

OE2 North 8" NGL and 20" Residue Gas Pipelines

Reclamation Inspection Report

Docket Number: PU-20-247

Prepared for North Dakota Public Service Commission



September 2022

Reclamation Inspection Report

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1 Executive Summary

The North Dakota Public Service Commission (PSC) retained Barr Engineering Co. (Barr) to complete a reclamation inspection for the construction of an 8-inch Natural Gas Liquids (NGL) and a 20-inch Residue Gas Pipeline in Williams County, North Dakota (ND), constructed by OE2 North LLC (OE2). The purpose of the inspection is to ensure the project is constructed in compliance with siting laws and rules and the applicable PSC Orders for the project.

The reclamation inspection was conducted on 12 August 2022. The inspection included observations of the reclaimed pipeline routes, reclaimed horizontal directional drilling (HDD) bore workspace areas, erosion control installations, and aboveground interconnection locations. No major issues were observed, though continued monitoring and maintenance is recommended in hayland and cropland where annual weeds comprised approximately 50% cover. The landowner should be consulted for possible actions such as mowing or spraying. Overall, reclamation efforts of the project are satisfactory and appeared to have been completed according to Natural Resource Conservation Service (NRCS) recommendations. The project is considered to be in compliance with the applicable siting laws, rules, and PSC orders.

2 Background and Scope

2.1 Introduction

The OE2 8-inch natural gas liquids (NGL) and 20-inch Residue Gas Pipeline (Project) is the installation of an approximately 1.28-mile long NGL pipeline and an approximately 4.67-mile long residue gas pipeline, located in Sections 26, 27, and 35, Township 154 North, Range 104 West and Sections 2 and 11, Township 153 North, Range 104 West (**Appendix A, Exhibit 1**). The 8-inch pipeline transports NGLs from OE2's Bill Sanderson Gas Plant to an interconnection point with a ONEOK pipeline. The 20-inch pipeline transports residue gas from OE2's Bill Sanderson Gas Plant to an interconnection point with a Northern Border/TransCanada pipeline.

The NGL pipeline has a flow rate capacity of up to 80,000 barrels per day, and the residue gas pipeline has a flow rate capacity of up to 250 million cubic feet per day. Aboveground facilities for the Project include valving, measurement and associated instrumentation at the terminus of the NGL and residue gas pipelines. The lines are co-located to the interconnection of the NGL pipeline to the ONEOK facility.

The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-20-247 on 26 August 2020, granting Certificate of Corridor Compatibility No. 218 and Route Permit No. 228 for the 8-inch line and Certificate of Corridor Compatibility No. 219 Route Permit No. 229 for the 20-inch line.

2.2 Regulatory Purpose and Need

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) charges the Public Service Commission with determining that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Inspections during construction ensure that such projects are built in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and applicable Commission Orders.

2.3 Scope of Work

The NDPSC retained Barr Engineering Co. (Barr) to perform a reclamation inspection of the Project. Barr subcontracted with Meadowlark Environmental, LLC (Meadowlark) to complete the reclamation inspection. Barr's scope of work was to complete and document an on-site reclamation inspection upon completion of a minimum of one growing season after the construction phase of the project to verify the project was constructed in compliance with the siting laws, rules, and applicable Commission Orders and to determine whether the area affected by construction activities has been restored as near as practicable to the condition as it existed prior to the beginning of construction, including the reestablishment of desired plant species where applicable. This report contains site visit observations and a summary of findings and issues that should be addressed for the Project to be considered complete and in full compliance.

3 Findings of Site Inspection

3.1 Methods

Sara Simmers, Project Manager/Field Inspector for Meadowlark visited the Project site on 12 August 2022 to conduct the reclamation inspection. Representative for OE2 Tom House, Bakken Operations Manager, accompanied Ms. Simmers. The site was visually inspected by driving to access points and then either walking or driving via side-by-side off-road vehicle within the project right-of-way (ROW). Photos (iPhone 7) and geographic coordinates were recorded at observation points using a handheld Global Positioning System (GPS) device (Trimble R1; <1m accuracy; WGS84 datum).

The inspection included observations of the reclaimed pipeline routes, reclaimed horizontal directional drilling (HDD) bore workspace areas, erosion control installations, and aboveground interconnection locations. Plant species composition was recorded within reclaimed areas.

3.2 On-Site Inspection Observations

Overall, reclamation efforts along the pipeline routes are satisfactory and appeared to have been completed according to NRCS recommendations. Refer to **Appendix A, Exhibit 2**, Photo Locations, and **Appendix B**, Photo Log for detailed descriptions of observations. OE2 used Jomax Construction Company, Inc. (Jomax) as their reclamation contractor for the project. OE2 staff regularly monitor the pipeline routes for erosion or other problems. According to OE2 Manager Mr. House, OE2 has a positive working relationship with the landowner. They are in frequent communication and OE2 works to promptly address any problem areas or issues noticed by the landowner.

The majority of the reclaimed pipeline routes went through adjacent native grassland/rangeland and had dense stands of seeded grasses, with 75% cover or more, minimal annual weeds, and minimal bare ground (Photos 1, 3, 8, 9). These areas appeared to have overall good plant establishment with adequate cover to stabilize soils. It appeared these areas had been re-seeded with a grass cultivar seed mix. Intermediate wheatgrass and slender wheatgrass were dominant on the co-located segment of the pipeline routes. The remainder of the reclamation of the residue pipeline through native rangeland was dominated by western wheatgrass, slender wheatgrass, and green needlegrass. Reclamation seeding appeared to be in accordance with NRCS guidelines.

One segment of the residue pipeline where it angled southwest across rolling hills had areas of bare soil (Photos 11, 12). However, the stand of reclaimed grasses was adequate and no erosion problems were apparent. Further, the adjacent undisturbed native grassland hilltops also naturally had bare soils and minimal topsoil development. The reclamation matches the surrounding area.

Reclamation success through hayland and cropland was not as successful as through the native rangeland. Generally, cover of hay or crop (safflower) was roughly 50%, with the remainder of the cover in annual weeds such as kochia or Russian thistle (Photos 5, 14, 15, 16). In contrast, annual weeds were not a problem in soybean cropland (Photos 17, 18). The cause of the high cover of annual weeds is unclear. Dominant annual weed cover is expected within the first few years of reclamation. Over time, annual weeds should decrease. The practices of the

landowner may also be a factor, and the landowner should be consulted to discuss how he wants this issue addressed. Spraying or mowing in the early parts of the growing season could help to reduce the seed set of the annual weeds. No noxious weed populations were noted during the inspection.

The steep drainage and stream features avoided by HDD bores were in good condition (Photos 1, 2, 4, 10, 13). The workspace areas on either side of the bore were reclaimed well. Disturbance to erosive slopes and areas of minimal topsoil, as well as aquatic resources, was avoided through the use of this technique.

Interconnections to pipeline end points appeared to be in good condition. Fences around aboveground valves and fences and gates throughout the project route were repaired or replaced. The inspection confirmed that the project route was free of debris and waste (Photos 6, 7, 19). The reclamation of the project appears to meet all siting laws, rules, and Commission Orders.

4 Issues to Resolve and Recommendations

The reclamation inspection of the OE2 8-inch NGL and 20-inch Residue Gas Pipelines has verified that the project is constructed in compliance with the siting laws, rules, and applicable Commission Orders. No major issues were observed during the reclamation inspection. However, Meadowlark makes the following recommendations to manage, maintain, and prevent future issues at the site:

Potential Issues	Recommendations
Areas with dense, extensive cover of annual weeds, primarily through hayland and cropland.	Monitor and manage these areas to promote the establishment of hay and crops. Consult with landowner to determine course of action. Spraying or periodic mowing in the early growing season may be necessary to decrease the seed set of the annual weeds.
Additional potential issues	Refer to project Storm Water Pollution Prevention Plan (SWPPP) for additional post-construction recommendations.

5 Signatures

The services performed by Barr staff, and its subcontractor Meadowlark, for this project have been conducted in a manner consistent with the technical skill and degree of care exercised by professionals currently practicing in this discipline under similar time and budget constraints. Findings and recommendations represent our professional judgement and are based on available information and accepted practices. No warranty is implied or expressed beyond this.



Andrew Unbehaun, Project Manager

9/2/2022

Date



Sara Simmers, Inspector

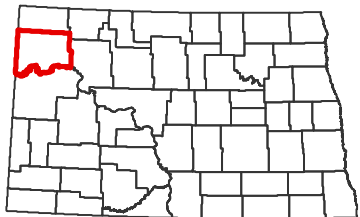
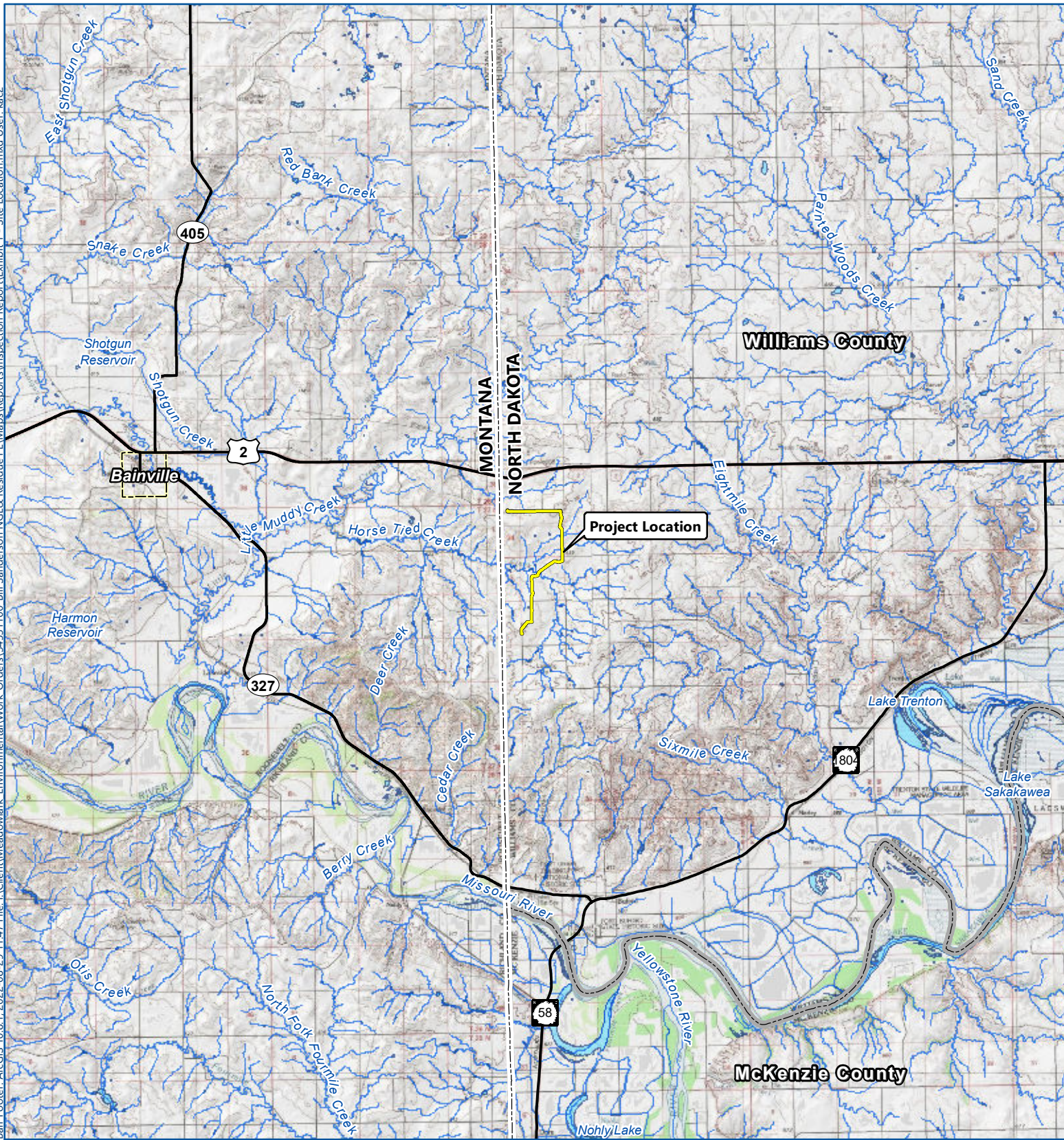
9/2/2022

Date







Appendices

Appendix A

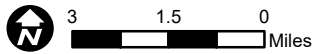
Exhibits



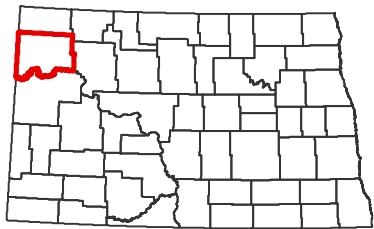
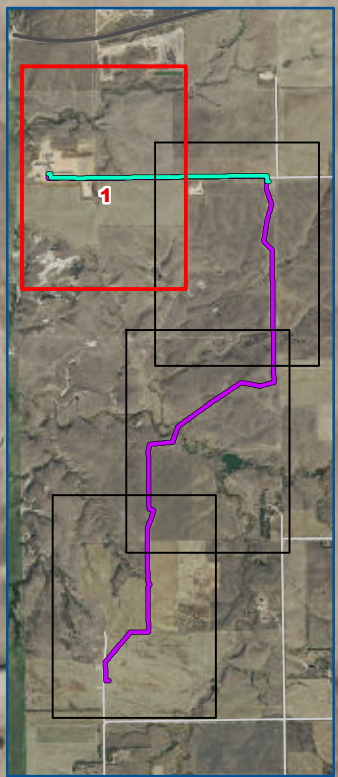
Williams County, North Dakota

-  Project Boundary
-  Municipality
-  County Boundary
-  State Boundary
-  Stream (USGS NHD)
-  Waterbody (USGS NHD)

Drawn by: KWild (Barr Engineering Co.)
 Date: 8/29/2022
 Photos: SSimmers (Meadowlark)
 Field Date: 8/12/2022
 Imagery: Esri USA Topo Maps

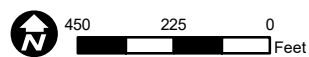


SITE LOCATION MAP
August 2022



Williams County, North Dakota

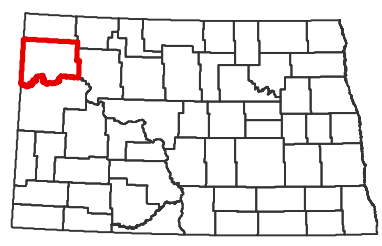
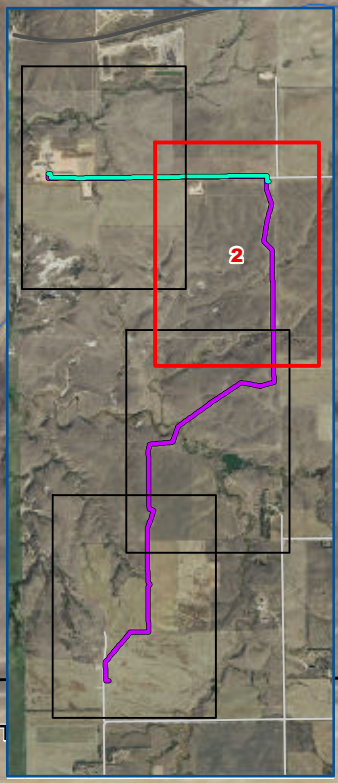
- 8-in NGL Pipeline
- 20-in Residue Pipeline
- Section Boundary
- Stream (USGS NHD)
- Waterbody (USGS NHD)
- Photograph Location



Drawn by: KWild (Barr Engineering Co.)
Date: 8/29/2022
Photos: SSimmers (Meadowlark)
Field Dates: 8/12/2022
Background Imagery: USDA-FSA NAIP (2021)

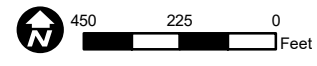
PHOTO LOCATIONS August 2022

Exhibit 2.1



Williams County, North Dakota

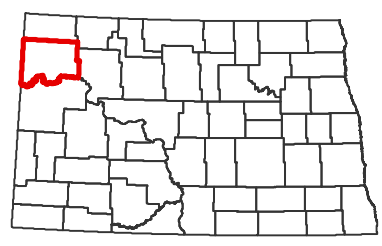
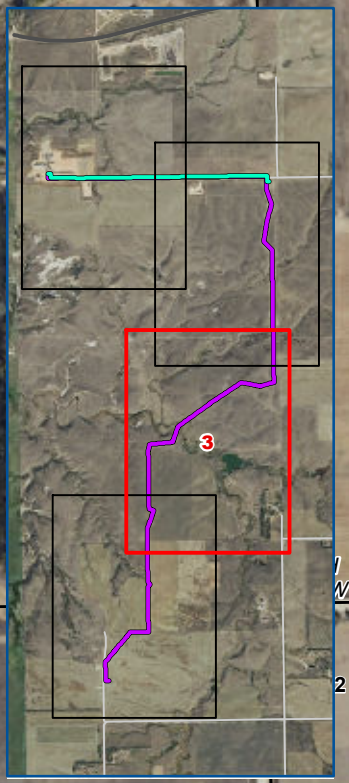
- 8-in NGL Pipeline
- 20-in Residue Pipeline
- Section Boundary
- ~ Stream (USGS NHD)
- Waterbody (USGS NHD)
- ★ Photograph Location



Drawn by: KWild (Barr Engineering Co.)
 Date: 8/29/2022
 Photos: SSimmers (Meadowlark)
 Field Dates: 8/12/2022
 Background Imagery: USDA-FSA NAIP (2021)

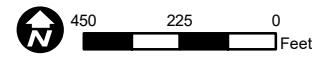
PHOTO LOCATIONS
August 2022

Exhibit 2.2



Williams County, North Dakota

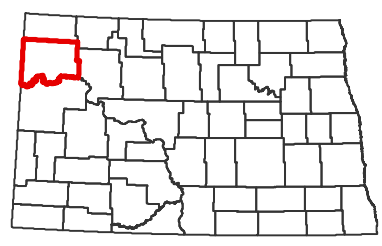
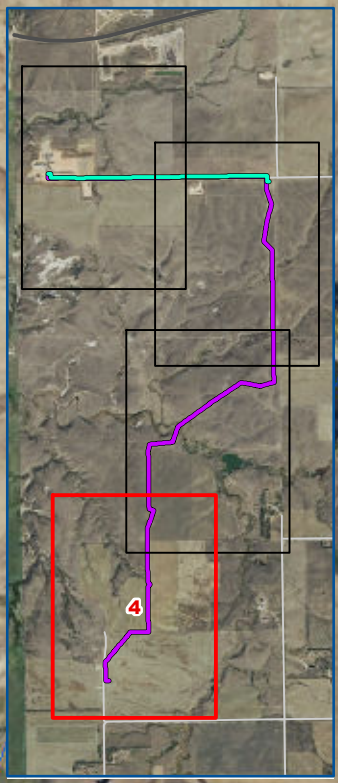
- 8-in NGL Pipeline
- 20-in Residue Pipeline
- Section Boundary
- ~ Stream (USGS NHD)
- Waterbody (USGS NHD)
- ★ Photograph Location



Drawn by: KWild (Barr Engineering Co.)
 Date: 8/29/2022
 Photos: SSimmers (Meadowlark)
 Field Dates: 8/12/2022
 Background Imagery: USDA-FSA NAIP (2021)

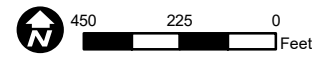
PHOTO LOCATIONS
August 2022

Exhibit 2.3



Williams County, North Dakota

- 8-in NGL Pipeline
- 20-in Residue Pipeline
- Section Boundary
- ~ Stream (USGS NHD)
- Waterbody (USGS NHD)
- ★ Photograph Location



Drawn by: KWild (Barr Engineering Co.)
 Date: 8/29/2022
 Photos: SSimmers (Meadowlark)
 Field Dates: 8/12/2022
 Background Imagery: USDA-FSA NAIP (2021)

PHOTO LOCATIONS
August 2022

Exhibit 2.4

Appendix B

Photo Log

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 1

Direction: East

Description: West end of shared route for both the 8-in NGL and 20-in Residue lines. (Red marker in foreground is another line.) The pipelines were bored across a drainage past the edge of the gravel-surfaced area.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.126047

Longitude: -104.037385



Photo #: 2

Direction: East

Description: Markers on horizon for the two pipelines at the bore exit area. Dense stand of reclaimed grasses.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.125879

Longitude: -104.035181

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 3

Direction: East

Description: Shared route continues east, showing dense stand of reclaimed grasses, with over 80% cover of intermediate and slender wheatgrass. Temporary fence installed along north edge of reclaim; to be removed for fall grazing.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.125874

Longitude: -104.034501



Photo #: 4

Direction: West

Description: View back toward the gas plant along shared route of 8-in NGL and 10-in Residue pipelines, on the east side of another drainage crossed using HDD.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.125878

Longitude: -104.031507

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 5

Direction: West

Description: Shared route through hayland. This portion of the route had approximately 50% cover of the planted grasses and about 50% cover of annual weeds (kochia, Russian thistle).

Observer: Simmers

Date: 8/12/2022

Latitude: 48.125922

Longitude: -104.018400



Photo #: 6

Direction: South

Description: Point where routes turn south. Both were bored under road. The 8-in NGL pipeline ends here, where it ties into the Oneok station visible on the left.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.126070

Longitude: -104.015249

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 7

Direction: South

Description: South side of road showing bore exit workspace area on the south side of road. The area was weedy and had high use by cattle, as it is also in the corner of a pasture. The 20-in residue pipeline route continues south.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.125762

Longitude: -104.015290



Photo #: 8

Direction: South

Description: The 20-in Residue line continues south across native rangeland. The reclamation was in good condition, with over 75% cover of western wheatgrass, slender wheatgrass, and green needlegrass.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.123775

Longitude: -104.014809

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 9

Direction: South

Description:
Continuation of route south across native rangeland (rightmost area within corridor, to the left of the overhead transmission line).

Observer: Simmers

Date: 8/12/2022

Latitude: 48.119534

Longitude: -104.014822



Photo #: 10

Direction: South

Description: Steep upland drainage ravine crossed by HDD bore. Erosive slopes with natural areas of bare ground and minimal topsoil were avoided. Reclamation is in good condition on either side of the bore.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.114452

Longitude: -104.014851

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 11

Direction:
East/Southeast

Description: Area where route angles southwest across rolling hills. The hilltops had areas of bare soil, which matched with adjacent native hilltops with bare soils. The reclaimed grass stand has adequate cover.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.109533

Longitude: -104.018379



Photo #: 12

Direction: Southwest

Description: Route runs at angle to a large HDD crossing of Horse Tied Creek, visible as line of dark trees in distance. Reclamation is in good condition here, with a few small areas of bare soils.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.109533

Longitude: -104.018379

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 13

Direction: Southwest

Description: View of HDD bore crossing of Horse Tied Creek. Workspace of 20-in Residue Line is in the foreground on the right. The restored route on the left is a Oneok line, which had a workspace closer to the creek.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.107949

Longitude: -104.022086



Photo #: 14

Direction: Northeast

Description: View of route across hayland which had already been cut at the time of the inspection. Reclaimed area was approximately 50% seeded grass and 50% annual weeds.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.096960

Longitude: -104.030109

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 15

Direction: North

Description: Route through cropland, planted in safflower. The pipeline route was dominated by annual weeds.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.092364

Longitude: -104.030192



Photo #: 16

Direction: North

Description: Route through cropland, planted in safflower. The pipeline route was dominated by annual weeds, though the crop was present throughout the annual weed cover.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.089577

Longitude: -104.030051

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 17

Direction: Northeast

Description: Route through cropland of soybeans. Difference between pipeline route and adjacent cropland is minimal. A few bare patches are present within parallel pipeline routes.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.088081

Longitude: -104.034486



Photo #: 18

Direction: North

Description: Route through cropland of soybeans, along west edge of field. The crop growth within the pipeline ROW is slightly shorter compared to the adjacent cropland.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.085689

Longitude: -104.035363

On-Site Photographs

OE2 8" NGL & 20" Residue Gas Pipelines



Photo #: 19

Direction: East

Description: South end of 20-in Residue Pipeline at the delivery point, where it connects to a Northern border/TransCanada pipeline at the aboveground valve visible in the fenced area.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.085689

Longitude: -104.035363