



**Federal Energy
Regulatory
Commission**

**Office of
Energy Projects
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East Cheyenne Gas Storage, LLC

Docket No. CP18-11-000

West Peetz and Lewis Creek Amendment Project

Environmental Assessment

Washington, DC 20426

Environmental Assessment

East Cheyenne Gas Storage, LLC

West Peetz and Lewis Creek

Amendment Project

CP18-11-000

TABLE OF CONTENTS

	<u>Page</u>
A. PROPOSED ACTION	1
1.0 Introduction	1
2.0 Project History	2
3.0 Purpose and Need	3
4.0 Scope of this Environmental Assessment	4
5.0 Proposed Facilities	4
6.0 Public Involvement	7
7.0 Land Requirements	7
8.0 Construction, Operation and Maintenance	10
8.1 Pipeline Construction.....	10
8.2 Storage Well and Well Pad Construction	11
8.3 Hydrostatic Testing	12
8.4 Special Construction Techniques.....	12
9.0 Permits and Approvals	13
10.0 Nonjurisdictional Facilities	15
B. ENVIRONMENTAL ANALYSIS	16
1.0 Geology and Soils	16
1.1 Geology.....	16
1.2 Soils.....	18
2.0 Water Resources	20
2.1 Groundwater.....	20

2.2 Surface Water and Wetlands	22
3.0 Vegetation and Wildlife	22
3.1 Vegetation.....	22
3.2 Wildlife	22
3.3 Special Status Species.....	23
4.0 Land Use, Recreation and Visual Resources	25
4.1 Land Use	25
5.0 Cultural Resources	28
6.0 Air and Noise Quality	29
6.1 Existing Environment	29
6.2 Regulatory Requirements.....	30
6.3 State Air Quality Regulations	30
6.4 Construction Emissions Impacts and Mitigation	31
6.5 Noise	32
6.6 Federal Noise Regulations	32
6.7 State Noise Regulations	33
6.8 Ambient Noise Conditions.....	33
6.9 Construction Noise Impacts and Mitigation	33
7.0 Reliability and Safety	34
7.1 Safety Standards.....	35
8.0 Cumulative Impacts	36
8.1 Projects Identified Within the Geographic Scope.....	36
8.2 Potential Cumulative Impacts of the Proposed Action	38
C. ALTERNATIVES	44
1.0 No-Action Alternative	45
2.0 System and Storage Alternatives	45
D. STAFF’S CONCLUSION AND RECOMMENDATIONS.....	46
E. REFERENCES.....	51
F. LIST OF PREPARERS	53

LIST OF TABLES

	<u>Page</u>
Table 1	Revised Wells West Peetz and Lewis Creek Amendment Project5
Table 2	Land Requirements West Peetz and Lewis Creek Amendment Project7
Table 3	Required Permits and Permit Approvals Lewis Creek Amendment13
Table 4	Registered Water Wells Lewis Creek Amendment21
Table 5	Land Use Impacts.....26
Table 6	Total Construction Emission of the Project31
Table 7	Temporary Noise Impacts from Project Construction33
Table 8	Geographic Scope of Cumulative Impacts.....36
Table 9	Past and Current Developments/Actions/Projects for Cumulative Impacts38
Table 10	Reasonably Foreseeable Developments/Actions/Projects for Cumulative Impacts Analysis.....38

APPENDICES

	<u>Page</u>
Appendix A	Project Figures53

**TECHNICAL
ABBREVIATIONS AND ACRONYMS**

AMSL	above mean sea level
APE	area of potential impact
ATWS	additional temporary workspace
Bcf	billion cubic feet
bgs	below ground surface
CAA	Clean Air Act
CDOW	Colorado Division of Wildlife
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
COGCC	Colorado Oil and Gas Conservation Commission
Commission	Federal Energy Regulatory Commission
CRP	Conservation Reserve Program
dBA	decibel (A-weighted scale)333
DOT	U.S. Department of Transportation
EA	environmental assessment
East Cheyenne	East Cheyenne Gas Storage, LLC
EI	Environmental Inspector
EPA	Environmental Protection Agency
EO	Executive Order
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FSA	Farm Service Agency
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutants
I/W	injection/withdrawal
L _{dn}	day-night sound level
L _{eq}	24-hour equivalent sound level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NGA	Natural Gas Act
NOI	Notice of Intent
NO _x	nitrogen oxide
NSA	noise sensitive area
OEP	Office of Energy Projects

PGA	peak (horizontal) ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	<i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>
PM ₁₀	particulate matter less than or equal to 2.5 microns in aerodynamic diameter
PM _{2.5}	particulate matter less than or equal to 10 microns in aerodynamic diameter
Procedures	<i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	West Peetz and Lewis Creek Amendment Project
psia	Pounds Per Square Inch Absolute
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SO ₂	Sulfur Dioxide
SPCC	Spill Prevention Containment and Countermeasures Plan
USDA	United States Department of Agriculture
VOC	Volatile Organic Compound

A. PROPOSED ACTION

1.0 Introduction

The staff of the Federal Energy Regulatory Commission (Commission or FERC) has prepared this environmental assessment (EA) to assess the environmental effects of the West Peetz and Lewis Creek Amendment Project (Project) proposed by East Cheyenne Gas Storage, LLC (East Cheyenne). We¹ prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500-1508 [40 CFR 1500-1508]), and with the Commission's implementing regulations under 18 CFR 380.

East Cheyenne filed an application on October 27, 2017 under Docket No. CP18-11-000, pursuant to section 7(c) of the Natural Gas Act (NGA), and Part 157 of the Commission's regulations. East Cheyenne requests authorization to amend its certificate of public convenience and necessity issued by the Commission in Docket No. CP10-34-000, as amended in Docket Nos. CP11-40-000, CP12-35-000, CP12-124-000, CP14-486-000, and CP16-25-000 for the East Cheyenne Storage Facility (its storage facility) in Logan County, Colorado (figure 1). Specifically, East Cheyenne proposes to:

- i) consolidate the working gas capacity and cushion gas capacity of the West Peetz and Lewis Creek portions of the storage facility into one working gas capacity and one cushion gas capacity;
- ii) allow a unified maximum bottom-hole pressure for the storage facility field's reservoir;
- iii) reallocate the storage gas capacity in the storage facility by increasing the working gas capacity and decreasing the cushion gas capacity by 3.6 billion cubic feet (Bcf) each;
- iv) reconfigure certain facilities in the Lewis Creek portion of the Project; and
- v) expand the buffer zone of the storage field.

East Cheyenne also requests the Commission to issue an order reaffirming its market-based rate authorization in light of the increase in working gas capacity of the Project.

The EA will be used by the Commission in its decision-making process to determine whether to authorize East Cheyenne's Project.

¹ "We," "us," and "our" refers to environmental staff of the Commission's Office of Energy Projects.

2.0 Project History

The East Cheyenne Gas Storage Project was originally authorized by the Commission on August 2, 2010 in Docket No. CP10-34-000. The following is a summary of post certificated amendments requested by East Cheyenne and authorized by the Commission:

1. Prior to drilling any of the injection/withdrawal (I/W) wells, East Cheyenne requested to amend the Project under Docket No. CP11-40-000 to use vertical rather than horizontal wells in West Peetz Field and increase the number of wells. The Commission authorized this amendment on April 12, 2011, and East Cheyenne constructed and placed into service some of the authorized facilities;
2. On January 31, 2012 the Commission authorized East Cheyenne in Docket No. CP12-35-000, to increase the maximum reservoir pressure for the D Sands zone in the West Peetz Field;
3. On July 26, 2012 the Commission authorized East Cheyenne in Docket No. CP12-124-000, to construct additional I/W (vertical and directional), monitoring, and water disposal wells, and to relocate, modify, or abandon some of the previously authorized wells in the West Peetz Field. In addition, East Cheyenne was authorized to increase the maximum capacity of cushion gas in the West Peetz Field from approximately 5.7 to 10.8 Bcf;
4. On August 14, 2014 the Commission authorized East Cheyenne in Docket No. CP14-486-000, to amend the previously approved East Cheyenne Gas Storage Project to add six new I/W wells and other facilities associated with the D Sands Formation within the West Peetz Field. Additionally, East Cheyenne was authorized to increase the working gas capacity of the West Peetz Field by 3.0 Bcf, for a total working gas capacity of 14.5 Bcf;
5. On June 2, 2016 the Commission authorized, in part, East Cheyenne in Docket CP16-25-000, to expand the existing certificated storage reservoir boundary and buffer zones of the West Peetz and Lewis Creek Fields in Logan County, Colorado from 5,760 acres to approximately 8,882 acres. East Cheyenne's request to expand into the southern half of Section 30, Township 12, Range 52W was denied, stating that the Commission's "denials of requested boundary expansions are without prejudice to East Cheyenne filing amendment requests in the future, should circumstances change and adequate supporting documentation be available;"² and
6. On April 12, 2011, the Commission authorized East Cheyenne in Docket No. CP11-40-000 monitoring well LC-M005 and its associated well pad and a reconfiguration to the access road in the Lewis Creek field.

² East Cheyenne Gas Storage, LLC, 155 FERC ¶ 61,236 at P 30, n.20 (2016)

The majority of the environmental impacts that would result from the current Project amendment remain unchanged from those addressed in our previous EAs. Therefore, this EA only addresses the changes proposed in the current amendment and will incorporate by reference previously issued in all previous EAs (CP11-40-000, CP12-124-000, and CP14-486), categorical exclusions, and prior notice applications (CP12-35-000 and CP16-25-000).^{3,4}

3.0 Purpose and Need

The overarching purpose of the Project has not changed since the original application, and is described in the original EA. The Project is intended to meet a growing demand for gas storage in the areas served by the Trailblazer Pipeline Company LLC's pipeline and Rockies Express Pipeline LLC's pipeline in the Midwest and Western United States.

Since the original Project was authorized, East Cheyenne further evaluated the West Peetz D-Sands Formation, and based on its findings, determined that the D-3 sand interval is a continuous sand from the West Peetz to Lewis Creek Storage Field. East Cheyenne seeks to reflect this fact by combining the two certificated storage fields into a single storage reservoir for the Project. East Cheyenne is likewise requesting that the Commission approve combining the working gas and cushion gas volumes of the West Peetz Storage Field and the Lewis Creek Storage Field to reflect one, integrated reservoir; approve an increase in the combined working gas capacity from 18.9 Bcf to 22.5 Bcf; and approve a decrease in the combined cushion gas capacity from 15.7 Bcf to 12.1 Bcf. East Cheyenne states that this reallocation of capacity would not result in any change in the overall gas capacity in the reservoir.⁵ East Cheyenne further requests that the maximum bottom-hole pressure of the single D Sand storage field be certificated as 2,353 pounds per square inch absolute (psia) to be consistent with the West Peetz Storage Field and reflect the integrated nature of the storage reservoir.

Since the Commission's order in Docket No. CP16-25-000, East Cheyenne has continued to monitor the development of the gas bubble. East Cheyenne states that the reservoir model confirms the gas bubble in the D-3 Sands is moving north and when fully developed will be within a few hundred feet of the edge of the existing buffer zone on the north end of the Project. In order to continue to ensure the integrity of the storage reservoir

³ *Gas Storage Project*, Docket No. CP10-34-000, EA issued April 6, 2010 (75 Federal Register 18,829), and *East Cheyenne Well Amendment Plan*, Docket No. CP11-40-000, EA issued February 17, 2011.

⁴ *East Cheyenne Gas Storage, LLC*, 132 FERC ¶ 61,097 (2010); *East Cheyenne Gas Storage, LLC*, 135 FERC ¶ 61,021 (2011) (CP11-40-000); *East Cheyenne Gas Storage, LLC*, 138 FERC ¶ 62,071 (2012) (CP12-35-000); *East Cheyenne Gas Storage, LLC*, 140 FERC ¶ 62,083 (2012) (as revised by errata issued July 31 and September 4, 2012) (CP12-124-000); *East Cheyenne Gas Storage, LLC*, 148 FERC ¶ 62,138 (2014) (CP14-486-000); *East Cheyenne Gas Storage, LLC*, 155 FERC ¶ 61,236 (2016) (CP16-25-000). East Cheyenne requested and was granted an extension until February 2019 to complete construction of the Project. *East Cheyenne Gas Storage, LLC*, Letter Order, Docket Nos. CP10-34-000, *et al.* (Feb. 4, 2016).

⁵ Currently the Project is certificated for 18.9 Bcf of working gas capacity (14.5 Bcf within the West Peetz storage field and 4.4 Bcf within the Lewis Creek field) and approximately 15.7 Bcf of cushion gas (approximately 10.8 Bcf in the West Peetz field and approximately 4.9 Bcf in the Lewis Creek storage field).

and the safety of the operations in the Project area, East Cheyenne is requesting an expansion of the buffer zone in the south half of Section 30, Township 12, and Range 52W. East Cheyenne states that it has obtained a storage easement for the land to be included in the expanded buffer zone.

Under Section 7 of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decision on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

To date, East Cheyenne has completed construction and placed into service some of its certificated facilities. These include: the Central Process Facility, with one of its compression units and facilities for injecting gas; the header pipeline and meter station for the Trailblazer pipeline; seven D-Sand I/W wells and associated pipeline within the West Peetz Storage Field; and seven monitoring wells (five within the West Peetz Field). East Cheyenne has not commenced construction of any Lewis Creek natural gas storage facilities with the exception of two monitoring wells (LC-M001 and LC-M002), which were constructed and placed into service between the Lewis Creek Storage Field and the West Peetz Storage Field to monitor both fields, as well as one water-supply well in the Lewis Creek Storage Field (WSW No. 1).

4.0 Scope of this Environmental Assessment

The topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, fisheries, wildlife, vegetation, species of special concern, land use, recreation, visual impacts, cultural resources, air quality, noise, reliability and safety, cumulative impacts, and alternatives. This EA describes the affected environment as it currently exists and the environmental consequences of the Project, and compares the Project's potential impact with that of various alternatives. This EA also presents our recommended mitigation measures.

As the lead federal agency for the Project, FERC is required to comply with section 7 of the Endangered Species Act, as amended (ESA) and section 106 of the National Historic Preservation Act. These statutes have been considered in the preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing permits for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.10 of this EA.

5.0 Proposed Facilities

As part of the proposed Project, East Cheyenne would reconfigure certain natural gas facilities in the Lewis Creek Storage Field and expand the buffer zone of the Project. Specifically, East Cheyenne proposes to amend its current certificate by:

- reconfiguring the I/W wells in the Lewis Creek Storage Field by converting one existing non-jurisdictional well to an I/W well (LC-D021) and collocating

on an existing, currently non-jurisdictional well pad five directionally drilled I/W wells (LC-D022, LC-D023, LC-D024, LC-D025, and LC-D026, see table 1 and figure 2);

- combining the certificated maximum working gas and cushion gas capacities of the West Peetz and Lewis Creek Storage Fields, eliminating the separate certificated West Peetz and Lewis Creek working and cushion gas capacities and reallocating cushion gas capacity as working gas capacity;
- decreasing the total cushion gas capacity to 12.1 Bcf and increasing the total working gas capacity to 22.5 Bcf;⁶
- eliminating the currently certificated maximum bottom-hole pressure distinction between the West Peetz Storage Field (2,353 psia) and the Lewis Creek Storage Field (1,900 psia) and applying a maximum bottom-hole pressure of 2,353 psia uniformly across the single, integrated storage reservoir;
- reducing the diameter of the previously authorized 20-inch-diameter Lewis Creek natural gas mainline pipeline to a 16-inch-diameter pipeline;
- reconfiguring the 16-inch-diameter Lewis Creek natural gas mainline and the 6-inch-diameter water disposal pipeline as the Lewis Creek produced water mainline to connect directly to the reconfigured I/W wells LC-D021 through LC-D026 on the single LC-D021 well pad;⁷
- reconfiguring the monitoring wells (table 1 and figure 2) originally certificated for the Lewis Creek Storage Field. Eight monitoring wells are currently certificated in the Lewis Creek Storage Field: two are existing and in service, (LC-M001 and LC-M002) and six are authorized but unconstructed (LC-M003, LC-M005 through LC-M009). LC-M003 would be relocated and installed as a new well (LC-M003 was previously authorized to be converted from an existing non-jurisdictional well). East Cheyenne would install one new monitoring well, LC-M004. There would be no change to monitoring wells LC-M005 and LC-M006. East Cheyenne would convert three existing non-jurisdictional wells to monitoring wells, LC-M007, LC-M008, LC-M009, for a total of nine wells to monitor the D-Sands in the Lewis Creek Storage Field; and
- eliminating the currently certificated, but unconstructed produced water disposal well (LC-W002), well pad, and appurtenant facilities certificated for the Project (table 1 and figure 2).

⁶ East Cheyenne states that there would be no changes proposed to the injection and withdrawal capacities for the Project.

⁷ East Cheyenne would no longer require the unconstructed natural gas and produced water laterals.

Table 1				
Revised Wells – West Peetz and Lewis Creek Amendment Project				
Well ID	Current Status	Proposed Action	Well Pad ID	Construction
Injection/Withdrawal Wells				
LC-D006	Authorized – Not Installed	Well No Longer Required	LC-D006	Vertical
LVerticalC-D007	Authorized – Not Installed	Well No Longer Required	LC-D007	Vertical
LC-D008	Authorized – Not Installed	Well No Longer Required	LC-D008	Vertical
LC-D009	Authorized – Not Installed	Well No Longer Required	LC-D009	Vertical
LC-D021	NA	New (Convert)	LC-D021	Vertical
LC-D022	NA	New		Directional
LC-D023	NA	New		Directional
LC-D024	NA	New		Directional
LC-D025	NA	New		Directional
LC-D026	NA	New		Directional
Monitoring Wells				
LC-M001	Constructed – In Service	No Change	LC-M001	Vertical
LC-M002	Constructed – In Service	No Change	LC-M002	Vertical
LC-M003	Authorized – Not Installed	Relocate	LC-M003	Vertical
LC-M004	NA	New	LC-M004	Vertical
LC-M005	Authorized – Not Installed	No Change	LC-M005	Vertical
LC-M006	Authorized – Not Installed	No Change	LC-M006	Vertical
LC-M007	Authorized – Not Installed	Relocate and Convert under Certificate Blanket Authorization	LC-M007	Vertical
LC-M008	Authorized – Not Installed	Relocate and Convert	LC-M008	Vertical
LC-M009	Authorized – Not Installed	Relocate and Convert	LC-M009	Vertical
Produced Water Wells				
LC-W002	Authorized – Not Installed	Well No Longer Required	LC-W002	UIC Class II

6.0 Public Involvement

On December 8, 2017 the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Lewis Creek Amendment Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to interested parties including federal, state, and local officials; agency representatives; Native American tribes; local newspapers; and affected property owners. In response to the NOI, we received one comment from the Logan County Economic Development Corporation expressing its support of the project and the economic benefits it would bring to the county. No other comments were received regarding the Project.

7.0 Land Requirements

Land requirements for the Project would include land to be used temporarily for construction and land to be retained during operations as aboveground facility sites in the Lewis Creek Storage Field (well pads and access roads). East Cheyenne has shortened and narrowed the Lewis Creek mainline rights-of-way for all pipelines. Additionally, I/W wells have been reconfigured to be installed on a single well pad. These changes along with the pipelines, wells, well pads, and access roads that East Cheyenne no longer requires as a result of the reconfiguration of the Lewis Creek portion of the Project, would result in significant reductions in the overall land requirements. East Cheyenne states that the overall change to land requirements for the Project after subtracting the rights-of-way, well pads, and access roads, certificated but no longer required, is a net reduction of 55.2 acres associated with construction and a net reduction of 35.2 acres for operation.

Table 2 presents a general summary of land requirements for construction and operation of the West Peetz and Lewis Creek Amendment Project.

Table 2		
Land Requirements Lewis Creek Amendment Project		
Facility	Land Affected by Construction (acres)	Land Affected During Operation (acres)
Pipelines		
Total for New and Reconfigured Lewis Creek Pipelines	16.3	7.7
Lewis Creek Pipelines Original Total	35	19
Net Change for Lewis Creek Pipelines	18	11
Total for Lateral Pipelines no Longer Required	30	15
Net Change in Land Use for Pipelines	49	26
Aboveground Facilities (Injection/Withdrawal and Monitoring Wells)		
Total for Lewis Creek Reconfigured Aboveground Facilities	14.2	10.1
Total for Aboveground Facilities no Longer Required	32	16
Net Change in land use for Aboveground Facilities	8	6
Access Roads		
Total for Lewis Creek New and Reconfigured Access Roads	8.4	2.7¹
Total for Access Roads no Longer Required	6	6
Net Change in land use for Access Roads	5	3
Additional Temporary Workspace		
Total for Lewis Creek Additional Temporary Workspace (ATWS)	6.6	0
ATWS no Longer Required	11	0
Net Change in land use for ATWS	4	0
Project Total	45.5	20.5
¹ Does not include 4.68 acres of previously authorized permanent access roads both "existing" and "unconstructed, with no change". For the Project, there will be a total of 7.39 acres of new, reconfigured, and existing access roads for operation.		

Pipelines

Construction of the Project pipelines would require approximately 16.3 acres of land; and 7.7 acres for operation. East Cheyenne would utilize previously authorized rights-of-way for Lewis Creek pipeline facilities' construction and operation. Lewis Creek states that it would co-locate the Project's 16-inch-diameter natural gas pipeline along with the 6-inch-diameter produced water pipeline, the 2-inch-diameter instrument air pipeline and the 2-inch-diameter fuel gas pipeline. Colocation of these facilities within one right-of-way would require a 190-foot-wide pipeline construction corridor and a 90-foot-wide operations right-

of-way (see figure 2).⁸ Because of the relocation of all of the I/W wells to a single well pad, East Cheyenne would no longer require any of the previously approved Lewis Creek natural gas and produced water laterals. As such, there would be an overall reduction in the originally certificated land use for the Lewis Creek pipelines on the order of 49.1 acres, and 25.8 acres for pipeline construction and operation, respectively.

Aboveground Facilities (Injection/Withdrawal and Monitoring Wells)

A single existing non-jurisdictional well pad would be improved and expanded to an area encompassing 400-foot by 400-foot (3.7 acres) for use as a permanent well pad designated as LC-D021, for construction of all of the Lewis Creek I/W wells (LC-D021, -D022, -D023, -D024, -D025 and -D026). An additional temporary workspace (ATWS) of 4.2 acres would also be utilized during construction of I/W wells resulting in a total of 7.9 acres affected during construction of the well pad.

East Cheyenne would utilize an approximate 350-foot by 300-foot existing well pad for construction of the Project monitoring wells LC-M003, -M004, -M005, -M006 and conversion of wells LC-M007, -M008, -M009, affecting about 2.4 acres for each pad. The well pad initially used for construction equipment and the drilling rig, would be reduced to a 200-foot by 200-foot permanent well pad for operations affecting a total of 0.9 acres for each pad.

Access Roads

East Cheyenne would improve an existing, non-jurisdictional access road (designated PAR-018) for access to I/W well pad LC-D021. Five new permanent access roads designated as PAR-103, -104, -105, -106, and -107 would be constructed for access to the Project monitoring wells. In addition, a previously authorized but unconstructed road, designated as PAR-001 would be constructed to provide access from the storage field compressor station to the Project. Approximately 12 acres of land would be required to construct the new and reconfigured Project access roads and approximately 2.3 acres of land required for operation.

East Cheyenne would no longer require a number of previously authorized, unconstructed permanent roads to access I/W wells as originally designed. There would be no change to previously approved access roads to the existing non-jurisdictional well locations, except for one road (TAR-017) which would be relocated and shortened, and the addition of one road (TAR-018) which was not included in the original application. The Project would result in an overall reduction of approximately 6 acres of land for use as access roads during construction and 6 acres for operation from what was originally authorized.

⁸ Construction right-of-way width of 50 feet on each side of a permanent 90-foot-wide right-of-way.

Additional Temporary Workspace

Approximately 6.6 acres of land would be required as ATWS to facilitate the construction of LC-D021 well pad and I/W wells. ATWS would also be required along the sides of two existing access roads (PAR-024 and -025) to facilitate drilling rig and truck access for construction of LC-D021 well pad and I/W wells.

8.0 Construction, Operation and Maintenance

East Cheyenne would construct, restore, and maintain its Project in accordance with the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) without modification. East Cheyenne would also construct the Project facilities in accordance with the following project-specific plans:

- Exotic and Nuisance Species Plan;
- Noise Mitigation and Compliance Plan;
- Plan for Unanticipated Discovery of Contaminated Media;
- Well Monitoring and Mitigation Plan;
- Stormwater Pollution Prevention Plan;
- Hydrostatic Testing Plan;
- Revegetation Plan;
- Winter Construction Plan;
- Spill Prevention Containment and Countermeasures Plan (SPCC Plan); and
- Plan for Unanticipated Discovery of Cultural Resources and Human Remains During Construction.

We have reviewed these plans and find them acceptable.

8.1 Pipeline Construction

East Cheyenne would design, construct, operate, and maintain the proposed pipeline facilities in accordance with U.S. Department of Transportation's (DOT) *Transportation of Natural and Other Gas by Pipeline Minimum Federal Safety Standards* in 49 CFR 192, and other applicable regulations. Construction of Project pipeline facilities would incorporate conventional overland pipeline construction techniques. During construction, East Cheyenne would require a 50-foot-wide temporary easement on each side of a 90-foot-wide permanent right-of-way. The 50-foot-wide easements would allow for equipment movement and construction spoil temporary storage. Within the 90-foot-wide permanent right-of-way, East Cheyenne would install:

- 16-inch-diameter natural gas pipeline;
- 6-inch-diameter produced water pipeline;
- 2-inch-diameter fuel gas pipeline;
- 2-inch-diameter instrument air pipeline; and

- fiber optics bundle.

East Cheyenne would restore the 50-foot-wide temporary easements to preconstruction conditions (see figure 3).

8.2 Storage Well and Well Pad Construction

East Cheyenne would utilize freshwater mud systems and similar drilling methods for all new wells and well conversions to install the six I/W and seven monitoring wells. During drilling, several steel casing strings would be installed and cemented to the surface to protect shallow aquifers from cross contamination by poor quality deeper groundwater. The wells would be developed in accordance with all applicable federal, state, and local regulations and approvals. East Cheyenne would obtain permits from the Colorado Oil and Gas Commission (COGCC) to construct and operate the wells. The five I/W wells to be collocated with well LC-D021 would be installed as directional wells to specific locations in the D Sands from the new collocated well pad as follows:

- LC-D022 would be drilled to a bottom-hole location in NWSW of section 7, T11N R52W;
- LC-D023 would be drilled to a bottom-hole location in NWSE of section 12, T11N R53W;
- LC-D024 would be drilled to a bottom-hole location in SWSW of section 7, T11N R52W;
- LC-D025 would be drilled to a bottom-hole location in SENE of section 13, T11N R53W; and
- LC-D026 would be to a bottom-hole location in SWNE of section 13, T11N R53W.

East Cheyenne Gas Storage I/W and observation wells would be drilled to a total depth of approximately 5,250 feet below ground surface (bgs), or 75 feet below the base of the Dakota D sandstone of early Cretaceous age. The disposal well (WP-W003) would be drilled to approximately 5,400 feet bgs or 45 feet below the base of the Dakota J sandstone. A 13.5-inch-diameter hole for I/W and disposal wells and 10-3/4-inch-diameter hole for observation wells would be drilled to a depth of 1,200 feet bgs. Surface casing of 9 5/8-inch-diameter for I/W and disposal wells and 8 5/8-inch-diameter for observation wells would then be installed and cemented back to surface to protect individual aquifers of the Tertiary-period High Plains Aquifer system and the Cretaceous-period Laramie-Fox Hills fresh water aquifer that is common throughout the region. After a minimum cement curing time of 12 hours, an 8.75-inch-diameter drill bit would be used to drill the I/W and disposal wells to total depth. A 7 7/8-inch-diameter drill bit would be used for observation wells. The open-holes would then be logged utilizing down-hole logging equipment followed by the installation of 7-inch-diameter casing in I/W and disposal wells and 5.5-inch-diameter casing in the observation wells. Class G or H cement with appropriate additives would then be installed to approximately 200 feet above the Dakota D storage zone for I/W and observation wells and 350 feet above the Dakota J zone for the disposal well.

Water required for drilling and installation of the wells would be sourced from an existing industrial water well (WSW No. 1) that was previously authorized for use by the FERC under Docket No. CP12-124-000.

Construction of I/W and monitoring well pads would include extra temporary workspace adjacent to each pad. Each extra temporary workspace would be cleared of vegetation and graded as necessary to create a level working surface for the drill rig and construction equipment. Once installation of the well is complete, each well site would include a new wellhead, control and safety systems, separators, valves, piping, lighting, building and control system enclosures, and the necessary pipe supports.

8.3 Hydrostatic Testing

Hydrostatic testing of all Project pipelines would be conducted in accordance with the provisions of 49 CFR 192 to verify the integrity of the piping. Pipe integrity would be tested by isolating the pipeline segments with test manifolds and filling and pressurizing the segments for eight hours in accordance with DOT requirements. Any significant loss of pressure indicates that a leak may have occurred and would require further inspection. No chemicals would be added to the hydrostatic test water. East Cheyenne estimates that the total amount of hydrostatic test water required for the Project is about 49,050 gallons. The hydrostatic test water would be supplied by well WSW No. 1 (see section B.2.1); and upon completion the test water would be routed for disposal to East Cheyenne's produced water disposal wells WP-W001 and/or WP-W003 in the West Peetz Storage Field.

8.4 Special Construction Techniques

Agricultural Areas

The Plan includes construction techniques that East Cheyenne would follow in agricultural areas, including specialized construction methods that increase the likelihood of restoration success. In agricultural areas, the top 12 inches of available topsoil would be stripped and segregated. During restoration of the pipeline right-of-way, East Cheyenne would plow compacted areas with a paraplow or other deep tillage instrument. The right-of-way would be re-graded to restore pre-construction contours and the soil would be left in proper condition for planting. East Cheyenne would also implement the recommended guidelines from the U.S. Department of Agriculture (USDA), Farm Service Agency (FSA) in agricultural areas enrolled in the Conservation Reserve Program (CRP). Agricultural and CRP land impacts are discussed in section B.4.1.

Road Crossings

County road 37 would be crossed by horizontal boring. Horizontal boring involves the excavation of pits on either side of the crossing and using a boring machine to drill a horizontal hole beneath the road bed. A pipe section is inserted into the hole and welded to the mainline pipeline on either side of the crossing. This construction method would

minimize delays, public inconvenience, and disruption of traffic flow. East Cheyenne would take appropriate safety precautions, as required by the county or town, such as the use of flag men, night flashers, and markers.

Winter Construction

In the event that construction activities are ongoing during the winter season, East Cheyenne would conduct construction in accordance with its Winter Construction Plan. Construction activities continuing into the winter season may experience conditions that could delay restoration activities, such as decompaction, topsoil replacement, or seeding, until the following spring.

9.0 Permits and Approvals

East Cheyenne has obtained or is in the process of obtaining the federal, state, and local permits and approvals that would be needed for construction and operation of the Project. The status of each permit or approval is listed in table 3, including the application submittal or anticipated submittal date and the permit receipt or anticipated receipt date. East Cheyenne would be responsible for obtaining and abiding by all permits and approvals required for construction and operation of the Project regardless if they appear in this table.

Table 3 Required Permits And Approvals for the West Peetz and Lewis Creek Amendment		
Permit/Approval	Issuing Agency	Status
FEDERAL		
Certificate of Public Convenience and Necessity– West Peetz and Lewis Creek Amendment	Federal Energy Regulatory Commission	Certificate amendment application filed in October 2017. Pending
Endangered Species Act - Section 7 Consultation	U.S. Fish and Wildlife Service (FWS)–Mountain Prairie Region, Colorado Field Office	An updated informal consultation concurrence request was submitted to FWS on May 24, 2017, and a <i>no effect</i> concurrence was received June 9, 2017. Consultation complete
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers	U.S. Army Corps of Engineers responded that no permit is required in letter dated July 17, 2009. Consultation complete.

TABLE 3		
Required Permits And Approvals Lewis Creek Amendment		
Permit/Approval	Issuing Agency	Status
STATE		
Clearance under Section 106 of National Historic Preservation Act	Colorado Historical Society Office of Archaeology and Historic Preservation	The SHPO issued a finding of no historic properties affected for the original area of potential effects (APE) associated with the proposed East Cheyenne Gas Storage Project in a letter dated November 23, 2009. On September 12, 2017, the SHPO issued a finding of no historic properties affected for the additional APE associated with the Lewis Creek Amendment. Consultation Complete.
Native American consultations	Various Tribes	Consultation was conducted concurrently with Section 106 consultations. No tribes responded expressing concerns with Project activities. Consultation complete.
State Endangered Species Consultation	Colorado Department of Natural Resources Division of Wildlife (CDOW)	An updated consultation concurrence request was submitted to CDOW on May 24, 2017. On August 30, 2017, CDOW concurred that the Project should have very little, if any adverse effects on the local wildlife species of concern. Consultation complete.
Permit to Drill; surface casing, production casing, and cementing requirements for new and existing well bores	COGCC	East Cheyenne will submit applications to the COGCC and necessary permits and/or authorizations will be obtained prior to construction for the six Lewis Creek Storage Field I/W wells.
Permits or authorizations to Drill or reenter; Surface casing, production casing, and cementing requirements for new and existing well bores	COGCC	East Cheyenne will submit applications to the COGCC and necessary permits and/or authorizations will be obtained prior to construction for the seven Lewis Creek Storage Field monitoring wells.
Stormwater Discharges Associated with Construction Activity General Permit COR0300000	Colorado Department of Public Health and Environment Water Quality Control Division	Certification Number COR03G823 issued September 9, 2010.

TABLE 3		
Required Permits And Approvals Lewis Creek Amendment		
LOCAL		
Permit/Approval	Issuing Agency	Status
Conditional Use Permit (CUP)	County of Logan Colorado - Board of County Commissioners	CUP #206 was granted on September 15, 2009.

10.0 Nonjurisdictional Facilities

There are no non-jurisdictional facilities associated with this Amendment.

B. ENVIRONMENTAL ANALYSIS

This section describes the affected environment (existing conditions) for each resource, and the potential direct and indirect impacts resulting from implementation of the Project Amendment, including, where applicable, East Cheyenne's proposed mitigation measures for each environmental resource. When considering the environmental consequences of the proposed Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could occur because of activities that modify resources to the extent that they may not return to pre-construction conditions during the life of the Project, such as with construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

East Cheyenne, as part of its proposal, agreed to implement certain measures to reduce impacts on environmental resources. We evaluated the proposed mitigation measures to determine whether additional measures would be necessary to reduce impacts.

1.0 Geology and Soils

1.1 Geology

The Project area is proposed entirely within Logan County, Colorado, which is within the Colorado Piedmont portion of the Great Plains Province (USGS, 2003). Most of the county is characterized by flat to gently sloping topography. The local relief in the Project area is less than 100 feet, with ground surface elevations across the Project area ranging from 4,510 feet above mean sea level (amsl) up to 4,592 feet amsl. The major physiographic feature in the vicinity of the Project area is Peetz Table, a large gently sloping plateau that rises several hundred feet from the plains to the south of the Project area. The Project is situated on the eastern flank of the greater Denver Basin Province. This structural basin covers much of eastern Colorado and extends into parts of Wyoming, South Dakota, and Nebraska (Higley, *et al.*, 1995). In the Project area, Cretaceous-period deposits consisting of shales, interbedded with sandstone and limestone units (referred to as the Dakota Group) are often thin and discontinuous and include the Muddy "J" Sandstone and the Overlying "D" Sandstone (Kirkham and Ladwig, 1980). These units have been the primary targets for oil and gas exploration in the basin and make up the oil and gas reservoirs underlying the Project (Higley, *et al.*, 1995). The Project wells would be completed in the D sands.

Above the Dakota Group, the Project area is underlain by the Ogallala formation which is significant source of groundwater (Tweto, 1979). Surficial bedrock geology at the site consists of Miocene-Eocene deposits of the upper Ogallala Formation (Scott, 1978).

Mineral Resources

Oil and natural gas make up the primary mineral resources in the region, mostly recovered from combined D and J sandstone deposits. The primary reservoirs consist of fine to medium grained sandstones and can reach thicknesses of greater than 500 feet; however, reservoir thicknesses average around 25 feet (Higley, *et al.*, 1995). The Lewis Creek and West Peetz Storage Fields were both discovered and developed by British American Oil in the early 1950s.

East Cheyenne currently operates both of the West Peetz and the Lewis Creek Storage Fields. Cumulative production from the West Peetz Storage Field is about 1.8 million barrels of oil and 3.7 Bcf of natural gas; and production from the Lewis Creek Storage Field is about 5.4 million barrels of oil and 4.1 Bcf of natural gas. Historically, commercial operations focused on extracting oil from the J Sands in both fields, and natural gas from the shallower D Sands was used primarily in artificial lift operations to enhance J Sands oil production. Production operations in the 1950s and 1960s demonstrated no pressure connection between the J Sands in West Peetz and Lewis Creek. However, subsequent monitoring by East Cheyenne during operation of the storage fields has demonstrated that there is a pressure connection between the two fields in the D Sands. Recent gas sampling showed a mixture of native gas and storage gas. A nonjurisdictional well drilled through the D Sands in Lewis Creek in November 2014, showed 2 feet of natural gas saturation in the D-3 sand interval, and that same well logged in April of 2017 showed natural gas saturation in the full 13 feet of the D-3 sand interval. These physical manifestations confirmed that the main D Sands body is a continuous sand from West Peetz to Lewis Creek. With this amended Project, East Cheyenne seeks to reflect this fact by combining the two certificated storage fields into a single certificated storage reservoir.

The closest historic oil or natural gas field to the Project area is the Armstrong gas field to 10 miles south of the Lewis Creek Storage Field (Scott, 1978). The next closest fields are the Bonanza oil field to the south of the Armstrong gas field, the Darby Creek field east of the Armstrong field, and the Cliff field approximately 10 miles west of the Project site (Scott, 1978).

Sand and gravel are the only industrial minerals and construction materials that occur in Logan County, Colorado. No coal, metallic minerals, or other economically feasible mineral resources are known to exist in the Project area.

Because no other oil and gas fields or mineral resources are known to exist in the Project vicinity, the Project would not significantly impact the development of mineral resources near the Project.

Paleontological Resources

No sensitive or rare paleontological resources are known or documented to exist in the Project area. The Cretaceous-period Pierre Shale formation is an important source of fossils and other paleontological resources (Johnson et al., 2003). This formation lies well below, at depth, in the Project area. Paleontological resources are not anticipated to be impacted because of the low probability of construction encountering the Pierre Shale formation except for small areas where well drilling would puncture this formation with the well bore.

Geologic Hazards

No geologic hazards were identified in the Project area. The Project occurs within a region of low historical earthquake activity. The largest recorded earthquake in Colorado was a magnitude 6.6 earthquake that occurred on November 7, 1882 along Colorado's Front Range about 170 miles southwest of the Project area (Colorado Geological Survey 2013). Five, more recent earthquakes occurred near Greely, Colorado about 90 miles to the southwest of the Project between 2014 and 2016. These earthquakes had magnitude of 2.5 to 3.2 (USGS 2017).

The shaking during an earthquake can be expressed in terms of peak horizontal ground acceleration (PGA) as a percent of gravity (g). Based on USGS seismic hazard mapping, the Project is in an area where PGA range from 0 to 4 percent g and have a 2 percent chance of being exceeded in 50 years (USGS, 2014a); and with a 10 percent chance of being exceeded in 50 years between 1 and 4 percent g (USGS, 2014). An earthquake with a PGA of 1 to 4 percent g is characterized by weak to light ground shaking with no resulting damage (USGS, 2014).

Given the low probability of earthquakes, soil liquefaction is not anticipated. There are no volcanic hazards in the Project area, and landslides are also not anticipated because of the low relief in this part of Logan County, Colorado.

In conclusion, we do not anticipate that construction and operation of the Project would result in significant adverse effects on geologic resources or be impacted by geologic hazards.

1.2 Soils

Soil characteristics within the Project area were derived from the Soil Survey of Logan County, Colorado, available from the USDA's Natural Resources Conservation Service database. Soil attribute data, including soil descriptions, physical properties, and

chemical properties, were used to describe the soil series underlying the overall Project area, including the Project area in the Lewis Creek portion of the Project.

Construction activities that have the potential to adversely affect soils if not properly mitigated include, but are not limited to, clearing, grading, trenching, backfilling, and restoration. Potential impacts on soils include erosion due to the action of water; reduction of soil productivity by mixing topsoil with subsoil; soil compaction and rutting due to heavy equipment traffic; and contamination from spills. East Cheyenne would construct and operate its proposed facilities to minimize impacts on soils by implementing FERC's Plan and Procedures which are designed to minimize adverse impacts on soils. In accordance with FERC's Plan and Procedures, East Cheyenne would employ one Environmental Inspector (EI) to monitor construction activities and to verify compliance with applicable mitigation measures and conditions.

None of the soils impacted by construction of the Project are considered highly erodible, or have poor revegetation potential. However, to minimize or avoid potential impacts due to soil erosion and sedimentation, East Cheyenne would utilize erosion and sedimentation control devices during construction and restoration. East Cheyenne would likewise promote revegetation by implementing the soil erosion and sedimentation control practices and restoration procedures described in FERC's Plan, including topsoil segregation which would further ensure post-construction revegetation success, thereby minimizing the potential for long-term erosion due to lack of vegetative cover.

The USDA defines prime farmland soils as those best suited for production of food, feed, forage, fiber, and oilseed crops, and generate the highest yields with the smallest expenditures of resources. Prime farmland soils can include either actively cultivated land or land that is currently not cultivated, but is readily available for cultivation. Within the Project area, 44.2 acres of prime farmland would be temporarily affected by the construction of Project facilities. Of those 44.2 acres, approximately 16.7 acres would be permanently impacted. However, because both construction and operational impacts from the pipelines, ATWS, and some of the well pads were previously accounted for in the original project, the actual acreage of prime farmland both temporarily and permanently affected as a result of construction and operation of the amended Project would be less than currently certificated. With the exception of the well pads, impacts would be temporary in nature and East Cheyenne would mitigate these impacts through topsoil segregation, decompaction, and erosion control measures, as specified in East Cheyenne's Plan. Further, ATWS would be restored to pre-construction conditions resulting in no loss of soil function.

With implementation of the FERC Plan, we conclude that construction and operation of the Project would not have significant impacts on soils.

2.0 Water Resources

2.1 Groundwater

The major source of groundwater in the Project area is the Tertiary-period High Plains aquifer system, which covers a large area of eastern Colorado, and the stratigraphically lower Cretaceous period Laramie-Fox Hills aquifer. The High Plains aquifer system is composed mainly of the unconsolidated sands, gravels, clays, and silts of the Ogallala Formation. The Ogallala Formation is the most significant hydrogeologic unit within the aquifer and provides the majority of the groundwater in the area. Groundwater from the High Plains aquifer system is generally of good quality, and is typically of a calcium bicarbonate type. The average well depth in the High Plains aquifer is between 200 and 350 feet bgs.

The Laramie-Fox Hills ranges in thickness from zero to 350 feet. Its maximum depth is 2,400 feet. The aquifer is composed of two relatively thick sandstone layers of the Fox Hills Sandstone and sandstones from the lower part of the Laramie Formation. Minor coal beds commonly occur in the lower portion of the Laramie Formation. In the deeper portions of the basin, high water temperatures and sulfur content in the coal beds make this water less desirable for municipal supply (Logan County). Generally, groundwater from the Fox Hills is suitable for domestic use but is of poor quality for irrigation because of a high percentage of sodium. Groundwater from the Laramie formation may be better suited for irrigation but is unsuitable for domestic use because of excessive hardness and objectionable amounts of sulfate or sulfide (USGS 1957).

The primary source of recharge to the High Plains aquifer is from infiltration of precipitation. Streambed infiltration and infiltration of irrigation water are smaller sources. Groundwater recharge is limited by the low precipitation (14 to 17 inches per year) and high evaporation rates typical of eastern Colorado. It is estimated that 0 to 2 inches of annual precipitation infiltrates to the subsurface, with an average of 0.85 inch per year actually entering the aquifer as recharge. The dominant source of discharge is groundwater extraction for agricultural purposes. Seepage into rivers and streams, evapotranspiration through crops, and subsurface outflow to neighboring states are other sources of discharge.

Groundwater recharge to the Laramie-Fox Hills aquifer is along outcrop areas for the sandstone aquifer, where the aquifer sub-crops beneath saturated alluvium, leakage from irrigation canals, and from reservoirs cut into the sandstone aquifer (USGS, 1980).

No public groundwater supply wells are known near the Project area, and no seeps or springs are known to exist within the Project area. The Project does not cross any Sole Source Aquifers designated by the U.S. Environmental Protection Agency (EPA).

Seven private groundwater supply wells were identified within the Lewis Creek portion of the Project. Six of these wells are classified for industrial use (oil & gas related) and one is classified for livestock use. Table 4 identifies the well locations, their current status, their proximity to Project construction areas, and permitted uses. Three wells are owned by East Cheyenne, three are abandoned, and the status of the livestock well is unknown.

Well Permit Number/ Well Name	Section, Township, & Range	Quarter (160 acres)	Quarter (40 acres)	Permitted Use / Status	Aquifer	Nearest Jurisdictional Project Feature	Distance to Nearest Jurisdictional Feature (feet)
2847 / WSW#6	07 11N 52W	SW	NW	Industrial / Abandoned	Unnamed Aquifer	PAR-001	200
6511a / WSW#1	12 11N 53W	SE	SW	Industrial / Active	Unnamed Aquifer	PAR-024	150
2563 / WSW#5	13 11N 53W	NE	NE	Industrial / Abandoned	Unnamed Aquifer	PAR-023	1,020
2057a / WSW#2	13 11N 53W	NE	NE	Industrial / Inactive	Unnamed Aquifer	PAR-023	1,020
2310 / unknown	13 11N 53W	NE	NE	Industrial / Abandoned	Unnamed Aquifer	LC-M004	0
2056a / WSW#3	13 11N 53W	NE	SE	Industrial / Inactive	Unnamed Aquifer	PAR-106	1,610
11707 / unknown	14 11N 53W	NE	SW	Livestock / unknown	Unnamed Aquifer	PAR-105	2,100

a - Well registered to East Cheyenne Gas Storage, LLC

As discussed in section 8.2, East Cheyenne would source water required for installation of the wells and hydrostatic testing of the pipelines from an existing industrial water well (WSW No. 1) in Section 12, Township 11N and Range 53 W. WSW No. 1 was previously authorized for use by the FERC under Docket No. CP12-124-000.

Also, as discussed in section A.8.2 and shown in table 3, East Cheyenne would obtain permits from the COGCC to construct and operate the wells, and would install several steel casing strings cemented to the ground surface to protect shallow aquifers from cross contamination by poor quality deeper groundwater. Construction activities for the proposed pipelines could result in local minor, temporary impacts on shallow groundwater resources. These impacts could include increased turbidity,

groundwater fluctuations, short-term changes to groundwater recharge, contamination from a spill or leak of hazardous substances, and decreased water yield. These minor impacts would be temporary and would not significantly affect groundwater resources or groundwater quality, and would be avoided or minimized by implementation of FERC's Plan and Procedures, and East Cheyenne's SPCC Plan. Therefore, we conclude that significant impacts on groundwater resources would not occur.

2.2 Surface Water and Wetlands

The Amended Project facilities are within the South Platte River watershed. The South Platte River is approximately 15 miles southeast of the Project area. There are no surface waters or wetlands in the vicinity; therefore, the amended Project would have no impact on surface waters or wetlands.

3.0 Vegetation and Wildlife

3.1 Vegetation

The only vegetation type in the Project area are associated with agricultural and industrial/commercial land. These communities are discussed in the section B.4.1 (Land Use) below. No other vegetation types or unique, sensitive, or protected vegetation are in the vicinity of the proposed Project area.

3.2 Wildlife

Wildlife found in the Project area is typical of that usually encountered in eastern Colorado agricultural and shortgrass prairie landscapes and include red-tailed hawk, Swainson's hawk, vesper sparrow, common grackle, and European starling, pronghorn, coyote, white-tailed jackrabbit, and cottontail, American badger, thirteen-lined ground squirrel, mule deer, bull snake, and western rattlesnake.

Potential impacts on wildlife include the temporary displacement of individuals from construction areas and adjacent habitats and the direct mortality of small, less-mobile wildlife that are unable to leave the construction area. Construction of the Project could also impact nearby wildlife due to the increase in noise due to construction equipment and increased human activity. However, there would be minimal clearing and removal of vegetation as the majority of the activities associated with the Project would occur in active cultivated fields and previously disturbed areas on an existing non-jurisdictional well pad. Following construction activities, East Cheyenne would implement the restoration measures within its Plan to ensure that all disturbed areas are properly revegetated. Further, there is an abundance of similar habitat adjacent to the Project area for displaced wildlife to utilize during and after construction of the proposed

facilities. Most wildlife would likely return to the area once construction is complete. Therefore, we conclude that the Project would not significantly impact wildlife.

Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the Migratory Bird Treaty Act and bald and golden eagles are additionally protected under the Bald and Golden Eagle Protection Act. The Migratory Bird Treaty Act, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Further, Executive Order (EO) 13186 was enacted in 2001 to, among other things, ensure that environmental analyses of federal actions evaluate the impacts of actions on migratory birds. This Order directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the U.S. Fish and Wildlife Service (FWS), and emphasizes species of concern, priority habitats, and key risk factors.

On March 30, 2011, the FWS and FERC entered into a Memorandum of Understanding regarding the implementation of EO 13186 that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between FERC and the FWS by identifying areas of cooperation. This voluntary Memorandum of Understanding does not waive legal requirements under the Migratory Bird Treaty Act, the ESA, the Federal Power Act, the NGA, or any other statutes and does not authorize the take of migratory birds.

There would be no impact on tree-dwelling birds due to the lack of forested habitat. In addition, there would be minimal clearing and removal of vegetation as the activities associated with the Project would occur in active cultivated fields or industrial/commercial lands. During operation of the Project, vegetative maintenance clearing would occur outside of the nesting season (April 15-August 1) in accordance with FERC's Plan. For the reasons listed above, we conclude that the amended Project would not significantly affect migratory bird species or habitat within the Project area.

3.3 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 ESA or are considered as candidates for such listing by the FWS, federal species of concern, those species that are state-listed as threatened or endangered, and state species of concern. In accordance with section 7 of the ESA, the FERC, in coordination with the FWS, must ensure that any

federal action authorized, funded, or carried out by the agency does not jeopardize the continued existence of a federally listed threatened or endangered species or result in an adverse modification of the designated critical habitat of a federally listed species.

In May 2017, East Cheyenne conducted a review of the FWS Environmental Conservation Online System via Information for Planning and Consultation for the Project area in Logan County, Colorado. The review identified five federally listed species that could potentially occur in Logan County, including the least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid. Given that amended Project facilities would occur in active agricultural and industrial land, no suitable habitat for any of these species is present in the Project area. Therefore, we conclude the Project would have *no effect* on any federally listed species.

East Cheyenne, as our non-federal designee, sent a consultation letter dated May 24, 2017 to the FWS to determine if any federally listed threatened or endangered species or designated critical habitat occurs within the Project area. The FWS responded on June 9, 2017, concurring that the construction and operation of the Project amendment would have no effect on any federally listed species and no further consultation is necessary. We agree.

East Cheyenne also consulted with the Colorado Division of Wildlife (CDOW) in a letter dated May 24, 2017, to determine if any state-listed species or their designated critical habitats occur within the Project area. The CDOW responded on August 30, 2017, stating that burrowing owls and plains sharp-tailed grouse may be found in the area; however, currently, there are no known prairie dog colonies, which would support burrowing owl breeding and nesting habitat, nor are there any recently active plains sharp-tailed grouse leks within the exterior boundaries of the Project area. Further, the CDOW states that the closest known plains sharp-tailed grouse lek is over a mile to the south of the southernmost exterior boundary of the Project area. The CDOW concludes that this Project should have very little, if any, adverse effects on the local wildlife species of concern because a great majority of the Project would take place on existing well pads and previously existing well roads. The CDOW also states that construction of the Project would not significantly impact any wildlife migration routes.

East Cheyenne would implement the CDOW's recommendation to not conduct construction activities between March 15th and July 1st to help reduce disturbances to any plains sharp-tailed grouse that may be present in the Project area. For any clearing activities that would need to be conducted after March 15th, East Cheyenne would contact the local CDOW biologist to conduct a survey for the plains sharp-tailed grouse in that specific location. If the CDOW biologist determines there is no indication of plains sharp-tailed grouse in or near the proposed construction location and allows construction, East Cheyenne would conduct the construction activity. No construction activities would be conducted outside any existing well pad or access road footprint if the survey indicates the presence of plains sharp tailed grouse in or near the proposed

construction location. Therefore, we conclude that the Project would not adversely affect state-listed species.

4.0 Land Use, Recreation and Visual Resources

4.1 Land Use

The Project construction would impact land use as described in the following sections. Land use types affected by the Project include industrial/commercial and agricultural lands. The predominant land use within the Project area is agricultural land. Table 7 identifies the land use acreage affected by construction and operation of the Project.

Existing Land Use

Construction of new pipelines, aboveground facilities, permanent access roads, and additional temporary workspace would temporarily disturb a total area of 45.5 acres, and 25.2 acres would be permanently impacted during Project operation. The following sections describe land use impacts for each of the amended Project components. Land use types affected by the Project include:

- agricultural Land (actively cultivated cropland and inactive cropland); and
- industrial/Commercial Land (existing county roads, existing access roads, and oil and gas production).

Agricultural production of herbaceous (non-woody) crops would resume after construction.

Construction and Operation Impacts and Mitigation

Temporary and permanent disturbance of existing land uses would occur during construction of the amended Project facilities. Ninety-eight percent of the previously authorized Lewis Creek natural gas mainline right-of-way would occur on agricultural land that is used for farming annual herbaceous crops. The remaining two percent of land is industrial/commercial land, which consists of county roads, access roads, and wind farm roads. The previously authorized Lewis Creek produced water mainline would be collocated in the same right-of-way as the Lewis Creek natural gas mainline with identical land use. There is no pasture or grazing in the Project area. With the exception of the new permanent access roads and wells pads, no permanent impacts on agricultural land are anticipated after construction and operation of the Project.

East Cheyenne would allow agricultural land temporarily affected by construction to revert back to previous conditions. Agricultural production of herbaceous crops would resume after construction and have been previously accounted for. East Cheyenne would

follow their Project-specific Revegetation Plan and FERC's Plan to mitigate impacts on agricultural lands. Specifically, East Cheyenne would segregate up to 12 inches of topsoil from the ATWS during construction for actively cultivated or rotated croplands. Where topsoil is less than 12 inches deep, the actual depth of the topsoil would be removed and segregated based on the present soil types. In agricultural areas, the proposed natural gas pipeline would have a minimum cover depth greater than 4 feet over the top of the pipe, and deeper where possible, if requested by the landowner, to avoid any operational impacts on agriculture. East Cheyenne has also developed and would also implement its Exotic and Nuisance Species Control Plan to avoid or minimize the introduction or spread of invasive species. Specific measures include: pressure washing equipment at an off-site wash station prior to trucking it to the site; monitoring and selective spot treatment of any exotic and invasive species encountered; and developing a weed management plan with the Logan County Pest Control District, as necessary. Given East Cheyenne's proposed measures, we conclude impacts on agricultural lands would not be significant.

One previously authorized unconstructed road, PAR-015, would be reconfigured and shortened to connect with existing road PAR-015 to provide permanent access to a windfarm road and LC-M003. There are no changes to the previously approved existing, non-jurisdictional well locations, except for TAR-017 (which would be shortened) and the addition of an existing road TAR-108 (which was not included in the original certificate or subsequent amendment applications).

East Cheyenne would use a total of 6.6 acres for additional temporary workspaces, and all would occur only on agricultural lands. All temporary workspaces would be allowed to revert to previous conditions. Access roads within the Lewis Creek portion of the Project would require both industrial and agricultural lands. The industrial lands consist of local county roads and windfarm roads. The proposed Project would not require any new temporary access roads, and only new permanent access roads. Five new permanent access roads (PAR-103, -104, -105, -106, and -107) would be constructed for access to the Project monitoring wells would require 3.6 acres of agricultural land. The remaining access roads used have been previously authorized. Temporary and permanent land cover impacts are summarized in table 5.

Table 5 Land Use Impacts			
Project Component	Land Use	Construction Impacts (acres)	Operational Impacts (acres)
Lewis Creek Natural Gas Mainline (Logan County) ¹	Industrial	0.3	0.2
	Agricultural	16.0	7.6
	Total	16.3	7.7
Aboveground facilities (Injection/Withdrawal Well Pad LC-D021 and Monitoring Well Pads)	Industrial	4.0	4.0
	Agricultural	10.2	6.1
	Total	14.2	10.1
Permanent Access Roads (new and reconfigured)	Industrial	0	0.2
	Agricultural	8.4	3.6
	Total	8.4	3.7
Existing Access Roads	Industrial	0	3.7
	Agricultural	0	0
	Total	0	3.7
Access Roads Total	Total	8.4	7.4
Additional Temporary Workspace	Industrial	0	0
	Agricultural	6.6	0
	Total	6.6	0
Project Total		45.5	25.2

¹ The produced water mainline, LC fuel gas pipeline, and instrument air pipeline are included in the Lewis Creek natural gas mainline right-of-way in Logan County.

Land Conservation Program

As part of the original certificate application and subsequent amendment applications, East Cheyenne contacted landowners within the Project area and identified portions of the Project facilities would be within two tracts that were part of a CRP administered by the USDA and the FSA. One of the CRP sites is on land owned in fee by East Cheyenne that includes the existing compressor station. The Project facilities that would occur on CRP tracts would be a portion of the Lewis Creek Natural Gas Mainline, monitoring well pads LC-M004 and LC-M008, and new access road PAR-104; the previously authorized PAR-001 and PAR-026 access roads would also be on a CRP tract. East Cheyenne would disturb about 23 acres of CRP lands for construction and 9.3 would permanently be taken out of production for operation of this Project. East Cheyenne would work with landowners to determine appropriate seeds mixtures and planting methods for CRP lands, and restore properties in accordance with CRP objectives. Therefore, we conclude that impacts on CRP lands would be minimized to the extent practicable and not significant.

Special Resources

No planned properties or projects would occur on the proposed land for this Project amendment. No special land uses or specialty crops occur within 0.25 mile of the proposed Project. In addition, no recreation or public interest areas occur within 0.25 mile of the proposed Project.

Residential Areas

Based on a review of aerial photography, there are no structures, including residences, within 50 feet of the proposed Amendment facilities. East Cheyenne has already obtained a storage easement with the surface owners of the land affected by the proposed expansion of the buffer zone.

Visual Resources

Visual and aesthetic impacts would occur during Project construction operations. The drilling rig would be the primary impact on visual resources, and be temporarily visible to nearby residences and vehicle traffic along County Roads CR37, CR70, and CR68. These impacts would be temporary and would cease when well-drilling activities are completed. Therefore, we conclude these impacts would not be significant.

5.0 Cultural Resources

East Cheyenne conducted cultural resources studies in 2009 during the original project and the Colorado State Historic Preservation Officer (SHPO) agreed that no historic properties would be adversely affected. The Project facilities would have impacts on about 11 acres outside the previously investigated area. East Cheyenne conducted cultural resources surveys on the 11 acres and reviewed indirect effects on aboveground resources within a 0.5-mile-radius. East Cheyenne did not identify any cultural resources and submitted the information to the SHPO for comment on August 17, 2017. The SHPO concurred there would be no effects to historic properties in a letter dated September 12, 2017, and we agree.

We sent our NOI to the following tribes: Apache Tribe of Oklahoma, Northern Arapaho Tribe of the Wind River Reservation, Cheyenne and Arapaho Tribes of Oklahoma, Comanche Nation, Northern Cheyenne Tribe, Cheyenne River Sioux Tribe of the Cheyenne River Reservation, Crow Creek Sioux Tribe of the Crow Creek Reservation, Kiowa Indian Tribe of Oklahoma, Oglala Sioux Tribe, Rosebud Sioux Tribe of the Rosebud Indian Reservation, and Standing Rock Sioux Tribe of North & South Dakota. No responses have been filed.

East Cheyenne filed an Unanticipated Discovery Plan for Cultural Resources and Human Remains, and we find the plan acceptable.

East Cheyenne consulted with the SHPO regarding the potential effects on cultural resources. The SHPO did not object to the APE and concurred that the Project would have no effects on historic properties. Additionally no traditional cultural properties or properties of religious or cultural importance to tribes have been identified by East

Cheyenne, its consultants, the SHPO, or tribes. The FERC staff and the SHPO agree that the Project would have no effects on historic properties.

6.0 Air and Noise Quality

The term air quality refers to relative concentrations of pollutants in the ambient air. The subsections below describe air quality concepts that are applied to characterize air quality and to determine the significance of increases in air pollution. Air quality in the Project area would be affected by construction of the Project. Operation of the proposed Project would not result in any new air emissions sources, such as compressor stations, and would therefore not result in any new operational emissions.

6.1 Existing Environment

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare.⁹ NAAQS have been developed for seven “criteria air pollutants,” including nitrogen dioxide, carbon monoxide (CO), ozone, sulfur dioxide (SO₂), particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM₁₀), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA 2016). Additional pollutants, such as volatile organic compounds (VOC) and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA.

The EPA, state, and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS), or maintenance (area was formerly nonattainment and is currently in attainment). Logan County is designated attainment for all criteria pollutants.

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. Carbon dioxide, methane, and nitrous oxide are GHG that are emitted during fossil-fuel combustion. GHGs are non-

⁹ The current NAAQS are listed on EPA's website at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHG under the CAA. GHG emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The primary GHGs that would be emitted by the Project are carbon dioxide (CO₂), methane, and nitrous oxide. During construction and operation of the Project, these GHGs would be emitted from the majority of construction equipment.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO₂e). The CO₂e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO₂. Thus, CO₂ has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.¹⁰

6.2 Regulatory Requirements

The provisions of the CAA that are applicable to the Project are discussed below. Because the proposed Project would not result in any new or modified permanent emissions sources, no other regulatory requirements apply.

General Conformity

The lead federal agency must conduct a conformity analysis if a federal action would result in the generation of emissions that would exceed the conformity threshold levels of the pollutant(s) for which a county is designated nonattainment or maintenance. Estimated emissions for the Project are not subject to review under the general conformity thresholds because the Project is in an area classified as attainment/unclassifiable for all criteria pollutants.

6.3 State Air Quality Regulations

The potentially applicable state air regulations for the proposed Project are discussed below. Although Colorado has additional air quality regulations, no other regulations apply.

Odor Emissions

Regulation No. 2 of the Colorado Common Provisions Regulation set standards for allowable odor contaminants for the different land use areas of the state and outline

¹⁰ 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.

control measures to bring violators into compliance. The proposed Project would comply with the requirements of this regulation.

6.4 Construction Emissions Impacts and Mitigation

Project construction would result in temporary, localized emissions that would last the duration of construction activities (i.e., 4 months). Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines. Exhaust emissions would also be generated by delivery vehicles and construction workers commuting to and from work areas.

Construction activities would also result in the temporary generation of fugitive dust due to land clearing and grading, ground excavation, and driving on unpaved roads. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity.

Construction emissions were estimated based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Construction emissions were estimated using emission factors provided in the EPA's Compilation of Air Pollutant Emission Factors (AP-42) data, Colorado State's Department of Transportation's Mobile 6.2, and 40 CFR 98. Table 8 below provides the total Project construction emissions, including exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles, exhaust emissions from construction worker vehicles for commuting, and vehicles used to deliver equipment/materials to the site.

Pollutant	NOx	CO	SO ₂	VOC	PM ₁₀	PM _{2.5}	HAPs	CO ₂ e
Total Emissions	16.02	10.39	0.01	1.40	14.96	2.29	0.58	28,832.80

Construction emissions shown in table 6 are minimal and would not result in a violation or degradation of ambient air quality standards (i.e., the NAAQS). East Cheyenne would minimize construction exhaust emissions by operating equipment on an as-needed basis and maintaining equipment and vehicles in accordance with manufacturers' specifications and EPA mobile source emission regulations. Additionally, East Cheyenne would use low-sulphur fuel, limit equipment idling, and use newer equipment, if possible. In order to mitigate and minimize fugitive dust, East Cheyenne would implement measures contained in its Dust Control Plan, including the following:

- use water from an existing industrial water well (WSW No.1) on roadways, construction areas, and spoil storage stockpiles;
- maintain reduced speed zones in construction areas; and
- maintain equipment regularly.

Construction emissions would occur over the duration of construction activity and would be emitted at different times throughout the Project area. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. With the mitigation measures proposed by East Cheyenne, we conclude air quality impacts from construction would be temporary and would not result in significant impact on local or regional air quality.

6.5 Noise

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Construction and operation of the Project would affect overall noise levels in the Project area. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level (L_{eq}) and day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same 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, the L_{dn} is the L_{eq} plus a 10 decibel on the A-weighted scale (dBA) penalty added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used to assess noise impacts because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA, 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise (Bies and Hansen 1988).

6.6 Federal Noise Regulations

In 1974, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. 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 proposed Project at noise sensitive areas (NSAs). NSAs are defined as homes, schools, churches, or any location where people reside or gather. FERC requires that the noise attributable to any new compressor engine or modifications during full load operation not exceed an L_{dn} of

55 dBA at any NSAs. Due to the 10 dBA nighttime penalty added prior to the logarithmic calculation of the L_{dn} , for a facility to meet the 55 dBA L_{dn} limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA L_{eq} at any NSA. Although no new compressor stations are proposed in the Project, these noise requirements are typically used in assessing impacts from construction activities planned between the nighttime hours of 10:00 pm to 7:00 am.

6.7 State Noise Regulations

The state of Colorado establishes noise levels for oil and gas facilities based on land use type in Division 404, Regulation 1, and Section 802 of the Colorado Code of Regulations. The state noise level requirements range from 50 dBA during nighttime hours (defined from 7:00 pm until 7:00 am) in residential/agricultural/rural areas to 80 dBA during the daytime in industrial areas. Sound levels are measured at a distance of 350 feet from the noise source, or if the property is owned or leased by the operator, at the property line or whichever is greater. East Cheyenne would comply with both the FERC and state-level noise requirements. No other applicable state or local noise regulations were identified for the Project.

6.8 Ambient Noise Conditions

The proposed Project would be in a predominantly rural and agricultural setting in Logan County, Colorado. There are only three residences within the vicinity of the storage field, and only one of those residences is within 0.5 mile from one of the proposed well locations (LC-M003). East Cheyenne completed an ambient sound survey in September 2013 to quantify noise levels from the existing compressor station at the storage field. Because there have been no changes to existing noise levels and no additional NSAs have been constructed since this sound survey, the existing ambient noise levels from the September 2013 survey were used to evaluate impacts on NSAs during construction of the proposed Project. No changes to the existing compressor station is proposed and the sound levels are used for informational purposes only to establish ambient conditions. The results of the ambient sound survey are provided in table 9.

6.9 Construction Noise Impacts and Mitigation

Noise would be generated during construction activities, including during construction of the well pads, drilling of new wells, and pipeline installation. The majority of construction-related noise would result from drilling the new wells which is estimated to last for about 2 weeks at each proposed well location, with the first 7 days requiring 24 hours per day of drilling while the last 7 days would require 12 hours of daytime drilling. East Cheyenne estimated the impacts of construction-related activities on the one NSA within 0.5-mile of the construction areas in the table below.

NSA	Type	Distance and Direction from Facility	Ambient Background Sound Levels (L _{dn} dBA)	Predicted Sound Level Contribution from Drilling (L _{dn} dBA)	Predicted Total Sound Level (L _{dn} dBA)	Predicted Change in L _{dn} from Existing Ambient (dBA)
NSA 1	residence	1,748 feet north from well LC-M003	56	52	56	0

The noise contribution from the drilling activities is anticipated to be less than 55 dBA at the nearest NSA. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. East Cheyenne would employ noise mitigation measures during construction that include ensuring sound muffling devices, which are provided as standard equipment by the construction equipment manufacturer, are kept in good working order, and noise-generating equipment (such as generators) would be stationed as far from NSAs as possible. If needed, East Cheyenne would employ additional noise abatement techniques and other measures during construction to mitigate noise disturbances at NSAs, including the installation of temporary noise barriers and limiting construction to daylight hours, if possible. If noise levels continue to be greater than 55 L_{dn} dBA at NSAs, East Cheyenne would also offer temporary housing relocation to residents at impacted NSAs. Based on the temporary nature of construction, the mitigation measures proposed by East Cheyenne, and considering that the majority of construction activities would occur during daytime hours, we conclude that the proposed Project would not result in significant noise impacts on residents or the surrounding communities.

The proposed Project would not result in installation of any additional sources or changes to the operation of the existing storage field that would result in impacts on ambient noise levels. Therefore, the proposed Project would not result in any operational noise.

7.0 Reliability and Safety

The transportation of natural gas by pipeline involves some incremental risk to the public due to the potential for accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture. 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. Methane has an auto-ignition temperature of 1,000 °F and is flammable at concentrations between 5 percent and 15 percent in air. An unconfined mixture of methane and air is not explosive; however, it may ignite and burn if there is an ignition source. A flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

7.1 Safety Standards

The DOT is mandated to prescribe minimum safety standards to protect against risks posed by pipeline facilities under Title 49 of the U.S. Code, Chapter 601. The DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA's safety mission is to ensure 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 facilities associated with the proposed Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The DOT specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion. The DOT also prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Each pipeline operator is required to establish an emergency plan that includes procedures to minimize the hazards of a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- emergency system shutdown and safe restoration of service;
- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property, and making them safe from actual or potential hazards.

The DOT requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. East Cheyenne would provide the appropriate training to local emergency service personnel before the pipeline is placed in service.

The Project's construction and operation would represent a minimum increase in risk to the public; however, we are confident that with continued compliance with DOT safety standards, operation, and maintenance requirements, the Project would be constructed and operated safely.

8.0 Cumulative Impacts

In accordance with NEPA and with FERC policy, we evaluated the potential for cumulative effects of the amended Project. Cumulative impacts represent 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.

This cumulative effects analysis generally follows a method set forth in relevant Council on Environmental Quality and EPA guidance and focuses on potential impacts from the proposed Project on resource areas or issues where the incremental contribution would be potentially significant when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affect a resource potentially affected by the Project;
- cause this impact within all, or part of, the Project's impact area; and
- cause this impact within all, or part of, the time span for the potential impact from the Project.

8.1 Projects Identified Within the Geographic Scope

Our cumulative impacts analysis considers actions that impact environmental resources affected by the proposed action, within all or part of the Project area affected by the proposed action (i.e., geographic scope), and within all or part of the time span of the impacts. The geographic scope used to assess cumulative impacts for each resource are discussed below in table 8. The projects considered in the cumulative impacts analysis are provided in table 9.

Table 8	
Geographic Scope of Cumulative Impacts	
Resource	Geographic Scope
Soils and Geology	Construction Workspaces
Groundwater, Wetlands, Vegetation, Wildlife	Hydrologic Unit Code (HUC) 12 Watershed
Surface Water Resources	HUC 12 Watershed. For direct in-water work (e.g. dredging) include potential overlapping impacts from sedimentation, turbidity, and water quality
Cultural Resources	Overlapping impacts within the Area of Potential Effects
Land Use	1 mile radius
Visual	For aboveground facilities, distance that the tallest feature at the planned facility would be visible from neighboring communities. For pipelines, use 0.25 mile and existing visual access points (e.g. road crossings)
Noise – Operations	Other facilities that would impact any NSA within 1 mile of a noise emitting permanent aboveground facility
Noise – Construction	0.25 mile from pipeline or aboveground facilities. 0.5 mile from horizontal drill installation
Air Quality – Operations	50 kilometers (about 31.1 miles)
Air Quality – Construction	0.25 mile from pipeline or aboveground facilities
Socioeconomics	Affected counties and municipalities
Environmental Justice	Census tracts affected counties

The EA analyzed the Project amendment impacts on geology and soils; water resources; vegetation and wildlife; cultural resources; land use and visual resources; and air quality and noise. As described in section B of this EA, the Project-related construction and operational impacts would not impact geological resources or be impacted by geologic hazards; therefore, cumulative impacts on geology would not be realized and not evaluated for cumulative impacts. Additionally, the Project would not affect wetlands, waterbodies, historical properties, have socioeconomic impacts, or operational impacts on air quality or noise, and as such cumulative impacts on these resources were not considered in the cumulative impact analysis.

Project construction and restoration measures, including erosion control devices, are designed to confine impacts on soil resources to the project workspaces. Therefore, we evaluated potential cumulative impacts on soils within the same construction footprint as the amended Project facilities.

Impacts on vegetation, wildlife, and special status species could extend outside of the workspaces to plant seed dispersion areas or individual home ranges for species with potential to occur in the amended Project area, but would generally be contained to a relatively small area. We believe the watershed scale is most appropriate to evaluate impacts as it provides a natural boundary and a geographic proxy to accommodate

general wildlife habitat and ecology characteristics in the Project area. Therefore, we evaluated projects within the HUC-12 watersheds crossed by the Project amendment.

Temporary impacts on air quality, including fugitive dust, would be largely limited to areas within 0.25 mile of active construction. We evaluated current and proposed sources that overlap in time and location with construction activities.

Impacts from construction noise could potentially contribute to cumulative impact on NSAs within 0.5 mile of drilling activities. Therefore, we evaluated current and proposed sources within 0.5 mile of the Lewis Creek Storage Facility.

An evaluation was performed to identify past, present, and reasonably foreseeable future projects within the resource-specific geographic scopes. In this analysis, we consider the impacts of past projects as part of the affected environment (environmental baseline) which was described and evaluated in the preceding analysis. However, present effects of past actions that are relevant and useful are also considered. East Cheyenne obtained information about present and future planned developments by consulting sources, including federal, state, and local agency and municipality websites, reports, and direct communications; permit applications with various agencies; and online database searches. The projects identified as occurring within the resource-specific geographic scopes and within current and/or reasonably foreseeable timeframe are identified based on resource type below in tables 9 and 10.

8.2 Potential Cumulative Impacts of the Proposed Action

Tables 9 and 10 lists the past, present, and reasonably foreseeable projects identified within the geographic scope for each resource, and considered in this cumulative impact analysis.

Table 9 Past & Current Developments/Actions/Projects for Cumulative Impact Analysis		
Timeframe	Description	Location
~1883 to current	Railroad (Union Pacific Railroad)	4 miles East of Project Area
~1890s to current	Small cattle farms and large scale cattle fattening operations	Logan County
~1880s to current	Farming of dry or arid land crops: wheat, milo, millet, grasses & irrigated crops corn, alfalfa, beans, barley and oats	Logan County, including Project Area
~1910 – 1912 (construction) 1912 to current (operation)	North Sterling Reservoir North Sterling Irrigation District	10 miles South of Project Area in Logan County
Late 1940s to 1960s	Oil and gas exploration and production	Project Area
Current	Railroad car repair company (Sterling Rail Services, LLC)	Sterling, CO
2000 to current	Largest state correctional facility in Colorado (Sterling Correctional Facility, 2,500 inmates)	Sterling, CO
Current	Ethanol plant (Sterling Ethanol, LLC)	Sterling, CO
2007 to current	Wind farms: Peetz Table Wind Energy Center Northern Colorado Wind Energy Center Colorado Highlands Wind Project (NextEra Energy)	Within Project Area Peetz Table, west, north and east of Project Area in Logan County
~1960 to current	USAF 90th Missile Wing LGM-30 Minuteman, 320th Missile Squadron Missile Alert Facility (MAF) (The MAF consists of a buried and hardened Launch Control Center (LCC) and an above-ground Launch Control Support Building and 10 underground launch facilities.)	Project Area

Table 10 Reasonably Foreseeable Developments/Actions/Projects for Cumulative Impact Analysis		
Agency/Organization/Company	Contact	Developments/Actions/Projects
Colorado Department of Transportation and Development	www.codot.gov/proj	Projects in Logan County: <ol style="list-style-type: none"> 1. US 6 highway repaving east of Sterling, CO; August to November 2017; 12 miles 2. CO 6 resurfacing near Fleming, CO; September to October 2017 3. Future: CO 14 Sterling S-Curve alignment design concept; US 6, CO 14 in Sterling, CO. Colorado Department of Economic Development projected for 2019.

Within the Project area there are historic and current oil and gas exploration activities, farming and cattle ranching, railroad activities, and wind-energy production. As discussed, the Project would temporarily affect soils, groundwater, vegetation, land use, air quality and noise during construction, and potentially indirectly impact local wildlife during construction. Cumulative impacts from past, present, and reasonably foreseeable activities and projects shown in tables 9 and 10 on these individual resources are addressed below:

Soils

Historic oil and natural gas exploration and development activities, as well as active farming activities have cumulatively impacted soils in the project area changing the landscape from wide (but often sparse) emergent vegetation. East Cheyenne's Project would cumulatively add impacts on soils resources as a result of construction clearing. However, operations would not permanently modify vegetation to industrial use.

Future construction of the Colorado Department of Transportation and Development (CODOT) Sterling S-Curve Road project in Sterling, Colorado could have cumulative soil impacts with East Cheyenne's Project during construction. CDOT's S Curve project is near Colorado State Route 14 and U.S. Highway 6 in Sterling, Colorado, approximately 20 miles from East Cheyenne's project. The direct effects of construction of East Cheyenne's Project in Logan County would be highly localized and of limited duration (primarily during the period of construction). Given the distance between the two projects, the CODOT projects would not have cumulative impacts with East Cheyenne's Project.

As discussed in section B.1.2 East Cheyenne would construct and operate its proposed facilities to minimize impacts on soils by implementing their Plan and Procedures which are designed to minimize adverse impacts on soils. In accordance with its Plan and Procedures, East Cheyenne would employ one EI to monitor construction activities and to verify compliance with applicable environmental mitigation measures and conditions. Project construction-related impacts on soils would be temporary in nature and would be further mitigated through topsoil segregation in prime farmland and actively cultivated areas, and areas impacted would be restored to pre-construction conditions resulting in no loss of soil function with the exception of the permanent proposed facilities totaling 25.2 acres. Further, ATWS would be restored to pre-construction conditions resulting in no loss of soil function. As such, the Project would not contribute to cumulative and permanent soil impacts.

Groundwater, Vegetation and Wildlife

Historic land use, construction, and development practices (farming, oil and gas exploration, cattle ranching, wind-energy development) have permanently impacted native vegetation communities in the Project area and could have accounted for introduction of exotic, nuisance, and/or non-native vegetation. Agricultural land is comprised of cultivated species, the majority of which are annual crops. As discussed in section 3.1 of this EA, land converted to industrial/commercial usage contains no vegetation and includes county roads and existing access roads. There is no unique, sensitive, or protected vegetation in the vicinity of the Project area.

Project construction could impact local wildlife and special status species such as the plains sharp-tailed grouse during the breeding season. Within the Project area including the Lewis Creek drainage basin, the operation of the existing Union Pacific railroad, cattle ranches, farming operations, and wind energy development at the existing NextEra Energy Resources facilities could likewise impact local wildlife and the sharp-tailed grouse during their breeding and nesting season.

Cumulative impacts on groundwater, vegetation, and wildlife resources (primarily due to increased turbidity or contamination due to spills), could extend outside of the Project workspaces, but would be contained to a relatively small area (in other words, the Hydrologic Unit Code 12 sub-watersheds). The Project could contribute cumulatively to impacts on these resources with the CODOT Sterling S-Curve Road project in Sterling, Colorado. However, the CODOT project would be required to implement SPCC Plans, and other mitigation measures required by the state and federal permits. As described in section B, the Project would have minimal potential for adverse impacts on groundwater, vegetation, and wildlife resources because of the proposed construction techniques and mitigation measures including:

- obtaining permits from the COGCC to construct and operate the I/W wells, and would install several steel casing strings cemented to ground surface to protect shallow aquifers from cross contamination by poor quality deeper groundwater;
- implementing mitigation and restoration measures in FERC's Plan and its Project-specific Revegetation Plan to minimize impacts on vegetation, and would implement its Exotic and Nuisance Species Control Plan to avoid or minimize the introduction or spread of invasive species; and
- implementing the CDOW's recommendation to not conduct construction activities between March 15th and July 1st to help reduce disturbances to any plains sharp-tailed grouse that may be present in the Project area.

Therefore, while the existing projects and the CODOT Sterling S-Curve Road project have the potential to impact these resources, the Project would not contribute significantly to cumulative impacts on groundwater resources, wetlands, vegetation, and wildlife resources within the geographic scope of the Project.

Land Use and Visual Resources

Within a one-mile radius of the Project area, impacts on land use have occurred from historic oil and natural gas exploration and development, farming, and wind-energy development. These impacts include construction and operation of well pads, gathering facilities, wind turbines, access roads, and agricultural and ranching activities. Impacts on land use and visual resources could occur due to the construction and permanent operation of CODOT's project in Sterling, Colorado; however, we conclude that there would not be any cumulative impacts with East Cheyenne's Project given the distance between the projects (about 20 miles).

Land use types that would be affected by the Project include industrial/commercial and agricultural lands. Construction of new pipelines, aboveground facilities, permanent access roads, and ATWS would temporarily disturb a total area of 45.5 acres, and 20.5 acres would be permanently impacted during Project operation. However, given the minimal permanently impacted acreage, and similar land use within one-mile of the Project, we conclude that the Project would not incur a significant cumulative incremental impact on land use.

Within 0.5 mile of the Project's closest well pad, the operation of the NetEra wind farm turbines, each with a maximum blade tip height of 427 feet, provides for an existing, permanent impact on visual resources. The drilling rigs used to drill the Project wells would have a temporary impact on visual resources during well drilling and construction and would be visible to residences and vehicle traffic along County Roads CR37, CR70, and CR68. These temporary construction impacts would cease when well-drilling activities are completed. After construction, a 10-foot-tall communication antennae would be installed on each well pad which would be visible from up to 0.25 mile from the well pads. There is one residence within 0.5 mile of one well pad (LC-M003) and, as such, operation of the Project would contribute a small insignificant incremental cumulative permanent impact on visual resources. No other projects would contribute cumulatively to visual impacts.

Air and Noise Quality

The Project would have temporary impacts on air quality and noise within 0.25 mile from the pipeline and aboveground facility locations due to emissions associated with construction. The CODOT project is in Sterling, Colorado, about 20 miles from

East Cheyenne's Project. As such, there are no other projects that are within 0.25 mile of East Cheyenne's Project that would have a cumulative impact on air quality and/or noise during the Project's construction timeframe. Therefore, there would not be a cumulative impact on air quality or noise.

We conclude that the temporary and permanent direct and indirect impacts from construction and operation of the Project, when combined with the effects of projects in tables 9 and 10 would not result in any significant cumulative impacts on the specific resources discussed above.

C. ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative and system alternatives. The evaluation criteria used for developing and reviewing alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

Through environmental comparison and application of our professional judgement, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, geographic information system data, aerial imagery) and assume the same general workspace requirements.

The alternatives were reviewed against the evaluation criteria in the sequence presented above. The first consideration for including an alternative in our analysis is whether it could satisfy the stated purpose of the Project. An alternative that cannot achieve the purpose of the Project cannot be considered as an acceptable replacement for the Project. The second evaluation criteria is feasibility and practicality. Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. An alternative that would require the use of a new, unique, or experimental construction method may not be technically practical because the required technology is not available or is unproven. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the Project economically impractical.

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in

terms of environmental impact would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

1.0 No-Action Alternative

Under the no-action alternative, East Cheyenne would not conduct the requested modifications to the well field and none of the impacts associated with this Project would occur. The no-action alternative would avoid temporary and permanent environmental impacts associated with the Project; however, East Cheyenne is currently certificated to construct nine wells in the Lewis Creek Storage Field, with each well on separate well pads and natural gas and water pipeline laterals connecting to the Process Facility well pads. The Project objectives include reducing the number of I/W wells to six. The proposed facilities would also include one additional monitoring well, but would lower environmental impacts due to its net effect.

Although a Commission decision to deny the proposed action would avoid the environmental impacts addressed in this EA, the No Action Alternative would leave the currently certificated layout of the Lewis Creek portion of the Project unchanged, resulting in additional construction activity and ground disturbance, and associated greater environmental impacts. The principal purpose of the proposed Project modifications is to optimize and fully utilize the storage capability of the previously certificated project, allowing for a more efficient development of the storage fields. For these reasons, we dismissed the no action alternative as a reasonable alternative to meet the Project's objectives.

2.0 System and Storage Alternatives

Because this Project is itself an optimization of the previously certificated project, no system alternatives involving optimization of the originally certificated Project in CP10-34-000 were considered. Additionally, the Lewis Creek D Sands well locations were chosen by East Cheyenne to maximize withdrawal, and exhibited preferable production characteristics, porosity, permeability, and structural location. The proposed action would allow East Cheyenne to provide additional storage service to the market with minimal impacts from construction.

Because the proposed Project did not present any environmental concerns, and because no issues were raised during scoping, we did not further evaluate any site alternatives and the proposed site is the preferred alternative.

D. STAFF'S CONCLUSION AND RECOMMENDATIONS

Based on our analysis, we have determined that if East Cheyenne constructs and operates the proposed facilities in accordance with its application and supplements, and our recommended mitigation measures below, approval of the Project Amendment would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact, and include the mitigation measures listed below as conditions of any Certificate the Commission may issue.

1. East Cheyenne shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. East Cheyenne must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (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 the Office of Energy Projects (OEP) **before using that modification.**

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.

3. **Prior to any construction**, East Cheyenne shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel shall be informed of the EIs' authority and have been or will 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 facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, East Cheyenne 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 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.

East Cheyenne's exercise of eminent domain authority granted under NGA Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. East Cheyenne's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. East Cheyenne shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and 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 workspaces allowed by the Commission's Plan and/or minor field realignments per landowner needs and requirements that 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 acceptance of the authorization and before construction begins**, East Cheyenne shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. East Cheyenne must file revisions to the plan as schedules change. The plan shall identify:
- a. how East Cheyenne would 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 East Cheyenne would 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 the company would ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions East Cheyenne 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 East Cheyenne's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) East Cheyenne would follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for the:
 - i. completion of all required surveys and reports;
 - ii. environmental compliance training of onsite personnel;
 - iii. start of construction; and
 - iv. start and completion of restoration.

7. East Cheyenne shall employ at least one EI for the Project. The EI(s) 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, East Cheyenne shall file updated status reports with the Secretary on a **biweekly** basis until all construction and restoration activities are complete. On request, these status reports shall also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. an update on East Cheyenne's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for work in 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 that 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 East Cheyenne from other federal, state, or local permitting agencies concerning instances of noncompliance, and East Cheyenne's response.
- 9. East Cheyenne must receive written authorization from the Director of OEP **before commencing construction of any Project facilities.** To obtain such authorization, East Cheyenne must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
- 10. East Cheyenne must receive written authorization from the Director of OEP **before placing the Project into service.** Such authorization shall 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 placing the authorized facilities in service,** East Cheyenne shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been 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 East Cheyenne 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.

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F. LIST OF PREPARERS

Rana, Tony – Project Manager, Geology and Soils, and Groundwater

M.S., International Development, 2012, Tulane University

B.S., Geology, 1984, New Jersey City University

Graduate Studies, Hydrogeology and Geochemistry, 1985-1988, Oklahoma State University

Augustino, Kylee- Air Quality and Noise, Safety and Reliability

M.S., Environmental Engineering, Johns Hopkins University, 2016

B.A. & Sc., Biology and Geography, McGill University, 2005

Bloomfield, Andrea – Deputy Project Manager, Land Use, Cumulative Impacts, Alternatives

B.S., Environmental Management, 2018, University of Maryland University College (*Pending*)

Howard, Eric - Cultural Resources

M.A., Anthropology, 1998, University of Tennessee

B.A., Anthropology, 1992, University of Tennessee

Mallory, Christine – Water Resources and Wetlands, Fisheries, Vegetation and Wildlife

M.S., Environmental Management, 2013, Samford University

B.S., Biology, 2012, Stillman College

Appendix A

Project Figures

Figure 1. Project Location

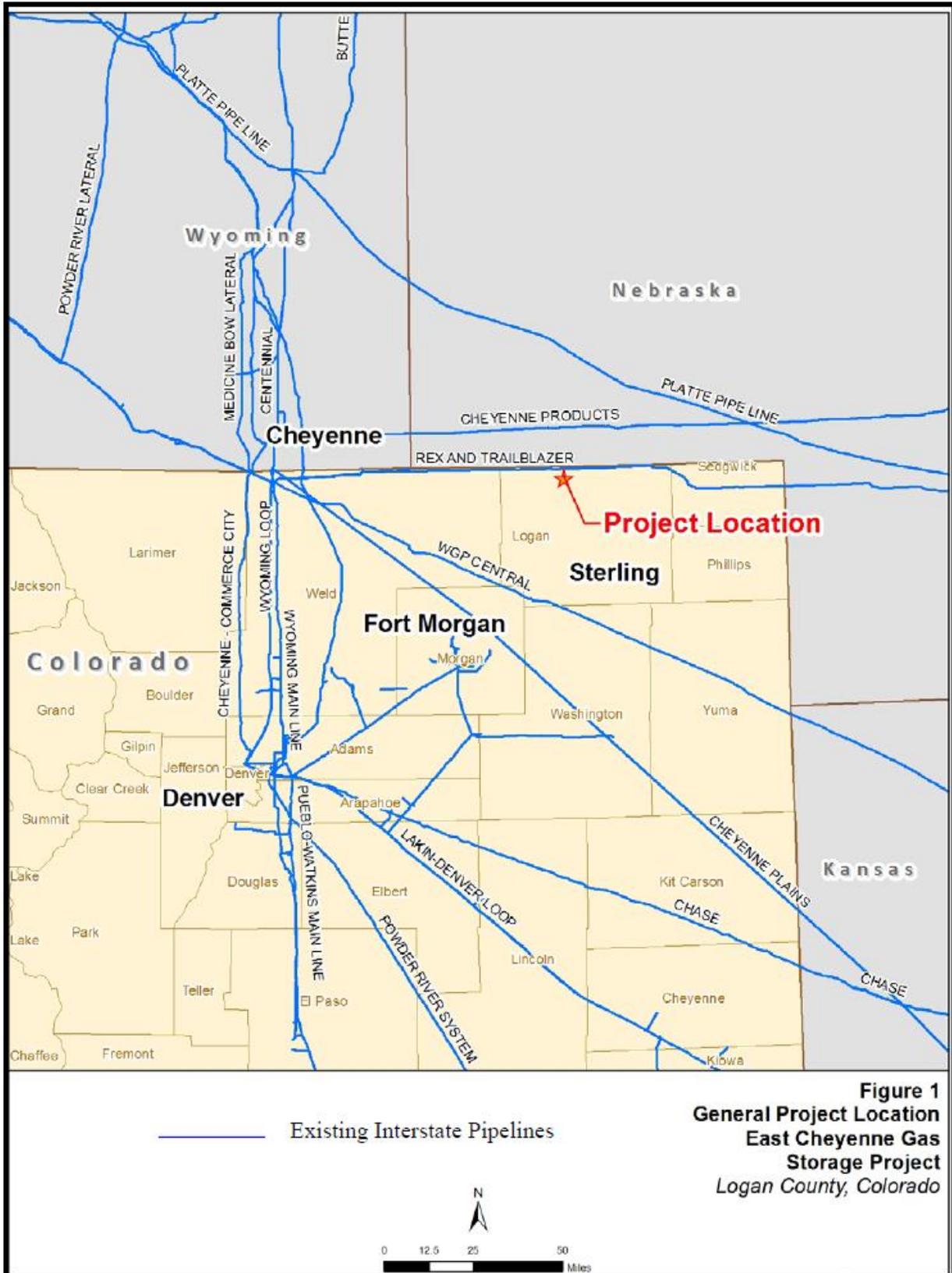


Figure 2. Project Overview

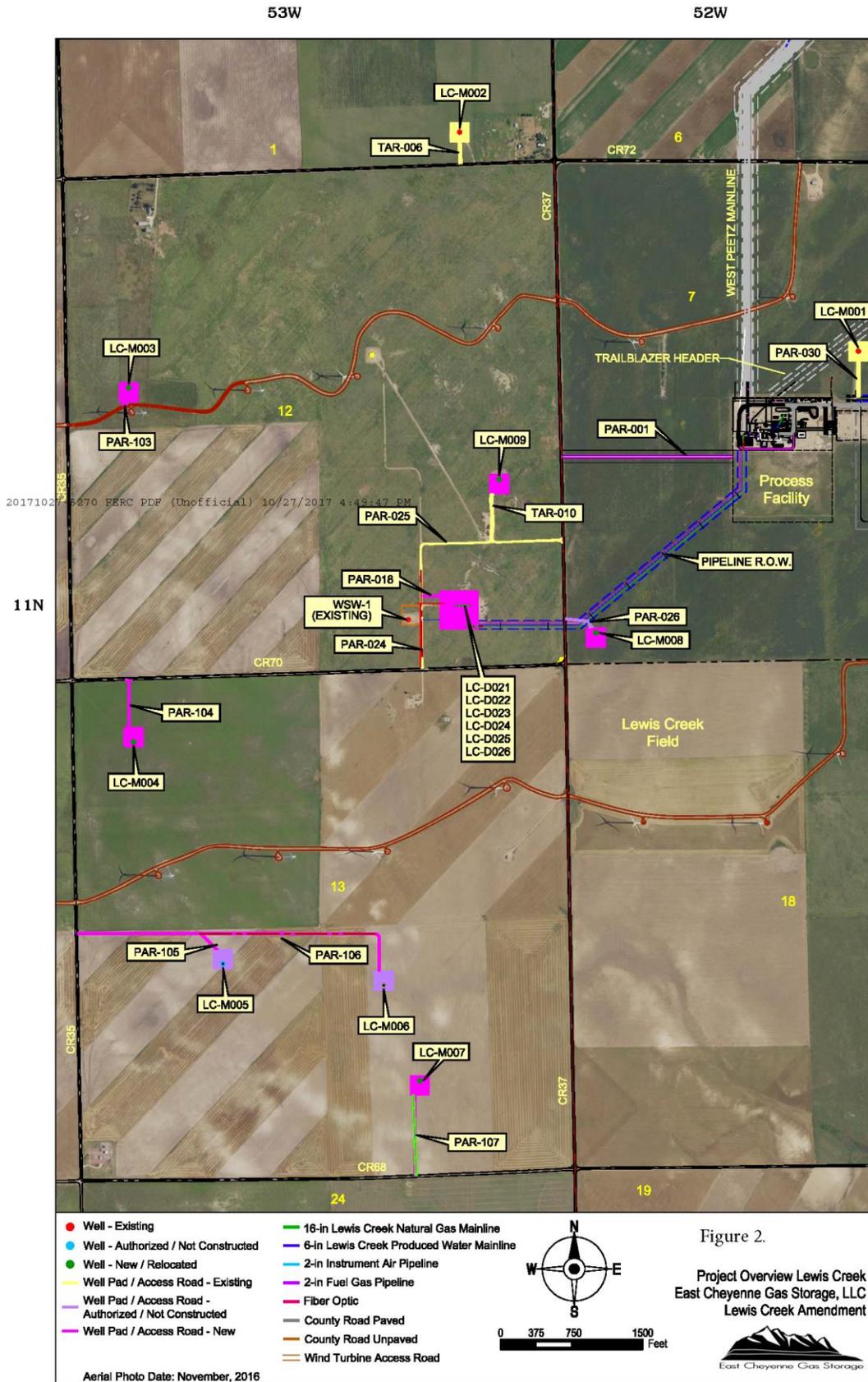
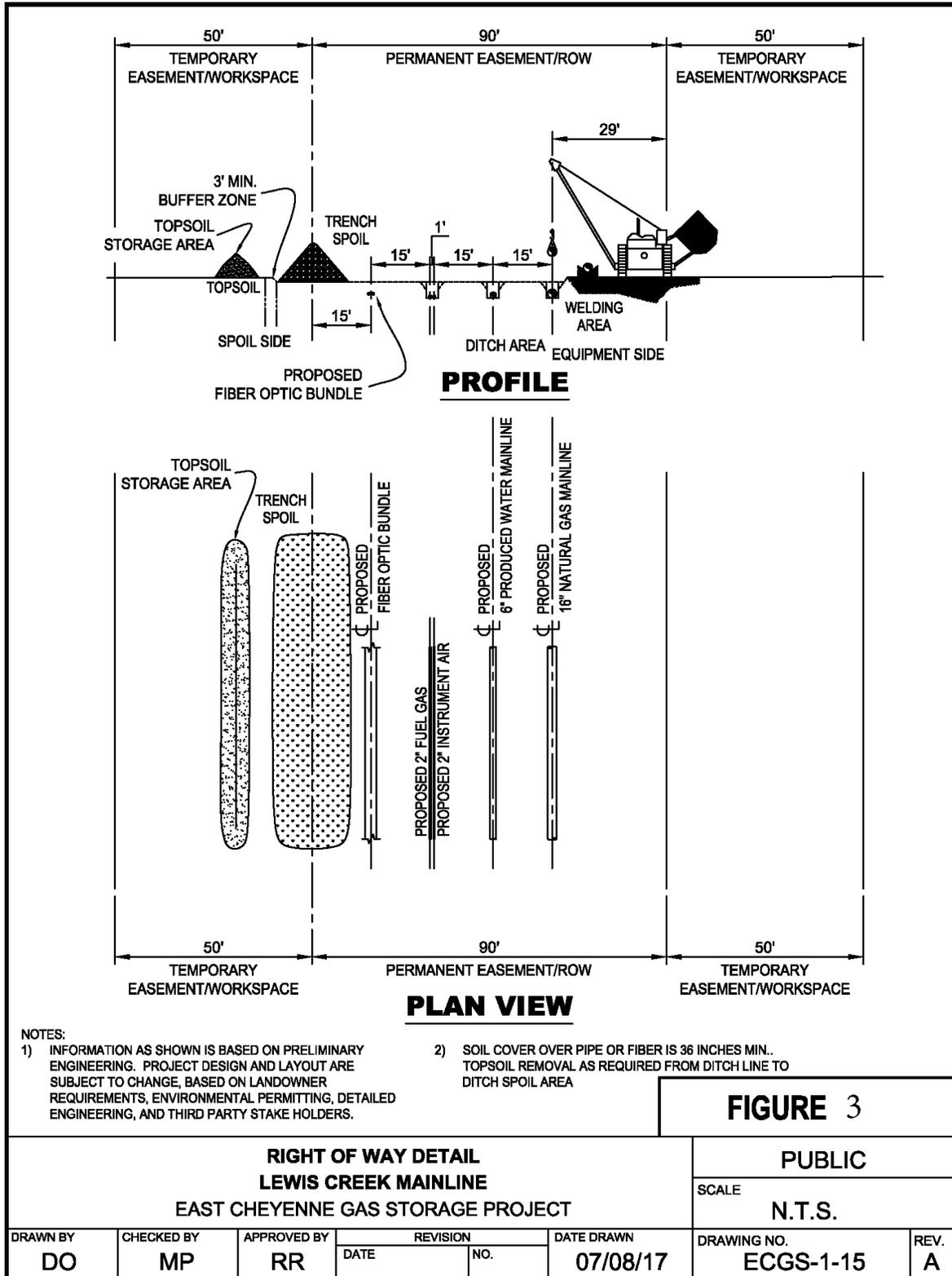


Figure 3. Right-of-way Overview



Document Content(s)

CP18-11-000 EA 3-29-18.PDF.....1-63