	CO_{2e}
Unit Blowdown	1.2	345
Capped Event	0.1	17
Full System Event	0.2	66
Annual Total	**1.5**	**429**

Considering the minimal operational emissions associated with the Project, we conclude that operational emissions would not have a significant impact on air quality.

7.2 Noise

Construction of the Project would affect the local noise environment in the Project area. The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually comprised of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetative cover.

Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, in the calculation of the L_{dn}, late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB), to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 dB above the measured L_{eq}.

In 1974, the EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Noise levels are expressed as decibels on the A-weighted scale (dBA) to put more emphasis on frequencies in the range that humans hear best. Because noise levels are

perceived differently, depending on length of exposure and time of day, the day-night sound level (L_{dn}) takes into account the duration and time the noise is encountered. Specifically, the L_{dn} adds 10 dBA to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for a people's greater sensitivity to sound during the night. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the Project at noise sensitive areas (NSAs), such as residences, schools, or hospitals. Also, in general, a person's threshold of perception for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half the loud.

There are no state, county, or city noise regulations that apply to this Project.

Construction Noise

Construction of the facilities would involve operation of general construction equipment and noise would be generated during the installation of the Project components. Measures to mitigate construction noise would include compliance with federal regulations limiting noise from trucks, proper maintenance of equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition.

Construction noise would be highly variable because the types of equipment in use at a construction site changes with the construction phase and the types of activities. Noise from construction activities may be noticeable at nearby NSAs. However, construction equipment would be operated on an as-needed basis during the short-term construction period. Further, Northern would limit construction activities to occur during daytime hours. FERC staff considers daytime hours to be 7:00 AM to 7:00 PM. Measures to mitigate construction noise would include compliance with federal regulations limiting noise from trucks, proper maintenance of equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition. Table 10 lists the nearest NSA's to the Project

There are no NSA's within a half mile of construction activities. As construction of the Project would be limited to daytime hours and intermittent, we conclude that construction noise would not have a significant impact on the environment.

Operation

The modified Tescott CS would generate operational noise from the additional compressor unit. Operational noise would be mitigated through installation of air inlet and exhaust silencers, blowdown silencer, and acoustic insulation in the new compressor unit building. As shown in table 10, the estimated noise from the modifications at the CS

would be below the FERC's noise criterion of 55 dBA and the Project modifications at this facility would result in a small noise increase from existing levels.

Table 10 Noise Quality Analysis					
NSA	**Distance (Feet) / Direction**	**Existing facilities + ambient Ldn (dBA)**	**New Turbine Ldn (dBA)**	**Total L_{dn} (dBA)**	**Potential Noise Increase (dBA)**
1	3,600/S	36.4	39.4	41.2	4.8
2	5,900/SE	41.2	34.1	41.9	0.7

To confirm the noise modeling and verify that noise generated from the modifications would not cause a significant increase to the existing noise, **we recommend that:**

- **Northern should file noise surveys with the Secretary no later than 60 days after placing the authorized unit at the Tescott CS in service. If a full load condition noise survey is not possible, Northern should file an interim survey at the maximum possible horsepower load and file the full load survey within 6 months. If the noise attributable to the operation of all of the equipment at the modified station under interim or full power load conditions exceeds an L_{dn} of 55 dBA at any nearby NSAs, Northern should:**
  - **a) file a report with the Secretary of the Commission (Secretary) on what changes are needed, for review and written approval by the Director of the Office of Energy Projects (OEP);**
  - **b) install additional noise controls to meet that level within 1 year of the in-service date; and**
  - **c) confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Based on the analysis above and our recommendation, we conclude that the Project would not result in significant noise impacts on residents and the surrounding communities.

Polychlorinated Biphenyls and Asbestos

Many older pipeline facilities used oils in compressor station operations containing PCBs. PCBs have been demonstrated to cause a variety of adverse health impacts. These types of oils are no longer allowed for use in pipeline facility operations, but because of past use at older facilities, these facilities and associated pipelines may still have levels of PCBs above regulatory limits.

EPA's regulations at 40 CFR 761 specifically address requirements for removal and abandonment of facilities containing PCBs. In accordance with 40 CFR 761, Subpart M procedures, Northern must remove and sample free flowing liquids (if present) from the facilities to be removed to determine disposal options. Removed pipe and valves with wipe sampling results less than or equal to 10 micrograms per 100 square centimeters (10µg/100 cm2 or 50 parts per million) PCBs could be managed as scrap material. Pipe facilities with wipe sampling results greater than 10 µg/100 cm2 PCBs with or without asbestos coating would need to be managed by:

- disposal at a Toxic Substances Control Act permitted landfill; or
- decontaminated and wipe sampled until PCBs results are less than or equal to 10 µg/100 cm2.

Based on the age of the pipeline segments to be abandoned, these facilities could have been coated with asphalt material that may also contain asbestos. EPA federal regulations for the handling and disposal of asbestos containing materials (ACM) under the National Emissions Standards for Hazardous Air Pollutants at 40 CFR 61, Subpart M. Northern has not identified measures it would take to identify facilities to be abandoned that may have ACMs, provide worker safety while working with ACMs, or provide for the proper disposal of any ACMs. Therefore, **we recommend that**:

- **Prior to any abandonment activities, Northern should file the following information with the Secretary, for review and written approval by the Director of OEP:**

  a. identify any known facilities to be disturbed having ACMs;
  b. develop protocols to comply with the appropriate requirements to identify ACMs that might be encountered;
  c. if facilities with ACMs would be disturbed, identify how any abandoned ACM-contaminated material would be properly disposed of; and
  d. develop worker protection protocols for handling ACM-contaminated materials.

8. RELIABILITY AND SAFETY

A natural gas CS or aboveground interconnect site involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a leak, or rupture at the facility. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple

asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The modifications to the Project facilities must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent facility accidents and failures, including emergency shutdowns and safety equipment. The DOT's Pipeline and Hazardous Materials Safety Administration ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level.

The DOT provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. DOT federal inspectors perform inspections and enforce the pipeline safety regulations for interstate gas pipeline facilities in Kansas.

Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in an emergency. Additionally, the operator must establish a continuing education program to enable the public, government officials, and others to recognize an emergency at the facility and report it to appropriate public officials. Northern would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

As discussed above, the Project facilities must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192 that are designed to minimize the risks of such impacts. The DOT specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion. The requirements include provisions for written emergency plans and emergency shutdowns. Northern would provide the appropriate training to local emergency service personnel before the facilities are placed into service.

The DOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it would design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993, between the DOT and the FERC, the FERC accepts this certification and does not impose additional safety standards.

The available data from the DOT's Pipeline and Hazardous Materials Safety Administration show that natural gas transmission pipelines continue to be a safe, reliable

means of energy transportation. Northern's stated purpose for this Project is to enhance the safety and operational efficiency of its pipeline system. The need for this Project arises from the fact that Northern's M630A and M640A mainlines, which were originally placed in service in the 1940s, have substantially escalating maintenance demands and are no longer necessary to support customers' current or future natural gas needs. Northern has been operating these segments at a reduced pressure to minimize the risk of leaks and pipeline stress.

Due to the age and condition of the pipeline, continued operation would require increased maintenance activities. These activities would include, among other things, maintenance digs to inspect, repair, and/or replace the pipeline which would have environmental impacts of their own and, due to their ongoing nature, would likely exceed the impacts associated with abandoning the pipeline. Based on the age of the pipeline segments to be abandoned, operational pipeline reliability and safety would be increased by the cessation of natural gas transportation through the abandonment of facilities.

9. CUMULATIVE IMPACTS

In accordance with NEPA and with FERC policy, we identified other actions in the vicinity of the proposed Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the Council on Environmental Quality (CEQ), a cumulative effect is the impact on the environment that results from the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. The CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions. In this analysis, we consider the impacts of past projects within the defined geographic scope as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered. When evaluating cumulative impacts, we establish a geographic scope for each resource affected by the proposed Project, shown in table 11.

Table 11
Cumulative Impact Analysis Geographic and Temporal Scopes

Environmental Resource	Geographic Scope	Justification for Geographic Scope	Temporal Scope
Soils and Geology	Area of disturbance of the Project and other activities that will be overlapping or abutting each other	Project impacts on geology and soils would be highly localized and limited to the footprints during active construction. Cumulative impacts on geology and soils will occur if construction of other projects were geographically	Construction through revegetation

Table 11 Cumulative Impact Analysis Geographic and Temporal Scopes			
Environmental Resource	**Geographic Scope**	**Justification for Geographic Scope**	**Temporal Scope**
		overlapping or abutting Northern's Project.	
Groundwater, Wetlands, Surface Waters	HUC 12 Watershed	Impacts on water resources can result in downstream contamination or turbidity; therefore, the geographic scope used to assess cumulative impacts on groundwater, waterbodies and wetlands are the HUC-12 subwatersheds crossed by the Project.	Construction through revegetation
Vegetation, Wildlife	HUC 12 Watershed	Impacts on vegetation and wildlife may also use the watershed scale as it provides a natural boundary and geographic proxy to accommodate wildlife habitat and ecosystem characteristics in the Project area.	Construction through revegetation
Cultural Resources	Project Area of Potential Effect (APE)	Impacts on cultural resources are highly localized and generally confined to the historic property or resource that is affected. Therefore, the geographic scope for cultural resources impacts is limited to the Project APE and encompassing any overlapping effects to cultural resources and historic properties.	Limited to construction duration unless permanent impacts to cultural resources (buried or visual) occur
Land Use and Recreation	1.0 mile surrounding the Project area	Project impacts on general land uses would be restricted to the construction workspaces. Land use in the project areas is mainly agricultural and open land. Therefore, we consider a 1.0-mile distance from the Project for the geographic scope because this will cover any land use/recreational impacts which could be incremental to the Project.	Limited to construction except for areas of permanent land use conversion
Visual Resources	Within the immediate proximity (0.25 mile) of construction activities	The geographic scope for assessing potential cumulative impacts on visual resources was determined to be areas within proximity to the three CSs.	Limited to construction duration
Noise - Construction	NSAs within the immediate proximity (0.25 mile) of construction activities	The geographic scope for assessing potential cumulative impacts on construction noise was determined to be areas within proximity to the three CSs.	Limited to construction duration
Noise - Operation	1.0 mile surrounding above-grade facilities	The geographic scope identifies other projects that will affect the same NSAs within one mile of the Tescott CS.	Long-term

Table 11 Cumulative Impact Analysis Geographic and Temporal Scopes			
Environmental Resource	**Geographic Scope**	**Justification for Geographic Scope**	**Temporal Scope**
Air Quality-Construction	0.25 mile from construction workspaces	Since construction emissions are localized, the geographic scope used to assess potential cumulative impacts on air from construction activities was set at 0.25 mile from the Project workspaces.	Limited to construction duration
Air Quality-Operation	50 km radius from above-grade compression facilities at Tescott CS	The geographic scope adopted the distance used by the EPA for cumulative modeling of large PSD sources during permitting and following 40 CFR 51, appendix W, section 4.1. We consider this a conservative geographic scope for the purpose of identifying other projects which could contribute to a cumulative impact on air quality.	Long-term, through operational duration of projects

The current environment of the Project area reflects a mixture of natural processes and human influences across a range of conditions. Current conditions have been affected by innumerable activities over thousands of years. The CEQ issued an interpretive memorandum on June 24, 2005, regarding analysis of past actions, which stated: "agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.' In order to understand the contribution of past actions to the cumulative effects of the proposed action, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. In this analysis, we generally consider the impacts of past projects within the resource-specific geographic scopes as part of the affected environment (environmental baseline), which was described under the specific resources discussed throughout section B. However, this analysis does include the present effects of past actions that are relevant and useful.

Our review of the estimated Project impacts concludes that nearly all construction impacts would be contained within the extra workspaces. Erosion control measures included in FERC's Plan, for example, would keep disturbed soils within work areas. Consequently, most of the construction impacts would be temporary and localized and are not expected to contribute to regional cumulative impacts. Exceptions exist where the impacts may migrate outside of designated work areas (e.g., construction and operational emissions). The Project is expected to have no impact or a negligible impact on geologic resources and geologic hazards, land use, cultural resources, groundwater, surface water resources and wetland resources, fisheries, and air quality and noise during construction. Therefore, we conclude that the impacts from this Project, when considered cumulatively

with past, present, and reasonably foreseeable projects, would not contribute to significant cumulative impacts on these resources, and these resources will not be discussed further in this section.

Projects Identified Within the Geographic Scope

Inclusion of other actions is based on identifying commonalities of impacts from other actions along with those of the Project. An action must meet the following criteria:

- impact a resource potentially affected by the proposed action;
- cause the impact within all, or part of, the Project vicinity (spatial overlap); and
- cause the impact within all, or part of, the period in which impacts of the Project would occur (temporal overlap).

We attempted to identify projects with discernable impacts, which include infrastructure construction, FERC jurisdictional and non-jurisdictional pipeline projects, commercial and residential developments, and large industrial facilities construction and operation.

Consistent with CEQ guidance, we identified and considered other actions within the appropriate "geographic scopes" identified in table 11. Actions located outside the geographic scopes are not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the Project.

The projects considered in this analysis are listed in table 12. The potential cumulative impacts associated with each resource are discussed in the following subsections.

Table 12 Other Actions Considered in the Cumulative Impacts Analysis for the Proposed Project						
Project	County/State	Description	Impacts within Geographic Scope	Estimated Construction Timeframe	Distance/Direction to Proposed Project	Resources Considered
Past and Present Actions						
Elk Creek Pipeline, ONEOK Partners	Rice County, KS	~900 mile, 20-inch-diameter natural gas liquids line from eastern Montana to Bushton, Kansas. Approximately 4.27 miles of the Elk Creek pipeline in the same HUC-12.	~55 acres for construction and 25 acres during operation; land uses crossed are predominantly agricultural.	Beginning construction in summer—completed by end 2019	0.25 mile south of the Bushton compressor station; shares HUC-12 (010300110203)	Vegetation
Pony Express Pipeline Conversion Project, Tallgrass Interstate Gas Transmission (CP12-495-000)	Ottawa County, KS	Abandon 432.4-mile pipeline segment by sale; construct a new mainline compressor station known as the Tallgrass Compressor Station	Permitted operational emissions of NOx, VOC, PM, SO2, CO, and HAPs	In service	~7,000 feet southwest of Northern's proposed Tescott compressor station	Air quality – operation and noise – operation
Northern M640C Bushton Recoat MP 0.00	Rice County, KS	Recoat approximately 1,600 feet of pipeline	~ 30 acres of industrial land	2016	Inside the Bushton compressor station	Soils
Northern M630 C ILI Mods	Ottawa County, KS	Install new pig launcher for M630C line	~ 2.6 acres of industrial land	July 2018	Inside the Tescott compressor station	Soils
Northern M630 C ILI Mods	Clay County, KS	Install new pig launcher for M630C line	~ 4.0 acres of agricultural and industrial land	July 2018	Inside the Clifton compressor station and field across Gas City Road	Soils and vegetation
Natural Gas Pipeline of	Cloud County, KS	Existing natural gas compressor station	Permitted operational emissions of NOx,	In service	~15.8 miles (34.8 km) from Northern's Tescott	Air quality – operation

Table 12 Other Actions Considered in the Cumulative Impacts Analysis for the Proposed Project						
Project	County/State	Description	Impacts within Geographic Scope	Estimated Construction Timeframe	Distance/Direction to Proposed Project	Resources Considered
America Glasco Station 105			VOC, PM, SO2, CO, and HAPs.		compressor station	
Salina Municipal Solid Waste Landfill	Saline County, KS	Existing solid waste landfill	Permitted operational emissions of VOC, PM, and HAP	In service	~16.0 miles (35.4 km) from Northern's Tescott compressor station	Air quality – operation
SFC Global Supply Chain	Saline County, KS	Existing food production plant	Permitted operational emissions of NOx, VOC, PM, SO2, and CO	In service	~16.4 miles (36.0 km) from Northern's Tescott compressor station	Air quality – operation
Crestwood	Saline County, KS	Existing cabinet production facility	Permitted operational emissions of VOC, PM, and HAP.	In service	~17.6 miles (38.7 km) from Northern's Tescott compressor station	Air quality – operation
NuStar Pipeline Concordia Terminal	Cloud County, KS	Existing products breakout terminal	Permitted operational emissions of VOC, PM, and HAP.	In service	~18.0 miles (39.5 km) from Northern's Tescott compressor station	Air quality – operation
Beloit Municipal Power Plant	Mitchell County, KS	Existing power generation plant	Permitted operational emissions of NOx, VOC, PM, and CO	In service	~18.0 miles (49.7 km) from Northern's Tescott compressor station	Air quality – operation
Future Actions						
Northern M640B New Launcher	Rice County, KS	Install new launcher	~ 6.5 acres of industrial and agricultural land	Spring 2019	Northeast corner of Bushton compressor station and field across 8th Road	Soils and vegetation
Northern Bushton ABA01 A-line disconnect	Rice County, KS	Remove manifolds, valves, flanges and tees	~ 2.2 acres of industrial land	Spring 2019	Northeast corner of Bushton compressor station	Soils
Northern M630B New Launcher/ Receiver	Ottawa County, KS	Install new launcher/receiver in southeast corner of	~ 2.5 acres of industrial land	Spring 2019	Southeast corner of Tescott compressor station	Soils

Table 12 Other Actions Considered in the Cumulative Impacts Analysis for the Proposed Project						
Project	County/State	Description	Impacts within Geographic Scope	Estimated Construction Timeframe	Distance/Direction to Proposed Project	Resources Considered
		Tescott compressor station				
Northern M640D New Launcher	Ottawa County, KS	Install new launcher in northeast corner of Tescott compressor station	~ 2.5 acres of industrial land	Spring 2019	Northeast corner of Tescott compressor station	Soils
Northern Tescott Fuel Gas Heater Relocation	Ottawa County, KS	Relocate existing fuel gas heater	~ 2.5 acres of industrial land	Spring 2019	Inside Tescott compressor station	Soils
Tescott Fuel Gas	Ottawa County, KS	Relocate fuel gas source	~ 2.8 acres of industrial land	July 2019	Inside Tescott compressor station	Soils
Northern M630B New Receiver	Clay County, KS	Install new receiver	~ 3.5 acres of industrial land	Spring 2019	Across Gas City Road and west of Clifton compressor station	Soils and vegetation
Northern M630D New Receiver	Clay County, KS	Install new receiver	~ 1.5 acres of industrial land	Spring 2019	North end of Clifton compressor station	Soils
Northern New Clifton Weld Shop	Clay County, KS	Install new building for welding services	~ 17.5 acres of agricultural land	Spring 2019	200 feet east of south end of Clifton compressor station	Soils and vegetation
M640 A-line salvage project	Ellsworth, Lincoln, Ottawa and Rice Counties, KS	Reclamation of approximately 45.64 miles of M640 A-line within 75-foot-wide ROW; 3.7 miles share HUC-12 with Tescott compressor station and 0.85 mile shares HUC-12 with	~41 acres of primarily agricultural land	2020-2022	Between Bushton and Tescott compressor stations (Figure 1-1)	Soils and vegetation

Table 12 Other Actions Considered in the Cumulative Impacts Analysis for the Proposed Project						
Project	County/State	Description	Impacts within Geographic Scope	Estimated Construction Timeframe	Distance/Direction to Proposed Project	Resources Considered
		Bushton compressor station				
M630 A-line salvage project	Clay, Cloud and Ottawa Counties, KS	Reclamation of approximately 47.12 miles of M630 A-line within 75-foot-wide ROW; 1.3 miles share HUC-12 with Clifton compressor station and 1.8 miles share HUC-12 with Tescott compressor station	~28 acres of primarily agricultural land	2020-2022	Between Clifton and Tescott compressor stations (Figure 1-1)	Soils and vegetation

Potential Cumulative Impact on Specific Resources within the Project Area

Vegetation and Wildlife

We used the HUC-12 watershed as the geographic scope for impacts on vegetation and wildlife. The construction activities associated with removal of vegetation and the potential for the establishment of invasive plant species occurring during the same timeframe and area can result in cumulative impacts.

Contributions of the Proposed Action to cumulative impacts include removal of existing vegetation and the loss and fragmentation of wildlife habitat. Approximately 55.3 acres of industrial/commercial land would be temporarily affected by the Project (see section B.4.2). All other areas affected by the Project are developed and have low suitability for wildlife. The Project would have no effect on state-listed species and threatened and endangered species potentially occurring within the Project area (see section B.4.2).

Construction and operation of the CS associated with the Project, as well as Northern's other projects, the DKM salvage of the A-Line, and various commercial and industrial developments listed in table 12, would be located within the same HUC-23 watershed as the Project. These projects may also involve the conversion of existing land uses to industrial/developed land and would have temporary and permanent vegetation impacts. The conversion of land to a developed land use would result in cumulative impacts on vegetation and wildlife habitat. However, this impact would be minor as the Project areas are co-located as much as possible with other developed land uses (e.g., aboveground facilities and rights-of-way).

Impacts associated with projects within the geographic scope are generally anticipated to be similar to the Project (temporary construction impacts), with most habitat types returning to pre-construction conditions following the completion of construction activities. Therefore, due to the abundance of open land in the geographic scopes and the limited suitability of actively cultivated areas to serve as wildlife habitat, cumulative impacts on vegetation and wildlife habitat are anticipated to be minimal. As discussed in section B, the Project's impacts on vegetation and wildlife are expected to be largely temporary and minor. While some areas may be gravel–covered following construction, this would occur within existing CS yards. Further, the other identified projects are expected to implement best management practices similar to those proposed by Northern and would comply with applicable permit conditions that would ensure proper stabilization and restoration. Given that only limited vegetation removal within existing CS yards is required, and that less than 0.1 acre of PEM wetland would be disturbed for disconnect activities, which is expected to be restored to preconstruction conditions relatively quickly (within two growing seasons), the Project is expected to contribute little to no cumulative impacts on vegetation and wildlife with the other projects identified within the geographic scope.

Soils

Construction of the Project will result in temporary, localized impacts on soils as a result of ground-disturbing activities. Construction activities will temporarily impact approximately 48 acres of soils classified as prime farmland; however, the impacted soils are within industrial facilities and are not available for agricultural use. No highly erodible soils will be impacted by construction or operation of the Project. Inside the Tescott CS, less than five acres of land will be converted to new gravel cover. Several other actions inside Northern's three compressor are also adding small areas (less than two acres) of gravel. These projects would not be concurrent and overall would have minimal impacts on soil as they are inside existing natural gas facilities. As the Project's impact on soils would be highly localized and limited primarily to the footprint during the period of active construction, cumulative impacts on soils would only occur if other geographically overlapping or abutting projects were constructed at the same time (and place) as the Project (and the exposure of soils to erosion and sedimentation) occurs. Northern's blanket projects and the DKM salvage of Northern's abandoned pipeline segments would overlap or partially overlap the Project workspaces. DKM would install erosion controls and reseed all temporary workspaces for its project. Northern would construct its blanket projects in accordance with the erosion control measures within the FERC Plan which would minimize the potential for impacts on soils. Therefore, we conclude that cumulative impacts on soils would not be significant.

Air and Noise Quality-Operations

Seven facilities with Title V air permits were identified within the geographic and temporal scopes for air quality of the Tescott CS, where the new compressor unit would be added as part of Northern's Project. Of these, the Tallgrass CS is also within the geographic and temporal scopes for operational noise. The estimated operational emissions associated with the facilities identified within the geographic scope are summarized in table 13.

Table 13
Estimated Operational Emissions Summary for Other Actions

Facility	Emissions (tons per year)						
	Criteria Pollutants						Total for All HAPS
	No_x	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$	
Tallgrass Interstate Gas Transmission (CP12-495-000)	107.64	96.56	109.93	0.25	0.05	0.05	17.11

Natural Gas Pipeline of America Glasco Station 105	816.48	204.06	24.90	0.85	8.62	8.62	10.79
Salina Municipal Solid Waste Landfill	0.00	0.00	7.62	0.01	0.01	0.01	5.03
SFC Global Supply Chain	11.96	10.04	80.69	0.07	0,91	0.91	N/A
Crestwood	0.00	N/A	76.99	N/A	1.46	1.46	54.23
NuStar Pipeline Concordia Terminal	N/A	N/A	97.67	N/A	N/A	N/A	5.75
Beloit Municipal Power Plant	8.14	3.50	0.60	0.00	0.05	0.05	
Bushton to Clifton A-line Abandonment Project	182.1	68.8	20.3	7.9	8.2	8.2	<10

Air quality impacts from operation of the Tescott CS would be minimized by the use of equipment, emissions controls, and operating practices that meet or exceed best management practices. Measures proposed to minimize air quality impacts include the use of clean burning natural gas as the fuel for all combustion devices. The turbine would also be equipped with SoLoNOx™ emissions control technology. This technology incorporates low NO_X combustors to limit emissions of NO_X and also limits emissions of CO. Compliance with federal and state air regulations and state permit requirements would ensure that air quality impacts would be minimized during installation and operation of the additional compressor unit at the Tescott CS. Other actions identified within the geographic scope would also be required to adhere to state and federal air regulations. Operation of the Project would not have a significant cumulative impact on air quality.

The project would produce operational noise that could be impacted by projects in the area, mainly the Tallgrass CS. Both stations would have to adhere to the FERC noise limits of 55dBA during operation. With the established noise regulations and implementation of the mitigation measures described in section B.7.2 of the EA, we find that there would be no significant contribution to cumulative operational noise in the area.

In conclusion, when the impacts of the Project are added to other projects in the vicinity, we conclude that the cumulative impacts would be minimal.

10. NON-JURISDICTIONAL FUTURE USE

As described previously, if the Project abandonment is approved, Northern intends to sell the pipeline to DKM who intends to reclaim most of the facilities for salvage. Because the A-line would no longer be used for the interstate transportation of natural gas after the sale is complete, the pipeline and associated facilities would no longer be under

the jurisdiction of FERC. The following section describes general impacts that would occur from the overall DKM Project, whereas the cumulative impact analysis above assessed only the portion of the DKM Project within the geographic scope of the Project. Although the Commission has no authority to approve or deny the DKM Project and no ability to require any avoidance or minimization of related impacts, we provide information here to inform stakeholders and decision-makers.

After assuming ownership of the A-line, DKM intends to reclaim most of the abandoned pipeline for salvage. DKM would not be allowed to commence reclamation of the A-line or J-line until Northern has completed its disconnection activities, as described herein, and complied with the conditions of FERC's Order Issuing Certificate/Abandonment Authorization for the Project. Northern's Project would be deemed complete when successful restoration of Project workspaces has been completed in accordance with the Plan. Northern anticipates DKM would tentatively commence salvage operations in July 2020.

The Purchase and Sale Agreement (PSA) between Northern and DKM, executed on September 27, 2018, outlines certain environmental provisions agreed upon by both parties that are relevant to the assessment of potential impacts. DKM would be required to obtain all applicable permits and approvals from federal, state, and local regulatory agencies prior to initiating activities, and to abide by permit requirements during removal of the pipeline. Northern has stated that DKM would use a 75-foot-wide corridor centered on the pipeline, and reclamation activities would occur within Northern's easement. Prior to removal of the pipeline, DKM would contact the state's One Call system, Kansas811, as appropriate, to locate, identify, and flag existing underground utilities to prevent accidental damage during reclamation activities. DKM would use existing public and private roads and the A-line right of way to gain access to the work area. Temporary gates would be installed to allow access at fences.

Grading may occur in areas where the existing topography must be modified to create a safe and level working surface. Generally, the pipeline would be removed with trackhoes equipped with low ground-weight construction equipment. As the pipeline is lifted from the trench, it would be placed on cribbing adjacent to the trench. The pipeline would be continuously removed and breaks in the pipeline would be determined by foreign line crossings, road crossings, wetland/waterbody crossings and points of inflection where bends in the pipeline preclude continuous removal. Once placed on cribbing, the pipeline would be cut into sections as needed for transport and storage. Pipe joints would be stacked within the corridor in designated load-out areas. Semi-trucks and trailers equipped with custom pipe stakes would be used to safely haul the pipe joints from the corridor.

DKM would reclaim the pipeline within two years of the executed purchase and sale agreement and regulated substances in the pipeline (such as naturally occurring

radioactive materials, pipeline coatings comprised of asbestos containing material, and PCBs) would be appropriately managed. Per the PSA, DKM and the respective landowners may agree that the facilities may be abandoned in-place. Any facilities left in-place based on landowner preference would be transferred to and owned by the respective landowners. DKM would also abandon the pipeline in-place beneath the seven National Register of Historic Places (NRHP)-eligible and unevaluated historic properties crossed by the A-line. Other segments of the pipeline (e.g., pipe at road crossings, wetlands and waterbodies) may also not be removed. At these locations, the pipeline would instead be cut and capped/grouted, as deemed necessary. If DKM elects to remove the pipeline segments under environmentally sensitive areas, DKM would be responsible for obtaining all applicable permits and authorizations.

Following salvage operations, DKM would restore the land to pre-existing conditions. Backfill operations would begin immediately following removal of the pipeline. The trench would be backfilled using a dozer equipped with low ground-weight equipment. The backfill operations would keep pace with the pipeline removal to minimize the amount of trench left open overnight. Any area near a trench left open overnight would be secured with safety fencing. Cleanup would be conducted in conjunction with backfill operations and land contours would be restored to pre-removal conditions. In accordance with the terms of the PSA, DKM would be responsible for coordinating reclamation activities with landowners, and would assume all costs, risks, and liabilities for damages to private property.

Northern conducted a desktop review of publicly available data to identify the potential environmental effects of DKM's planned pipeline reclamation. DKM Project activities and associated land requirements are summarized below in table 14.

Table 14
Summary of Potential Environmental Effects of Pipeline Reclamation

Facility/Resource	Unit of	Potential Effects[a]
M640A MAINLINE		
Length	(miles)	45.64
Total Impact	(acres)	414.90
Wetlands		
Forested/Shrub Wetlands	(acres)	0.17
Emergent Wetlands	(acres)	2.48
Pond	(acres)	1.17
Riverine	(acres)	1.52
Waterbodies		
Perennial	(number)	7
Ephemeral	(number)	0
Intermittent	(number)	70

Table 14 Summary of Potential Environmental Effects of Pipeline Reclamation		
Facility/Resource	Unit of	Potential Effects[a]
Land Cover/Use		
Agricultural	(acres)	168.97
Developed	(acres)	15.45
Forested	(acres)	2.54
Open Land	(acres)	221.27
Open Water	(acres)	1.33
Land Ownership		
Federal	(acres)	0
State	(acres)	0
County/Local	(acres)	0
Residences within 50 feet	(number)	0
Cultural Resources Sites Crossed		
NRHP-eligible	(number)	0
Not NRHP-eligible	(number)	0
Unassessed	(number)	3
M630A MAINLINE		
Length	(miles)	47.12
Total Impact	(acres)	428.4
Waterbodies		
Perennial	(number)	11
Ephemeral	(number)	0
Intermittent	(number)	70
Land Cover/Use		
Agricultural	(acres)	188.0
Developed	(acres)	18.10
Forested	(acres)	7.30
Open Land	(acres)	205.10
Open Water	(acres)	3.13
Land Ownership		
Federal	(acres)	0
State	(acres)	0
County/Local	(acres)	0
Residences within 50 feet	(number)	
Cultural Resources Sites Crossed		
NRHP-eligible	(number)	0
Not NRHP-eligible	(number)	0
Unassessed	(number)	1
M630 J-LINE		

Table 14 Summary of Potential Environmental Effects of Pipeline Reclamation		
Facility/Resource	Unit of	Potential Effects[a]
Length	(miles)	15.74
Total Impact	(acres)	143.1
Wetlands		
Forested/Shrub Wetlands	(acres)	0.00
Emergent Wetlands	(acres)	0.65
Pond	(acres)	0.00
Riverine	(acres)	0.88
Waterbodies		
Perennial	(number)	1
Ephemeral	(number)	0
Intermittent	(number)	25
Land Cover/Use		
Agricultural	(acres)	134.08
Developed	(acres)	0.91
Forested	(acres)	1.94
Open Land	(acres)	4.54
Open Water	(acres)	0.10
Land Ownership		
Federal	(acres)	0
State	(acres)	0
County/Local	(acres)	0
Residences within 50 feet	(number)	0
Cultural Resources Sites Crossed		
NRHP-eligible	(number)	0
Not NRHP-eligible	(number)	0
Unassessed	(number)	0

[a] Acreages are based on an assumed 75-foot-wide temporary construction right of way, centered on the existing A-line, and do not include ATWS, access roads, or contractor yards.

Sources: FWS National Wetlands Inventory; USGS National Hydrography Dataset; National Land Cover Database; Protected Areas Database of the United States; IDNR Conservation and Recreation Lands

C. ALTERNATIVES

As required by NEPA and Commission policy, we identified and evaluated alternatives to the specific natural gas transmission facilities (and abandonment activities)

comprising the Project as proposed by the applicant in their application and associated supplements. Specifically, we evaluated the no action and compressor site alternatives.

Alternatives were evaluated using a specific set of criteria. The evaluation criteria applied to each alternative include a determination whether the alternative:

- meets the objective of the proposed Project;
- is technically and economically feasible and practical; and
- offers a significant environmental advantage over the proposed Project.

Under the no-action alternative, the Project would not be completed, and all direct environmental impacts would not occur. However, in order to comply with DOT pipeline safety regulations, Northern must choose to either continue maintenance of the pipeline or abandon the pipeline. Continued operation of the A-line facilities would include, among other things, maintenance digs to inspect, repair, and/or replace the pipeline which would have environmental impacts of their own and, due to their ongoing nature, would likely exceed the impacts associated with abandoning the pipeline. As the pipeline is not needed to support current customer requirements, it would not be practical to implement the no-action alternative.

Under the no-action alternative, Northern would not install Unit 6 at the Tescott CS and none of the impacts associated with its construction or operation would occur. However, the Project objectives would not be met. Northern would not be able to meet the Project's stated need in section A.2, including improved reliability and providing safe gas deliveries throughout its market area.

As discussed in section B above, installation of Unit 6 at the Tescott CS would occur within existing station facilities and previously disturbed areas. Our review of the Project found that environmental impacts associated with the compressor construction and operation have been minimized. Based on the limited environmental impact associated with this Project, we did not identify any unresolved resource conflicts that would present a need to examine further site or system alternatives. Additionally, no comments were received regarding resources that would be impacted by the Project that would drive further evaluation of siting alternatives. Because the impacts associated with the proposed Project are not significant, we did not evaluate additional alternatives. Therefore, we conclude that the proposed Project is the preferred alternative to meet the Project objectives.

D. STAFF'S CONCLUSION AND RECOMMENDATIONS

Based on the analysis contained in this EA, we have determined that if Northern abandons and constructs the facilities in accordance with its application and staff's

mitigation measures listed below, approval of the proposed Project would not constitute a major federal action significantly affecting the quality of the human environment.

The staff recommends that the Commission Order contain a finding of no significant impact. If the Commission approves the proposed Project, we recommend that the Commission Order include the following specific conditions:

1. Northern shall follow the abandonment and construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the environmental assessment (EA), unless modified by the Order. Northern must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
    b. justify each modification relative to site-specific conditions;
    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
    d. receive approval in writing from the Director of OEP **before using that modification**.

2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during activities associated with abandonment, construction, and restoration of the Project. This authority shall allow:

    a. the modification of conditions of the Order; and
    b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project abandonment and construction.

3. **Prior to any abandonment or construction activities**, Northern shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel would be informed of the EI's authority and have been or would be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized abandonment activities and facility locations shall be as shown in the EA. **As soon as they are available, and before the start of abandonment or construction**, Northern shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for

all facilities and abandonment activities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

5. Northern shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all workspace rearrangements or facility relocations, staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

   This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.
   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;
   b. implementation of endangered, threatened, or special concern species mitigation measures;
   c. recommendations by state regulatory authorities; and
   d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the Order and before abandonment and construction activities begin**, Northern shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Northern must file revisions to the plan as schedules change. The plan shall identify:

   a. how Northern will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
   b. how Northern will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and

specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned, and how Northern will ensure that sufficient personnel are available to implement the environmental mitigation;
d. company personnel, including EIs and contractors, would receive copies of the appropriate material;
e. the location and dates of the environmental compliance training and instructions Northern would give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change),
f. the company personnel (if known) and specific portion of Northern's organization having responsibility for compliance;
g. the procedures (including use of contract penalties) Northern will follow if noncompliance occurs; and
h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

    i. the completion of all required surveys and reports;
    ii. the environmental compliance training of onsite personnel;
    iii. the start of construction; and
    iv. the start and completion of restoration.

7. Northern shall employ at least one EI. The EI shall be:

    a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
    b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
    c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
    d. a full-time position, separate from all other activity inspectors;
    e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
    f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, Northern shall file updated status reports with the Secretary on a **biweekly** basis until all abandonment, construction, and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. an update on Northern's efforts to obtain any necessary federal authorizations;
b. the construction status of the project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
d. a description of the corrective actions implemented in response to all instances of noncompliance;
e. the effectiveness of all corrective actions implemented;
f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
g. copies of any correspondence received by Northern from other federal, state, or local permitting agencies concerning instances of noncompliance, and Northern's response.

9. Northern must receive written authorization from the Director of OEP **before commencing abandonment or construction of any Project facilities**. To obtain such authorization, Northern must file with the Secretary documentation that it has received all authorizations required under federal law (or evidence of waiver thereof).

10. Northern must receive written authorization from the Director of **OEP before placing the new compressor unit at the Tescott Compressor Station into service**. Such authorization would only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

11. **Within 30 days of completing Project abandonment and construction**, Northern shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been abandoned and constructed in compliance with all applicable conditions, and that continuing activities would be consistent with all applicable conditions; or
    b. identifying which of the conditions in the Order Northern has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly

implemented, if not previously identified in filed status reports, and the reason for noncompliance.

12. Northern shall file noise surveys with the Secretary **no later than 60 days** after placing the authorized unit at the Tescott Compressor Station in service. If a full load condition noise survey is not possible, Northern shall file an interim survey at the maximum possible horsepower load and file the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at the station under interim or full power load conditions exceeds an Ldn of 55 dBA at any nearby NSAs, Northern shall:

    a. file a report with the Secretary on what changes are needed, for review and written approval by the Director of OEP;
    b. install additional noise controls to meet that level **within 1 year** of the in-service date; and
    c. confirm compliance with the Ldn of 55 dBA requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

13. **Prior to any abandonment activities**, Northern shall file the following information with the Secretary, for review and written approval by the Director of OEP:
    a. identify any known facilities to be disturbed having ACMs;
    b. develop protocols to comply with the appropriate requirements to identify ACMs that might be encountered;
    c. if facilities with ACMs would be disturbed, identify how any abandoned ACM-contaminated material would be properly disposed of; and
    d. develop worker protection protocols for handling ACM-contaminated materials.

E. REFERENCES CITED

Castaneda, Christopher J.
2002 *Natural Gas Comes to Iowa: What It Meant When the A-Line Arrived*. On file at the Iowa SHPO.

Kansas Department of Agriculture. 2019. Groundwater Management Districts. https://www.agriculture.ks.gov/divisions-programs/dwr/managing-kansas-water-resources/groundwater-management-districts. Accessed August 2019.

Kansas Department of Health and the Environment (KDHE). 2019a. KDHE Reported Spill Finder. Database. https://maps.kdhe.state.ks.us/ksberspill/. Accessed February 2019.

KDHE. 2019b. KDHE Environmental Interest Finder. Database. https://maps.kdhe.state.ks.us/keif/. Accessed February 2019.

Kansas Geological Survey (KGS). 2010. Smoky Hills. http://geokansas.ku.edu/smoky-hills. Accessed August 2019.

KGS. 2019a. Kansas Oil and Gas Interactive Map. http://maps.kgs.ku.edu/oilgas/index.cfm. Accessed February 2019.

KGS. 2019b. Water Well Completion Records (WWC5) Database. http://www.kgs.ku.edu/Magellan/WaterWell/. Accessed February 2019.

Kansas Historical Society. 2019. Mining in Kansas. https://www.kshs.org/kansapedia/mining-in-kansas/15603. Accessed July 2019.

Miller, J.A and C.L. Appel. 1997. Ground Water Atlas of the United States: Kansas, Missouri, and Nebraska. USGS Hydrologic Atlas HA 730-D.

Natural Resources Conservation Service (NRCS). 2018. Web Soil Survey Geographic Database. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed July 2019.

NESHAP (National Emission Standards for Hazardous Air Pollutants) Database. https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9

Potter, Alan R., Shannon R. Ryan, and Janice A. McLean
Northern Natural Gas Bushton to Clifton A-Line Abandonment Project Cultural Resources Report 1-4: *Overview Report and Request for a Determination of Eligibility for the 45.64-mile Bushton to Tescott A-Line Segment in Ellsworth, Lincoln, Ottawa, and Rice Counties, Kansas.* February 2019.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. TR Y- 87-1. Vicksburg, MS: Environmental Laboratory, U.S. Army Corps of Engineers Waterways Experiment Station.

USACE 1991, "Questions and Answers on the 1987 Manual," Memorandum from John F. Study Dated October 7, 1991.

USACE, 1992, "Clarification and Interpretation of the 1987 Manual," Memorandum from Major General Arthur E. Williams Dated March 6, 1992.

USACE, 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Environmental Protection Agency (EPA). 2019a. Facility Registry Service. Available online at http://www.epa.gov/enviro/facility-registry-service-frs. Accessed July 2019.

EPA. 2019b. Sole Source Aquifers. https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b. Accessed August 2019.

U.S. Fish and Wildlife Service (FWS). Environmental Conservation Online System. Species Profile for Piping Plover (Charadrius melodus). https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B079. Accessed September 10, 2019.

FWS. Environmental Conservation Online System. Species Profile for Piping Plover (Charadrius melodus). https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B079. Accessed September 10, 2019.

U.S. Geological Survey (USGS). 2011. Mineral Resources Data System. https://mrdata.usgs.gov/mrds/. Accessed July 2019.

Walters, Robert F. "Land Subsidence in Central Kansas Related to Salt Dissolution," State Geological Survey of Kansas Bulletin 214. February 1978.

West, R.R., Miller, K.B., and Watney, W.L. "The Permian System in Kansas," State Geological Survey of Kansas Bulletin 257. April 2010.

Zeller, D. E. "The Stratigraphic Succession in Kansas" Edited by D. E. Zeller. Kansas Geological Survey Bulletin 189. December 1968.

F. LIST OF PREPARERS

Crumpton, Christine – Surface Water, Wetlands, Wildlife, Vegetation, Special Status Species

M.S., Environmental Management, 2013, Samford University
B.S., Biology, 2012, Stillman College

Jensen, Andrea – Geology, Soils, Groundwater Resources

B.S., Environmental Geology, 2012, College of William and Mary

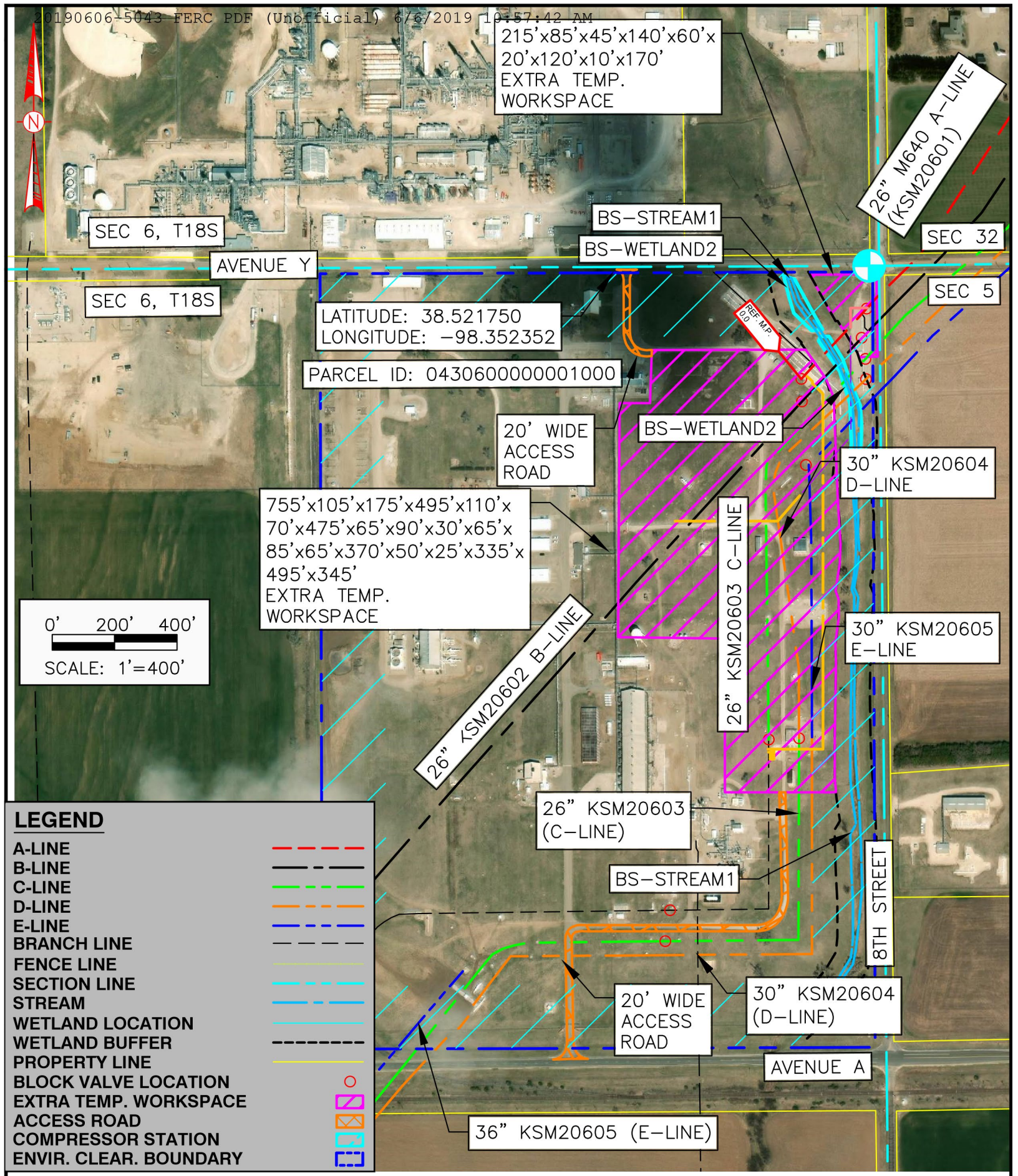
McDaniel, Nina - Air Quality, Noise, Safety and Reliability

M.S. Engineering Management, 2012, University of New Orleans
B.S. Civil Engineering, 2010, University of New Orleans

Wazaney, Brad – Project Manager, Cultural Resources

Ph.D., Anthropology, 2006, Washington State University
M.A., American Studies, 2001, University of Wyoming
B.A., History, 1996, Old Dominion University

APPENDIX A: WORKSPACES REQUIRED FOR THE A-LINE ABANDONMENT PROJECT



LEGEND

- A-LINE
- B-LINE
- C-LINE
- D-LINE
- E-LINE
- BRANCH LINE
- FENCE LINE
- SECTION LINE
- STREAM
- WETLAND LOCATION
- WETLAND BUFFER
- PROPERTY LINE
- BLOCK VALVE LOCATION
- EXTRA TEMP. WORKSPACE
- ACCESS ROAD
- COMPRESSOR STATION
- ENVIR. CLEAR. BOUNDARY

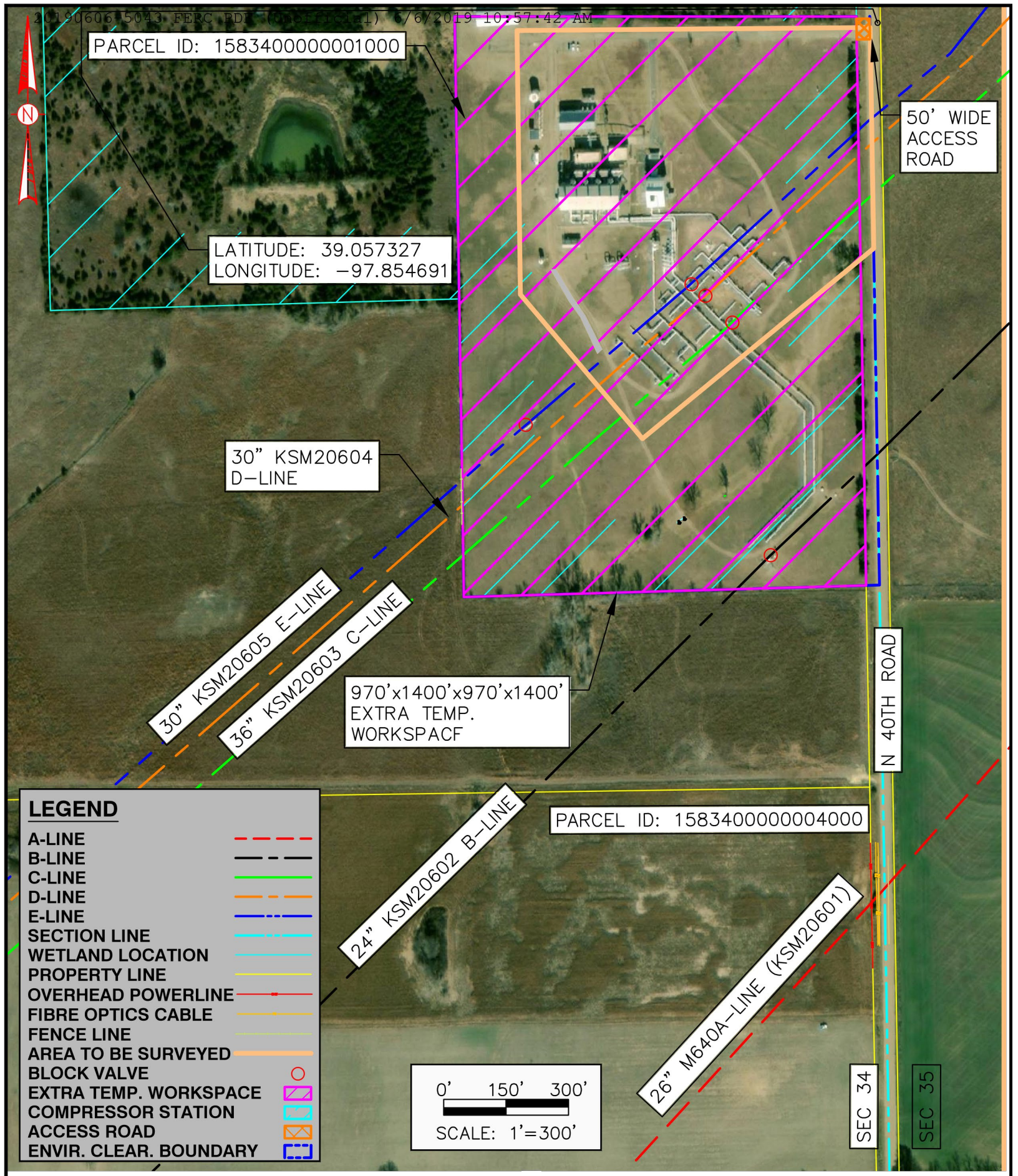
BUSHTON COMPRESSOR STATION

Northern Natural Gas
A Berkshire Hathaway Energy company

BUSHTON TO CLIFTON A-LINE ABANDONMENT PROJECT AERIAL OVERVIEW SEC. 6, T18S, R9W RICE COUNTY, KANSAS

Fig 1-4

Issue For Prelim
Sheet AR-01
Date: 2/12/19
Scale: 1:400



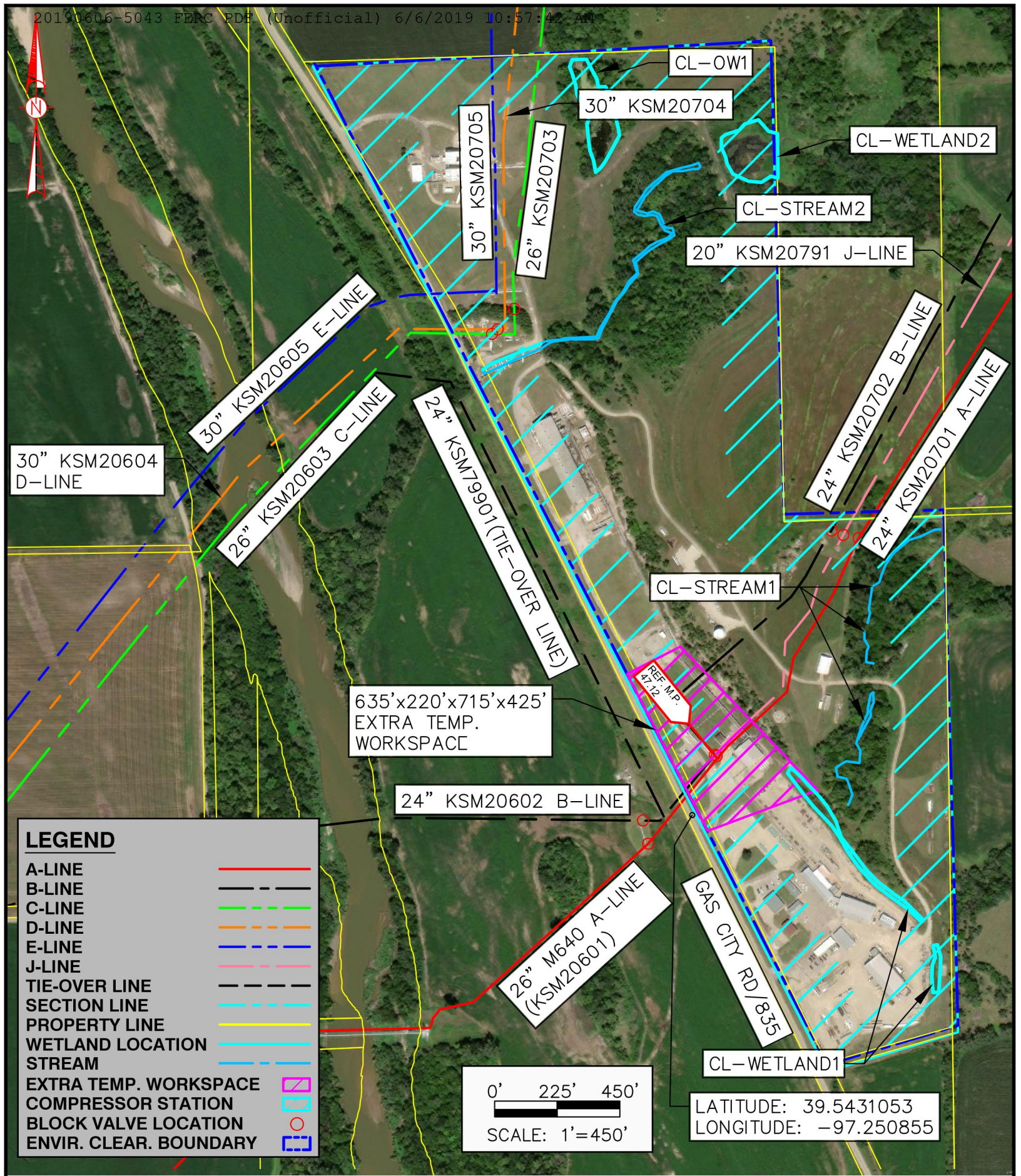
TESCOTT COMPRESSOR STATION

Northern Natural Gas
A Berkshire Hathaway Energy company

BUSHTON TO CLIFTON A-LINE ABANDONMENT PROJECT
AERIAL OVERVIEW
SEC. 34, T11S, R5W
OTTAWA COUNTY, KANSAS

Fig 1-4

Issue For Prelim
Sheet AR-01
Date: 2/13/19
Scale: 1:300



CLIFTON COMPRESSOR STATION

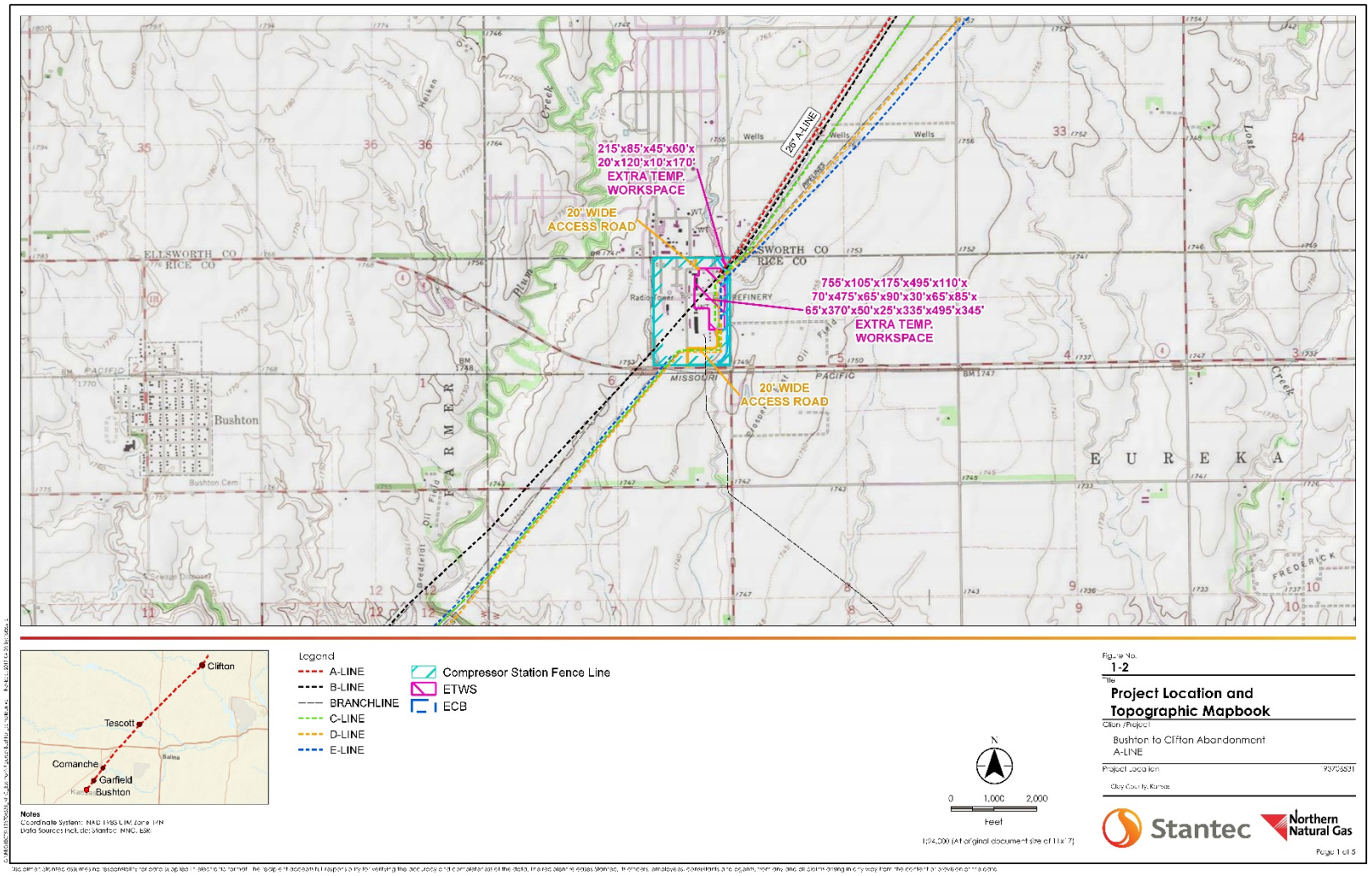
Northern Natural Gas
A Berkshire Hathaway Energy company

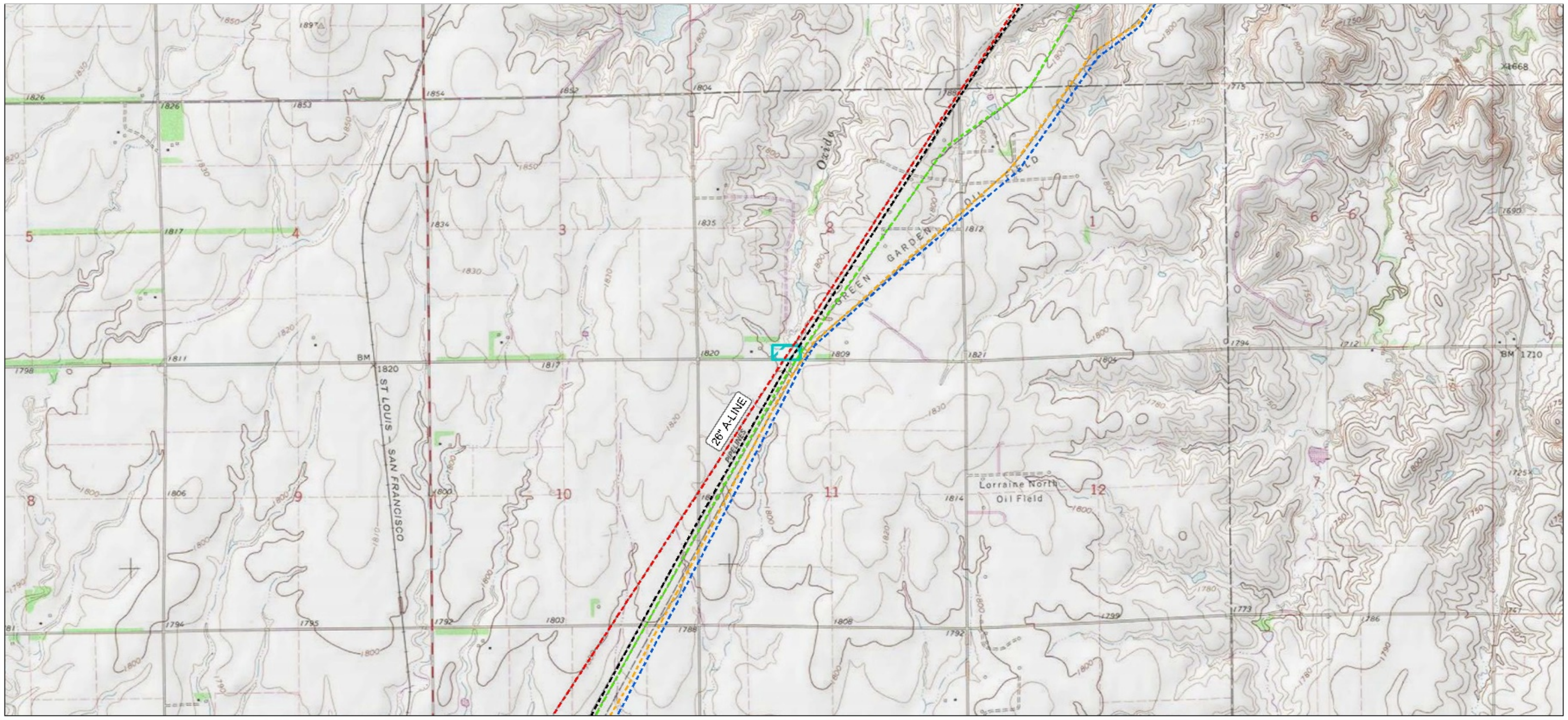
BUSHTON TO CLIFTON A-LINE ABANDONMENT PROJECT
AERIAL OVERVIEW
SEC. 7, T6S, R2E
CLAY COUNTY, KANSAS

Fig 1-4

Issued For Prelim
Sheet AR-01
Date: 2/12/19
Scale: 1:450

APPENDIX B: PROJECT AERIAL MAPPING


215'x85'x45'x60'x
20'x120'x10'x170'
EXTRA TEMP.
WORKSPACE
20' WIDE
ACCESS ROAD
28" A-LINE
755'x105'x175'x495'x110'x
70'x475'x65'x90'x30'x65'x85'x
65'x370'x50'x25'x335'x495'x345'
EXTRA TEMP.
WORKSPACE
20' WIDE
ACCESS ROAD
ELLSWORTH CO
RICE CO
Bushton
FARMER
EUREKA
Clifton
Tescott
Comanche
Garfield
Bushton
Salina
Legend
A-LINE
B-LINE
BRANCHLINE
C-LINE
D-LINE
E-LINE
Compressor Station Fence Line
ETWS
ECB
N
0 1,000 2,000
feet
1:24,000 (At original document size of 11x17)
Fig. No.
1-2
Title
Project Location and
Topographic Mapbook
Client/Project
Bushton to Clifton Abandonment
A-LINE
Project Location
93705831
City/County, Kansas
Stantec
Northern Natural Gas
Page 1 of 5
Notes
Coordinate System: NAD 1983 UTM Zone 14N
Data Sources Include: Stantec, HNG, Esri



Notes
Coordinate System: NAD 1983 UTM Zone 14N
Data Sources Include: Stantec, NNG, ESRI

Legend
- A-LINE
- B-LINE
- C-LINE
- D-LINE
- E-LINE
- Compressor Station Fence Line

N

0 1,000 2,000
Feet

1:24,000 (At original document size of 11x17)

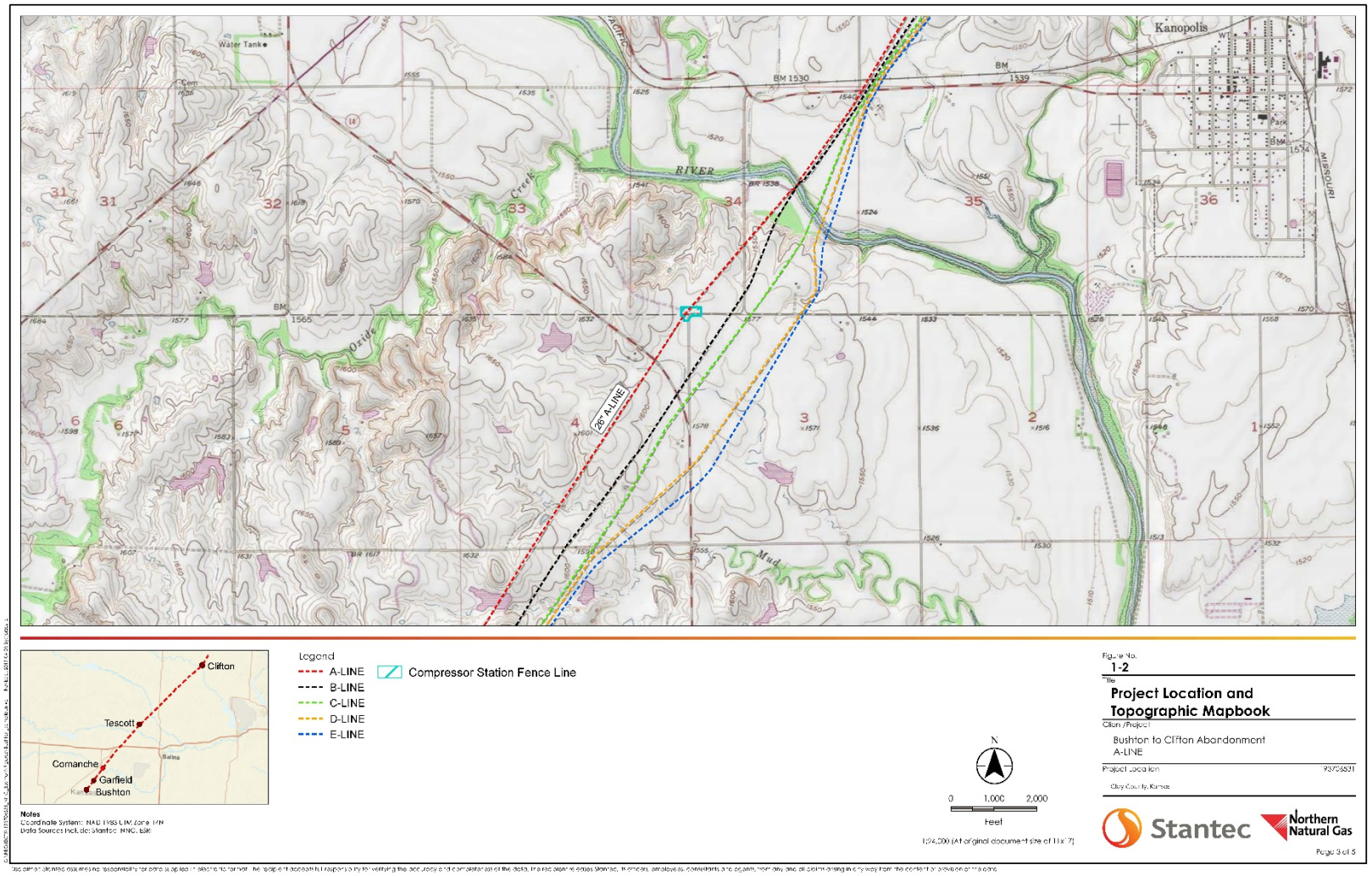
Figure No.
1-2

Title
Project Location and Topographic Mapbook

Client/Project
Bushton to Clifton Abandonment
A-LINE

Project Location 193706531
Clay County, Kansas

Page 2 of 5


Kanopolis
Water Tank
BM 1530
BM 1539
RIVER
Creek
MISSOURI
BM 1565
Mud
28" A-LINE
Cliffton
Tescott
Comanche
Garfield
Bushton
Salina
Legend
A-LINE
B-LINE
C-LINE
D-LINE
E-LINE
Compressor Station Fence Line
Notes
Coordinate System: NAD 1983 UTM Zone 14N
Data Sources Include: Stantec, NNG, Esri
N
0 1,000 2,000
feet
1:24,000 (At original document size of 11x17)
Figure No.
1-2
Title
Project Location and Topographic Mapbook
Client/Project
Bushton to Cliffton Abandonment
A-LINE
Project Location
93705831
City/County: Kansas
Stantec
Northern Natural Gas
Page 3 of 5