

# Sacagawea Pipeline Co.

## Reclamation and Revegetation Inspection Report Palermo to Enbridge Crude Oil Pipeline

Case No. PU-15-670

Contract No. PU-749-16-EE

*December 17, 2018*

Prepared for:

North Dakota Public Service Commission  
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## Introduction

The North Dakota Public Service Commission retained KLJ to complete a reclamation and revegetation inspection report of the Sacagawea Pipeline, LLC crude oil line from Palermo to Enbridge in Mountrail County, ND. The Project includes a 12-inch diameter underground pipeline with a total length of approximately 8 miles. The purpose of the inspection was to ensure that the areas effected by construction activities have been revegetated and restored to previous conditions.

## Regulatory Purpose and Scope of Work

The North Dakota Energy Conversion and Transmission Facility Act authorizes the State to determine that the location, construction, and operation of energy transmission facilities that will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. The North Dakota Public Service Commission has contracted KLJ Engineering for inspection services on Case No. PU-15-670.

KLJ is to document the reclamation and revegetation of the Project. The process includes inspection of the reclamation of subsoil and topsoil, as well as the seeding, and the status of revegetation.

## Methods

Reclamation and revegetation of the project was inspected and documented on July 19, 2018. A drone was utilized to collect aerial photography along the pipeline, highlighting areas of both good revegetation and conformity to surroundings, as well as areas of concern. The equipment used during inspection includes a DJI Phantom 4 integrated GPS and 12-megapixel camera. (Appendix B, Pictures)



## Inspection Observations and Findings

At the time of inspection in July 2018, vegetation had been well established throughout the project. Work in crop land areas have been well reclaimed and showing evidence of growth consistent with adjacent areas. In grassland sections, much of the vegetation has been well established, and blending well into existing conditions, however, some areas are showing signs of thinner coverage as compared to surrounding vegetation.

Location 1, page 10: Conditions of reclaimed area consistent with surrounding vegetation.

Location 4, page 11: Vegetation well blended into surroundings.

Location 7, page 13: Example of differing types of grassland blending well into reclaimed area of pipeline.

Location 14, page 16: Vegetation established to match adjacent grassland, some thin areas seen are consistent with surrounding conditions.

Location 19, page 19: Reclaimed area in cropland, no issues present.

Location 24, page 21: Vegetation established and blending well against adjacent grassland.

Location 36, page 27: Location of reclamation visible, but vegetation and growth present is consistent with adjacent grassland. Areas as this are presumed to be less detectable in future growing seasons.

Location 43, page 30: Minimal evidence of reclamation visible in farm land.

## Areas of Concern

Location 16, page 17: In this area, vegetation has been well established, but not consistent with the surrounding grasslands. We feel this is likely due to the time in which the area was seeded. However, we would expect vegetation to closer match the surrounding conditions in future growing seasons.

Location 22, page 20: Areas of thin growth and vegetation not closely matching the surrounding conditions. Near the middle of the picture, evidence can be seen of the existing vegetation growing into the reclaimed area. This is another area of concern that would be expected to improve with time.



## Recommendations for Resolution

Based on our observations, we feel the reclamation efforts have been successful throughout the project. Evidence can be seen in several locations throughout the project where the native grassland is beginning to blend into the reclaimed area. We expect areas of concern will continue to improve with time as seen elsewhere in along the pipeline.

## Determination of Reclamation

Overall, the Project appeared to have been reclaimed with minimal impacts to the surrounding environments. Much of the grassland has become well established with no signs of erosion or unvegetated areas. Aside from a couple exceptions listed above, we feel the vegetation is in good condition throughout the project and see no reason that conditions will not continue to improve with time. We believe no further actions would be required at this time.



## Signatures

The services performed by KLJ staff for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgement and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Lead Project Manager, Paul Lee

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Paul Lee, PLS, Project Manager

2/12/2019

\_\_\_\_\_  
Date



# Appendix A: Map of Project and Observation Points

Sacagawea Pipeline Company, LLC  
Route Permit Application  
Palermo to Enbridge Crude Oil Pipeline

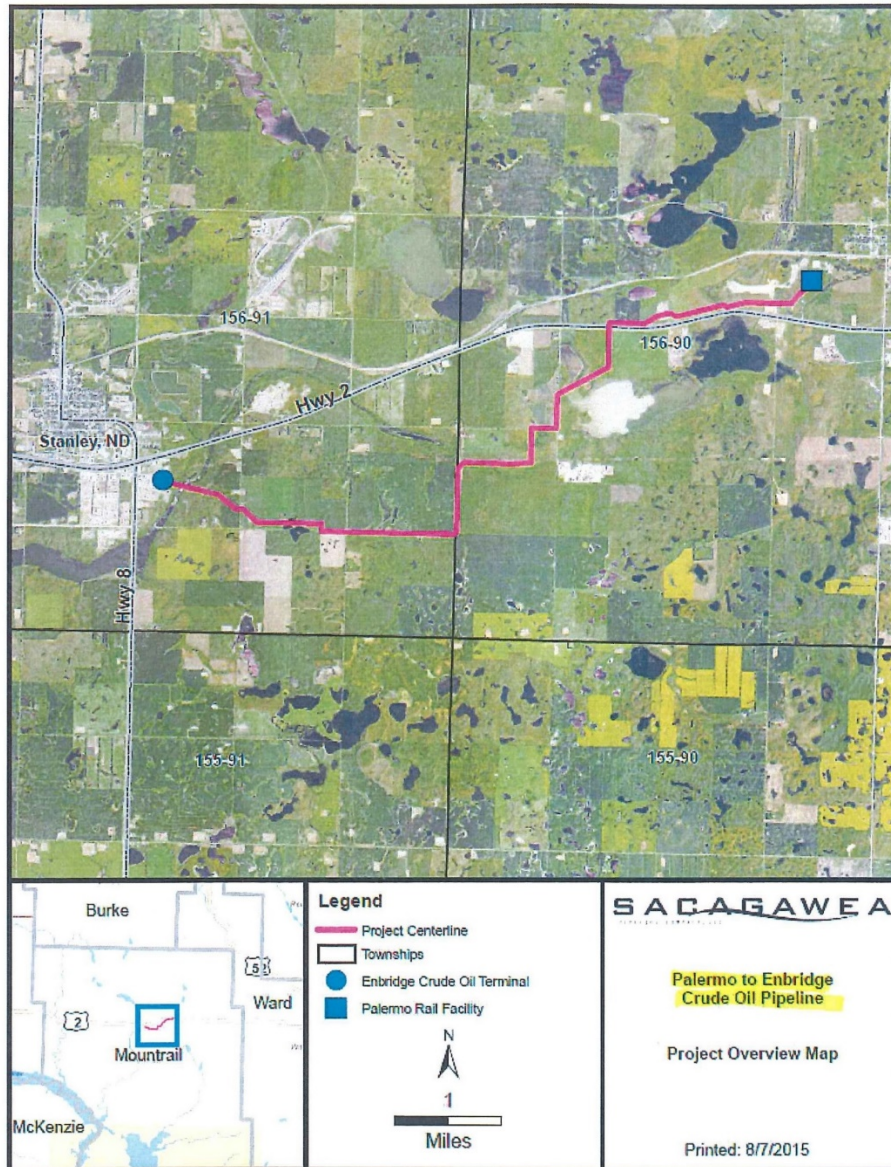
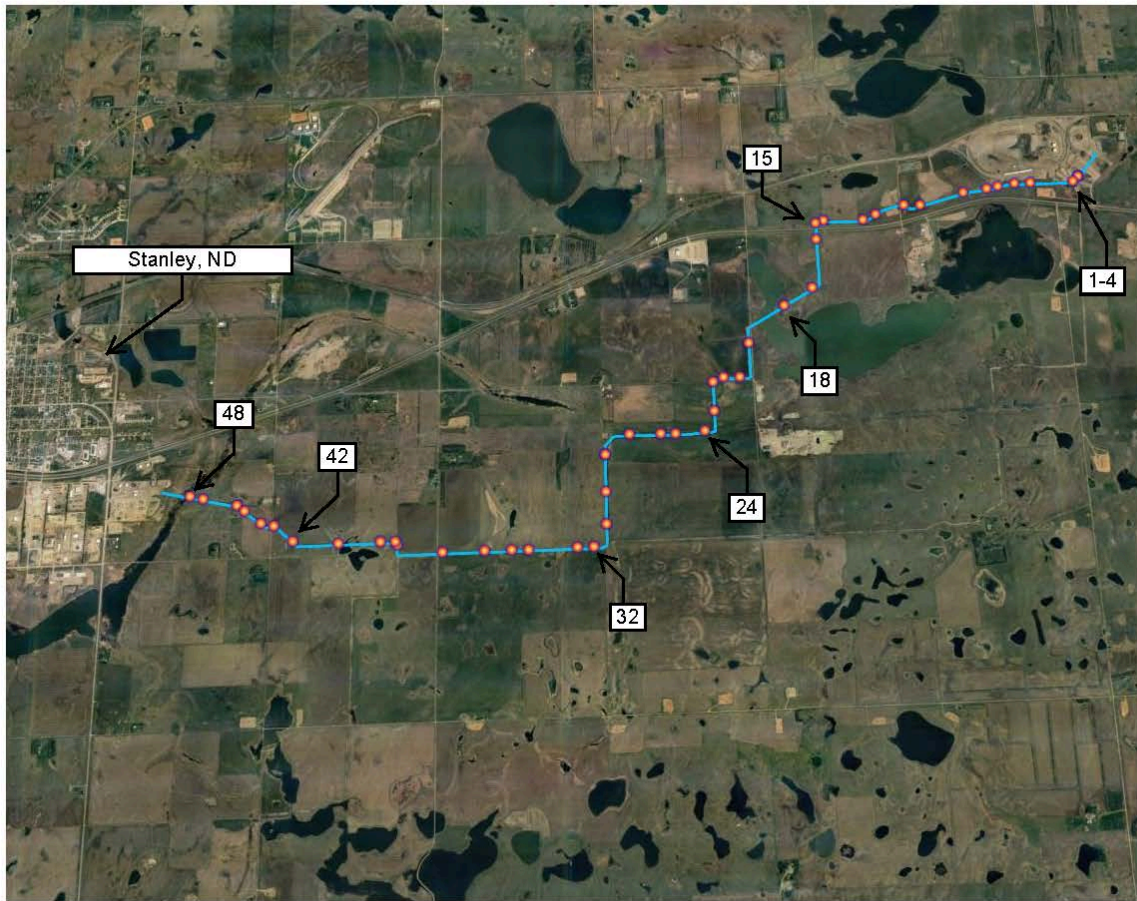
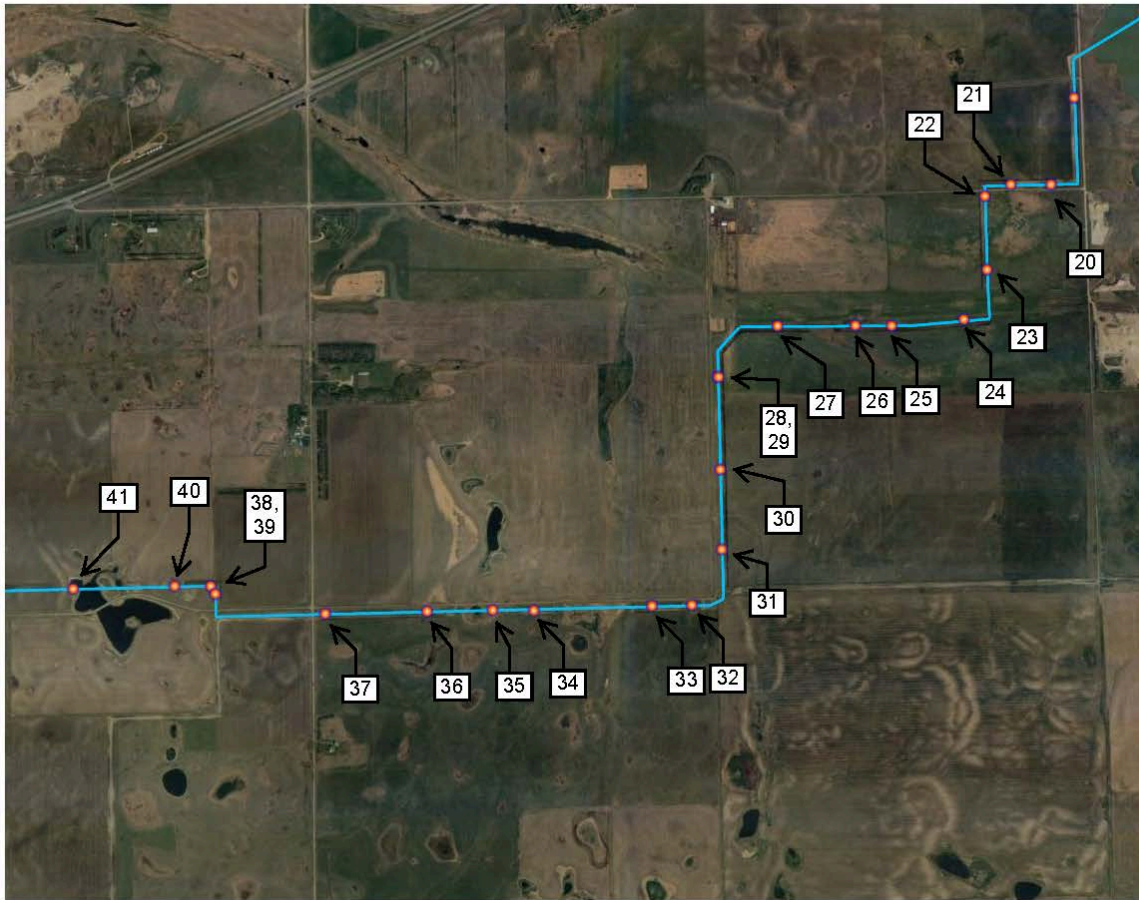


FIGURE 3.A.1 – General Project Location Map













## Appendix B: Photographs



Location 1 (48.331055, -102.242615)  
Vegetation matching surrounding conditions



Location 2 (48.331055, -102.242615)



Location 3 (48.331062, -102.242607)  
Vegetation well established to previous conditions



Location 4 (48.330578, -102.243401)  
Pipeline scar visible, but blending well into adjacent conditions



Location 5 (48.330578, -102.24939)  
Vegetation established, some thin areas present



Location 6 (48.330563, -102.25161)



Location 7 (48.330334, -102.253983)



Location 8 (48.330128, -102.255562)  
Well established and matching existing conditions



Location 8 (48.330128, -102.255562)  
Consistency in vegetation similar to adjacent areas



Location 10 (48.32872, -102.265045)  
Well established and matching existing conditions



Location 11 (48.328789, -102.267319)  
Scar blending well with existing vegetation



Location 12 (48.32795, -102.271362)  
Vegetation thin, but growing to match adjacent conditions



Location 13 (48.327457, -102.27317)



Location 14 (48.327526, -102.278656)  
Well blended into native vegetation



Location 15 (48.32729, -102.279793)



Location 16 (48.325684, -102.279823)  
Recent reclamation, not yet blended into adjacent vegetation



Location 17 (48.320995, -102.280792)



Location 18 (48.319378, -102.284782)  
Bore location



Location 19 (48.316025, -102.289864)  
Cropland, no issues present



Location 20 (48.312859, -102.291298)  
Vegetation well established to match adjacent conditions



Location 21 (48.312893, -102.293488)

Thin vegetation, but beginning to blend well with adjacent conditions



Location 22 (48.312489, -102.294922)

Believed to be more recent reclamation work here than other areas



Location 23 (48.309803, -102.294937)



Location 24 (48.308014, -102.29628)  
Well blended into adjacent vegetation



Location 25 (48.307846, -102.300209)



Location 26 (48.307888, -102.302177)



Location 27 (48.307938, -102.306343)  
Vegetation established to match adjacent conditions



Location 28 (48.306168, -102.309608)  
Vegetation established to match adjacent conditions



Location 29 (48.306179, -102.309654)  
Minimal disturbance in farm land



Location 30 (48.30283, -102.309647)  
Area of low growth in farm land



Location 31 (48.299965, -102.309669)



Location 32 (48.298004, -102.311348)  
Native species beginning to become established at pipeline scar



Location 33 (48.298004, -102.313492)



Location 34 (48.297939, -102.319855)



Location 35 (48.297985, -102.32206)  
Well blended to surrounding conditions



Location 36 (48.297996, -102.325592)



Location 37 (48.297997, -102.33107)



Location 38 (48.298798, -102.336975)  
Minimal disturbance in farm land



Location 39 (48.299076, -102.337219)



Location 40 (48.299107, -102.339157)



Location 41 (48.299091, -102.344627)  
Minimal disturbance to farmland



Location 42 (48.299423, -102.350578)



Location 43 (48.300842, -102.353127)



Location 44 (48.301102, -102.354843)  
Established vegetation closely matching adjacent conditions



Location 45 (48.302254, -102.357048)



Location 46 (48.302773, -102.358078)



Location 47 (48.303452, -102.362556)



Location 48 (48.30373, -102.364304)



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