Sacagawea Pipeline Co.

Keene to Johnsons Corner to (DAPL) Dakota Access Pipeline 16” Crude Oil Pipeline Project

PU-16-140
KLJ#1216124

November 4, 2016

Prepared for:

North Dakota Public Service Commission
600 East Boulevard Ave
Bismarck, ND 58505-0480

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APPENDICES

EXECUTIVE SUMMARY

The North Dakota Public Service Commission, (PSC**) File Case Number PU-16-140,** retained KLJ to complete topsoil inspections during construction of the 16" crude oil line known as Johnsons Corner to (DAPL) Dakota Access Pipeline Connector (Project) in McKenzie County, North Dakota (ND), constructed by Sacagawea Pipeline, LLC. The purpose of the inspections was to ensure the project was constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project, which includes a requirement that topsoil must be segregated from subsoil during installations of the pipeline.

Construction of the 3.5-mile pipeline project began 15 August, 2016. During this time, contractor started stripping topsoil. KLJ reviewed project documents to become familiar with the Project and PSC Orders for the Project. For second inspection, KLJ visually inspected the construction right of way on 22 August, 2016, observing contractor conducting topsoil and subsoil removal along with the segregation of soil type on Right of Way located north of Highway 73. For third inspection, KLJ visually inspected the Project right of way area on 30 August, 2016. These site visit inspections were conducted to observe the completion of the topsoil and subsoil removal and segregation done by the contractor. Overall soil removal and storage processes appeared to be done properly and the work was satisfactory. The project was well maintained and appeared to have been constructed as planned with numerous efforts to minimize impacts. There were minor noteworthy issues that may need to be resolved for the project to be considered complete and in full compliance which include 1) written verification of some items in particular documentation of associated GIS files, and 2) topsoil and subsoil stored piles along edge of right of way could be too close together and have touched. 3) Vegetation established throughout the project due to no seeding being done this fall. Follow up actions taken by Plains Terminals. North Dakota LLC to address these issues that can be confirmed in writing or with photos that will not require a subsequent site visit.

Recommended Action Steps:

Issue 1) – Written verification-Review internally, clarify, then request if needed. Several items may need written verification, if so, the PSC should review items, since some may not be needed or maybe best verified in some other way.

Issue 2) - Soil types along edge of Right of Way were moved further apart so touching was no longer an issue.

Issue 3) – Written documentation, requested if needed, on satisfactory establishments of vegetation throughout the project, as at time of inspection, seeding had not been completed. Soil amendments or reseeding maybe necessary if former land uses cannot be attained in the next couple years.

BACKGROUND AND SCOPE

Introduction

The Sacagawea Pipeline Company, LLC (Project), also known as the "Johnsons Corner to (DAPL) Dakota Access Pipeline Connector Project" connects the proposed pipeline that will originate at the Plains Johnson's Corner Terminal Service Site owned by Phillips 66, in McKenzie County, and extends to the northwest to terminate at the Dakota Access Corner Terminal Tie-in Facility. **(Appendix A, Sheet 1)**. The Project will be constructed and operated by Sacagawea Pipeline Company, LLC. The Project includes a 16-inch diameter underground crude oil pipeline with a total length of approximately 3.5 miles. 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-16-140 on 28 March, 2016, granting a Certificate of Corridor Compatibility No. 191 and Route Permit No. 203, too Plains Terminals North Dakota LLC, for the Johnson's Corner to (DAPL) Dakota Access Pipeline Connector Project, (Project).

Regulatory Purpose and Scope of Work

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorized the Public Service Commission to determine 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. Construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Orders.

The North Dakota PSC retained KLJ to complete a construction inspection, and specifically a topsoil inspection, of the Project. The inspection process included a review of the Application for Corridor Compatibility and Route Permit, Order, and other applicable documents. PSC Order #11 states: "Company understands and agrees that the pipeline will be buried to a minimum depth from the ground surface to the top of the pipe of 48 inches in range land, 48 inches for cultivated land, 48 inches at the bottom of the ditch for road crossings, and 72 inches across undeveloped section lines." PSC Order #12 for the Project states: "Company understands and agrees that all topsoil, up to 12 inches, or topsoil to the depth of cultivation, whichever is greater, over and along trench areas where cuts will be made, must be stripped and segregated from the subsoil. Any area on which excavated subsoil will be placed must also be stripped of topsoil. After backfilling is completed, any excess subsoil must be placed over the excavation area, blending the grade in existing topography. Topsoil must be replaced over areas from which it was stripped only after the subsoil is replaced."

KLJ's scope of work was to perform and document on-site inspections during the topsoil removal phase for the project, to verify that topsoil was properly removed and kept segregated from subsoil until replacement occurred, and verify that the pipeline has been installed with the depth of cover as required by the commissions orders.

The number of on-site inspections were to be based on KLJ's determination that equipment operators demonstrated proficiency concerning topsoil and subsoil removal and segregation in compliance with the Commission's Order. This report includes, but is not limited to, documentation of 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.

Background

During pipeline installation and excavation work in general, it is very important to separate the topsoil and subsoil. Topsoil has biological, physical and chemical properties that are critical to recovery of a site. Topsoil, also known as the A horizon, should be stripped to the correct depth according to natural variations in the depth of the top layer of soil. Distinguishing the horizon boundaries can be difficult as they vary in distinctiveness and topography. Most boundaries are zones of transitions rather than sharp lines of division. Boundary distinctiveness is the vertical distance over which one horizon transitions into another which shape of the contact between the horizons which can be smooth, wavy, irregular or broken.

Mixing subsoil in with the topsoil is usually detrimental to the reclamation and re-vegetation of a site. Subsoil material has lower organic matter content than topsoil, making it typically lighter in color. It may also have a different texture than the topsoil. The most visible impact of pipeline constructions on agricultural land is the mixing of organic and nutrient rich topsoil with less fertile, mineral subsoil, which can bring up toxic elements such as sodium that restricts plant growth.

FINDINGS OF SITE INSPECTION

Methods

Scott Hummel, KLJ Personnel, visited the Project site on 15 August 2016. The purpose of the visit contributed to the contractor's request to start removing topsoil within right of way. A representative from STI, inspector manager, Marc Westbrook accompanied Scott Hummel, KLJ, during the topsoil inspection site visit. Wyatt Construction, the contractor, Kevin Taylor, superintendent, and Chad Williams, project foreman, were present during KLJ's site visit, but the start of stripping topsoil off right of way did not begin due to equipment mobilization was still under way.

The site was inspected again by Scott Hummel, KLJ Personnel, on 22 August 2016. Cole David, inspector manager for STI, met with KLJ representative to visually inspect topsoil removal within Right of Way. The contractor, Wyatt Construction, along with the superintendent and project foreman were also in attendance during inspection. The inspection was done by driving to access points and walking or driving on project Right of Way. The inspection began at Station 0+00, located on the north side of Highway 73, McKenzie County, located in SE¼ of Section 13. It was observed on the easement Right of Way, that the stripping of top soil was complete across Right of Way north of Highway 73. Dozer cats and graders were used to clear topsoil within Right of Way. After the removal of vegetation, the operators stayed well within the Right of Way during the topsoil removal phase. It was noted that as the topsoil was removed, it was piled along edge of Right of Way and kept segregated from the subsoil. It was noted from inspection, that the depth of topsoil removed was mostly around 6-9 inches deep. Contractor started laying and splicing pipe along the north route on Right of Way. Bore work under Highway 73 was being setup by the contractor. Digital photographs were taken from Nikon Power Shot COOLPIX 3.6X, 14 megapixels, showing topsoil project infrastructure and documenting areas **(Appendix C, 1st Set of Photos #1-#20)** Start of project, begun at Station 0+00 beginning point, which is located on north side of Highway 73.**(Appendix A, and Field Observation Points - Appendix D)**.

Arnie Siverson, KLJ lead inspector, visited the Project site on 30 August 2016, for second inspection. The purpose of the second inspection was to visualize the completed topsoil removal within right of way, in accordance with the Commission's Selection Criteria. The second inspection begun at station 0+00 located on the north side of Highway 73 in McKenzie County. No pipeline contractors or inspectors accompanied KLJ during topsoil inspection. However, met with Cole David, STI inspector, after inspection to review some concerns. Most areas of topsoil deposited along right of way edge, appeared properly removed, piled and kept segregated from subsoil within right of way. However, some locations looked as if both top and sub-soils were mixed and piled to close together, as noted by photos taken during inspection. Digital photographs (Nikon Power Shot COOLPIX 3.6X, 14 megapixels) were taken showing typical project infrastructure and documenting problem areas. **(Appendix C, 2nd Set of Photos #1 thru #28)**. Geographic coordinated were recorded at observation points or potential problem areas using a handheld Global Positioning System (GPS) (Garmin GPSMAP Oregon 450; <10m accuracy; NAD83 datum) **(Appendix A, and Field Observation Points - Appendix D)**.

On-Site Inspection Observations and Findings

Construction for the Project began 15 August 2016. At the time of inspection, by KLJ, topsoil removal procedures were discussed, with contractor. (**Appendix B, from inspection #1**). Equipment operators started by stripping the topsoil using a grader, which went to a depth of approximately 4 inches though out the pipeline right of way. After this procedure was completed, equipment operators, using two dozer cats started ripping the topsoil well within right of way easement, further down to the appropriate depth. This depth consisted averaging around 6 to 9 inches deep. **(Appendix A, Appendix B, Inspection #1 and 1st Set Photos taken 8-22-16, Appendix C**). The pipeline contractor employed a combination of dozers and graders depending on the equipment available, depth of topsoil, land use and procedure being used to remove topsoil.

The contractors/equipment operators seemed competent during the topsoil stripping operation. Contractors removed topsoil according to the color change in the soil rather than to fixed 12-inch depth throughout the pipeline right of way. This was appropriate for the site conditions, since topsoil thickness did not reach 12 inches in depth along most of right of way. Working with heavy equipment can be difficult to accurately strip topsoil. Some areas had very little topsoil left on the stripped right of way, while other areas had small amounts of subsoil scraped up with the topsoil. Overall the contractor has done a good job of separating the soil types, which consisted a minor volume of mixing both together.

The new right of way easement wasn't near any existing saline areas which may cause a potential problem with soil stripping. No alkaline/saline areas were observed along pipeline right of way topsoil inspection. If any of these areas had been found or noted, re-vegetation established growth may cause problems due to the natural high alkalinity of the soil types.

As required by contract requirements, the pipeline must be buried 48 inches deep in range land and 48 inches deep at the bottom of ditch for road crossings. The route application specified minimum of 4 feet soil cover. KLJ did visually confirm the depth of the pipeline, **(2nd Set of Photos taken 8-30-16, Photo #6, #15, #25, and #26, Appendix C).**

For the majority of the project, the topsoil pile was placed on the opposite side on right of way, from the subsoil pile, except where two-toning/side sloping and bore pit bell holes were located. Two-toning or side sloping refers to a construction technique where the uphill side of the construction side of the construction right of way provides a safe and level surface from which heavy equipment can operate. It usually requires extra workspace to accommodate the additional volumes of material generated by using this construction technique. A bell hole for bore pits is a widening of the trench over a given distance, to provide space for installing pipe tie-ins, valves, fittings, etc.; in this area more subsoil is removed creating a bell-shaped trench.

At locations along Right of Way, the subsoil pile was observed touching the topsoil piles placed along Right of Way edge. Contractor was notified about soil piles touching. Work was completed by separating topsoil and subsoil piles further apart, so no touching could occur. Most of the topsoil was noted to be piled on the opposite side of the Right of Way. The contractor was notified of any conditions and soil portion types that has to be separated and moved further apart, so no touching would occur. Two-toning areas appeared to be in good condition for topsoil segregation, trench spoil (subsoil) piles in the two-toning areas were observed by contractor along with KLJ inspection, and noted soil types were not an issue environmentally.

ISSUES TO RESOLVE AND RECOMMENDATIONS

Project Specifications Needing Written Verification

Several components of the project were asserted in the application of construction and need to be verified in writing and filed with the PSC where applicable and necessary. KLJ does not consider any of these items to be critical for project compliance. However, KLJ suggests they are on file with the PSC to confirm compliance, and recommends the PSC request from Sacagawea Pipeline LLC necessary GIS files, documentation of their ten-year plan, and participated in North Dakota One-Call.

Topsoil/Subsoil Segregation Areas

When the topsoil inspections were conducted along right of way, minor issues were noted along right of way, lighter subsoil was deposited up against, or close too top soil, mixing both together. KLJ advises contractor/equipment operators need to take special care along right of way soil deposit areas, not to mix both topsoil and sub soils together. KLJ recommends that the PSC require monitoring and documentation from Sacagawea Pipeline LLC on these areas after reclamation has been completed and re-vegetation has been established.

Pipeline Depths

KLJ suggests that the PSC request written verification from Sacagawea Pipeline LLC that all as-built depths are indeed 48 inches deep for cultivated land, 48 inches deep at the bottom of the ditch for road crossings and 72 inches deep across undeveloped section lines.

Revegetation and Crop Production

When the post construction inspection of the project was conducted, no reseeding of the project had been completed. Contractor is going to wait until spring 2017 to do any reseeding of Right of Way. KLJ recommends the PSC request monitoring and documentation from contractor, to ensure the vegetation reseeding is established and has been completed throughout the project. This includes replanting trees and shrubs as noted from the mitigation plan.

CONCLUSIONS

Overall, the Project appeared to have been constructed as designed, with minimal impacts to the surrounding natural or human environment. The pipeline project was completed as stated in Sacagawea Pipeline LLC's application and in compliance with the PSC guidelines. The project site was well-maintained and in satisfactory condition. There were a few minor issues that included subsoil piles could have touched or mixed up against top soil locations along Right of Way. The contractor corrected these issues by moving sub and topsoil types further away to avoid soil contact. As required by contract requirements, the pipeline must be buried 48 inches deep in range land and 48 inches deep at bottom of ditch for road crossings. The route application specified a minimum of 4 feet soil cover. Contractor verified that the pipeline was buried to at least the specified depth and deeper where bored under roads. KLJ suggests that the PSC request written verification from Sacagawea Pipeline LLC that all as-built depths are indeed 48 inches deep for cultivated lands, 48 inches deep at bottom of the ditch for road crossings and 72 inches deep across undeveloped section lines.

All required Right of Way work, including topsoil removal, was done by the contractor, who stayed within Sacagawea Pipeline LLC's easement. All access on and off Right of Way was completed at access points specifically used on easement.

It does appear that there are several remaining items that Sacagawea Pipeline LLC needs to follow up with before the project can be considered in full compliance. Items noted as not complete are reseeding of the project had not been done, which will be done in spring of 2017 and installation of erosion control BMP's. KLJ recommends PSC to continually monitor and check with Sacagawea Pipeline LLC that the reclamation of reseeding Right of Way is complete and revegetation has been established and maintained in satisfactory condition after reclamation. It is suggested the PSC requests Sacagawea Pipeline LLC to submit all fully executed permits for their records as well as all other supporting documentation. It is also recommended the PSC require written verification that any settlement areas will be repaired and the remaining trees and shrubs will be replanted per the mitigation plan.

REFERENCES

North Dakota Public Service Commission (ND PSC). 2015. Online Case Search. Available from: http://www.psc.nd.gov/database/ company case list. php. Accessed November 2015-December 2015

Westbrook, Marc. 2016. STI Group, Sacagawea Pipeline Company, Chief Inspector. Personal Communication: Discussions during site visits on July 8, and August 30, 2016.

Williams, Chad. 2016. Boyd Construction, Proj. Manager. Personal Communication; Discussions during site visit on July 18, 2016.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service, U.S. Department of Agriculture Handbook.

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.

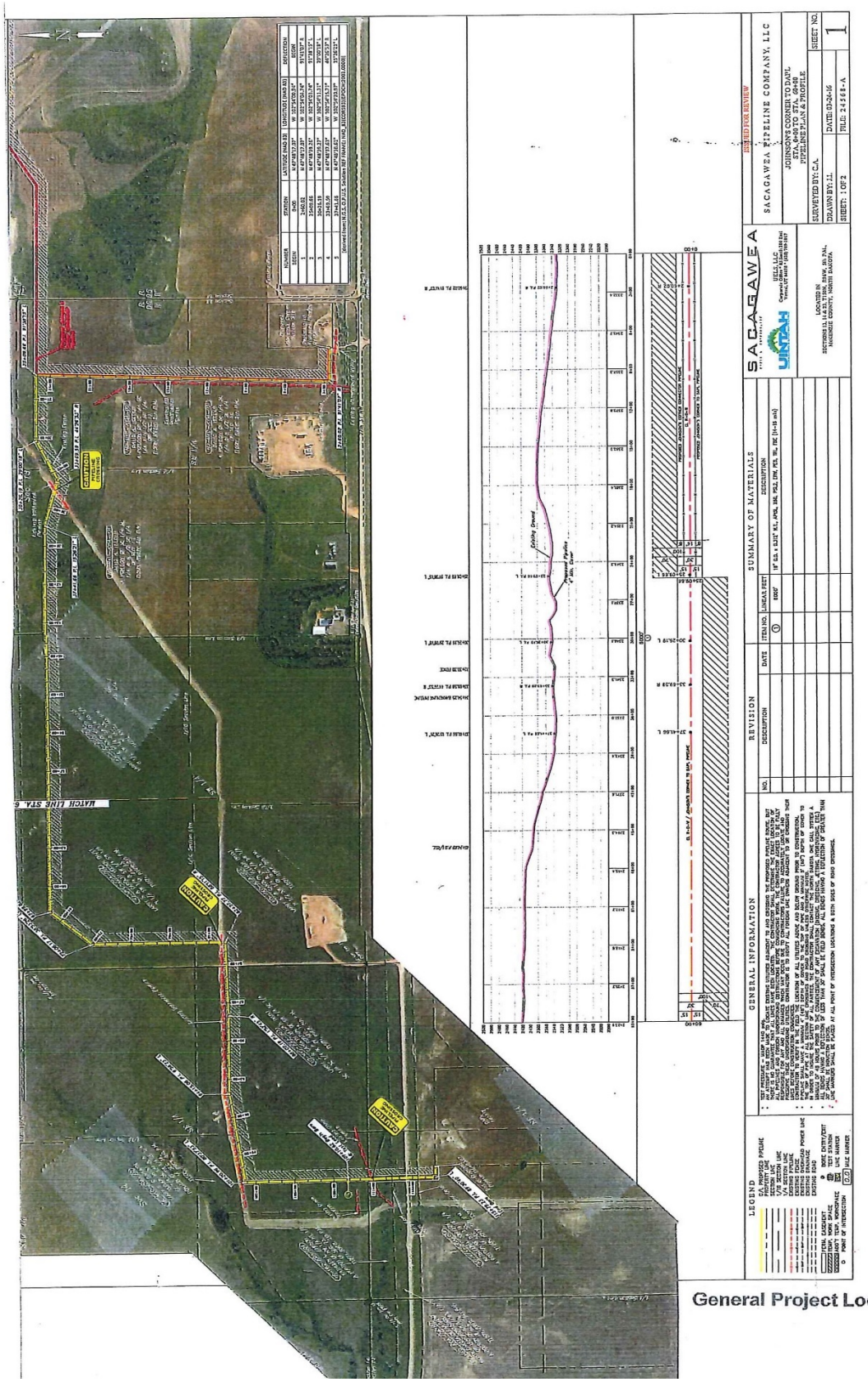
Lead Project Manager, Paul Lee, and Environmental Field Inspector, Arnie E. Siverson,

Paul Lee, PLS, Project Manager — Date: 12/19/16

Arnie E. Siverson, Field Inspector — Date: 12/19/16

APPENDIX A:

Maps of Project and Observation Points



General Project Location Map


Page 1 of 6
Keene to Johnson's Corner
Drone & Ground Photo Locations
November 4, 2016
KLJ
Drone Photos 11/1/2016
Ground Photos 8/22/2016
Ground Photos 8/30/2016
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Feet
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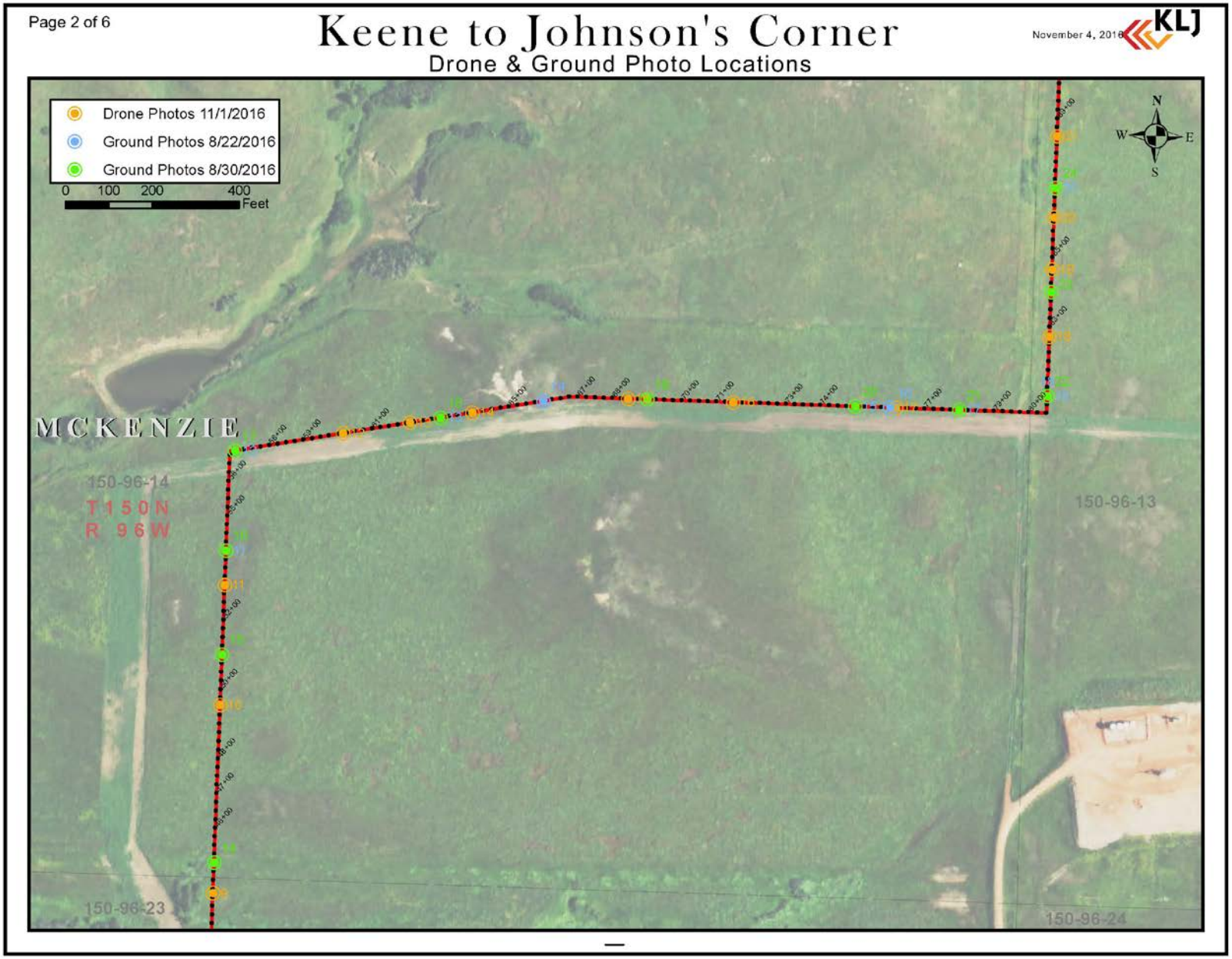
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Keene to Johnson's Corner
Drone & Ground Photo Locations
November 4, 2016
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Ground Photos 8/22/2016
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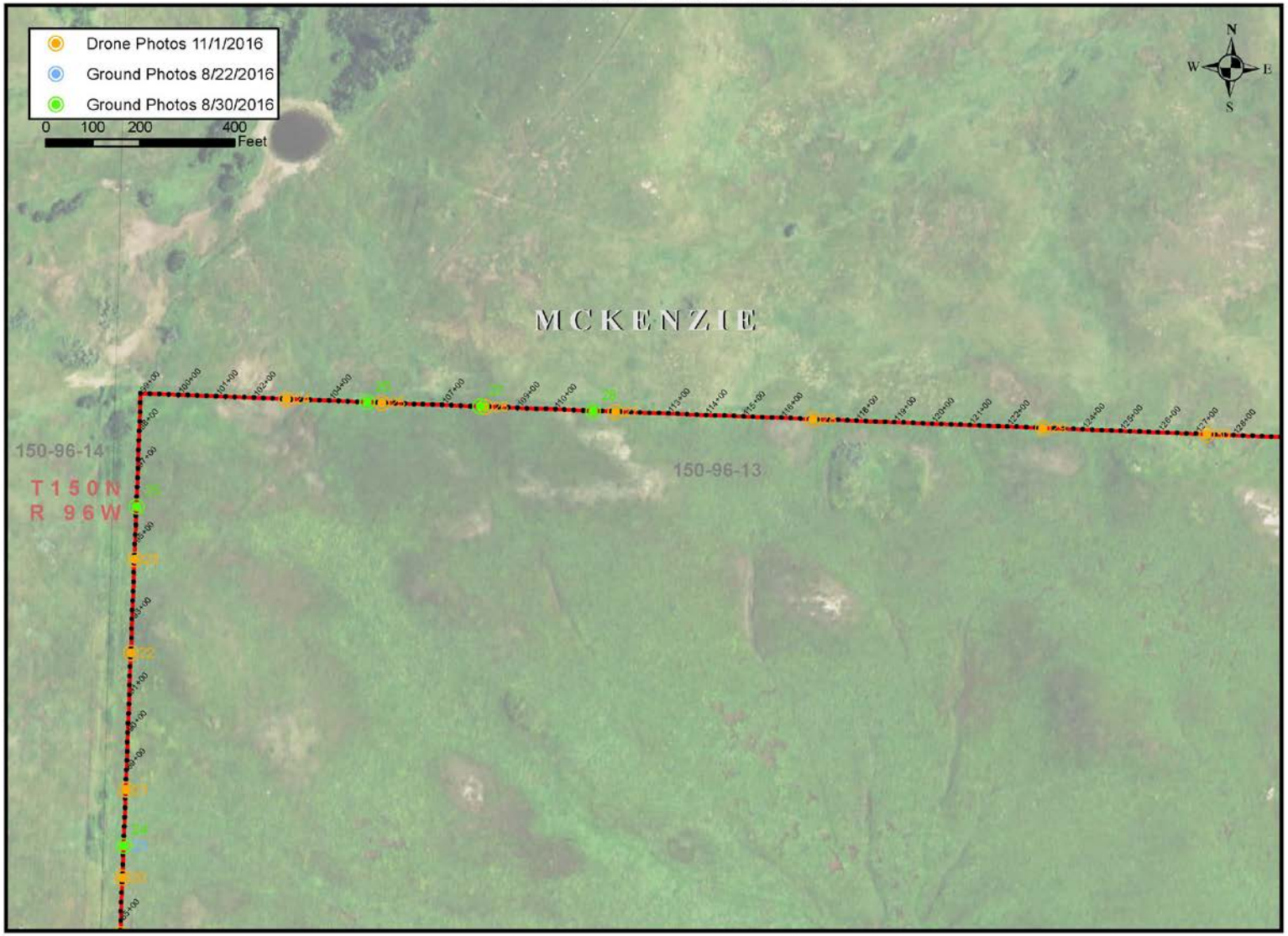
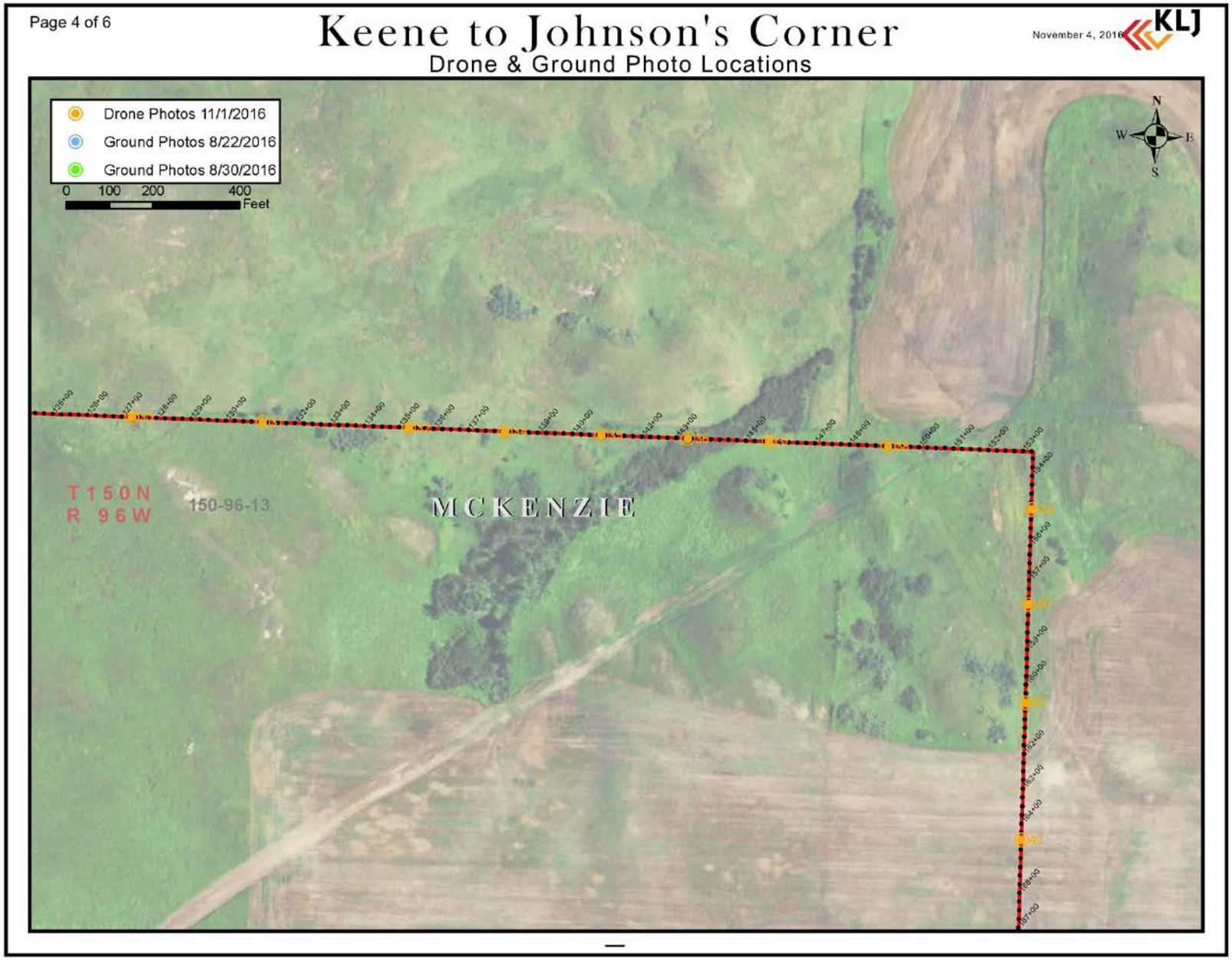
Keene to Johnson's Corner

Drone & Ground Photo Locations

November 4, 2016

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Drone Photos 11/1/2016
Ground Photos 8/22/2016
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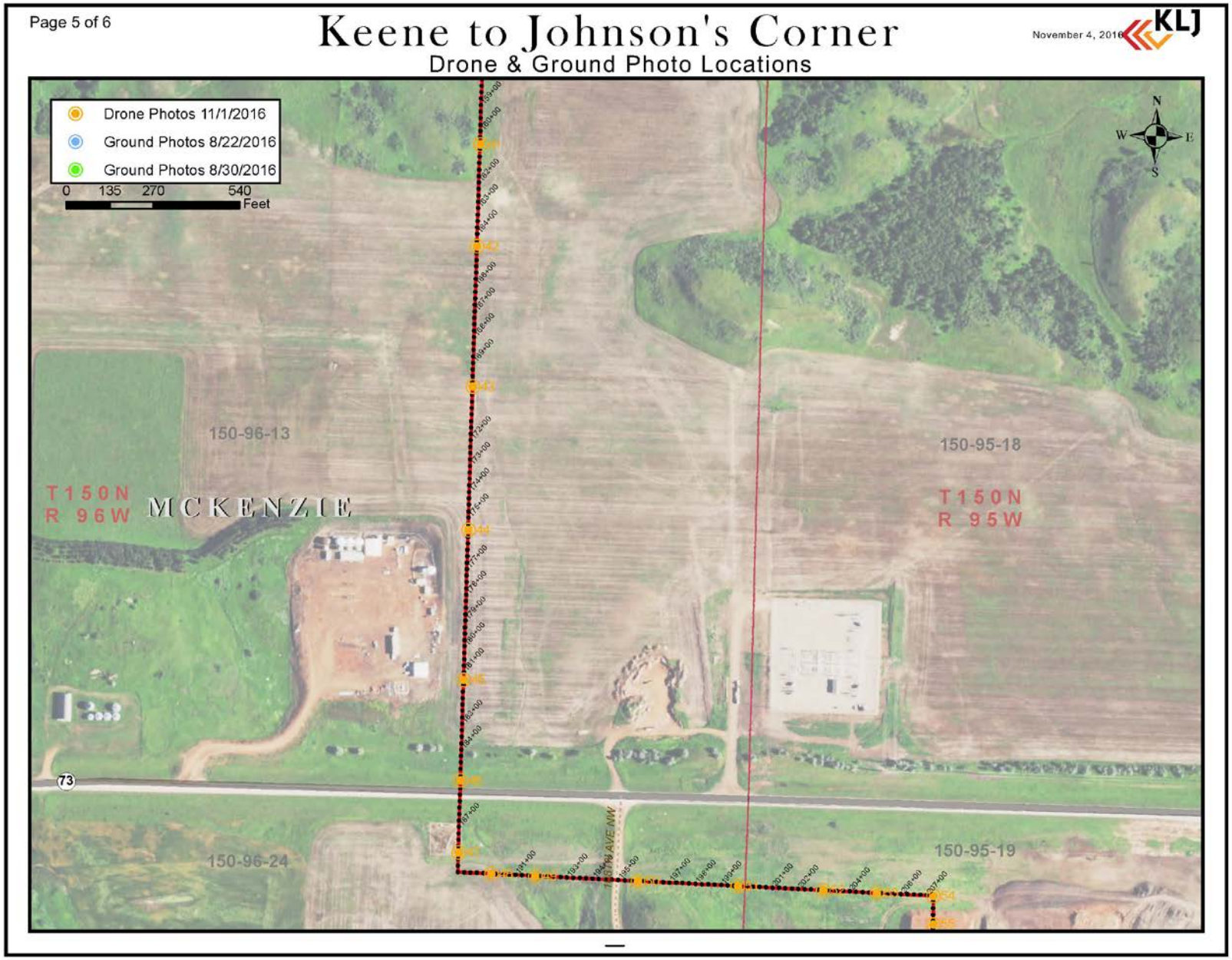
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November 4, 2016
KLJ
Drone Photos 11/1/2016
Ground Photos 8/22/2016
Ground Photos 8/30/2016
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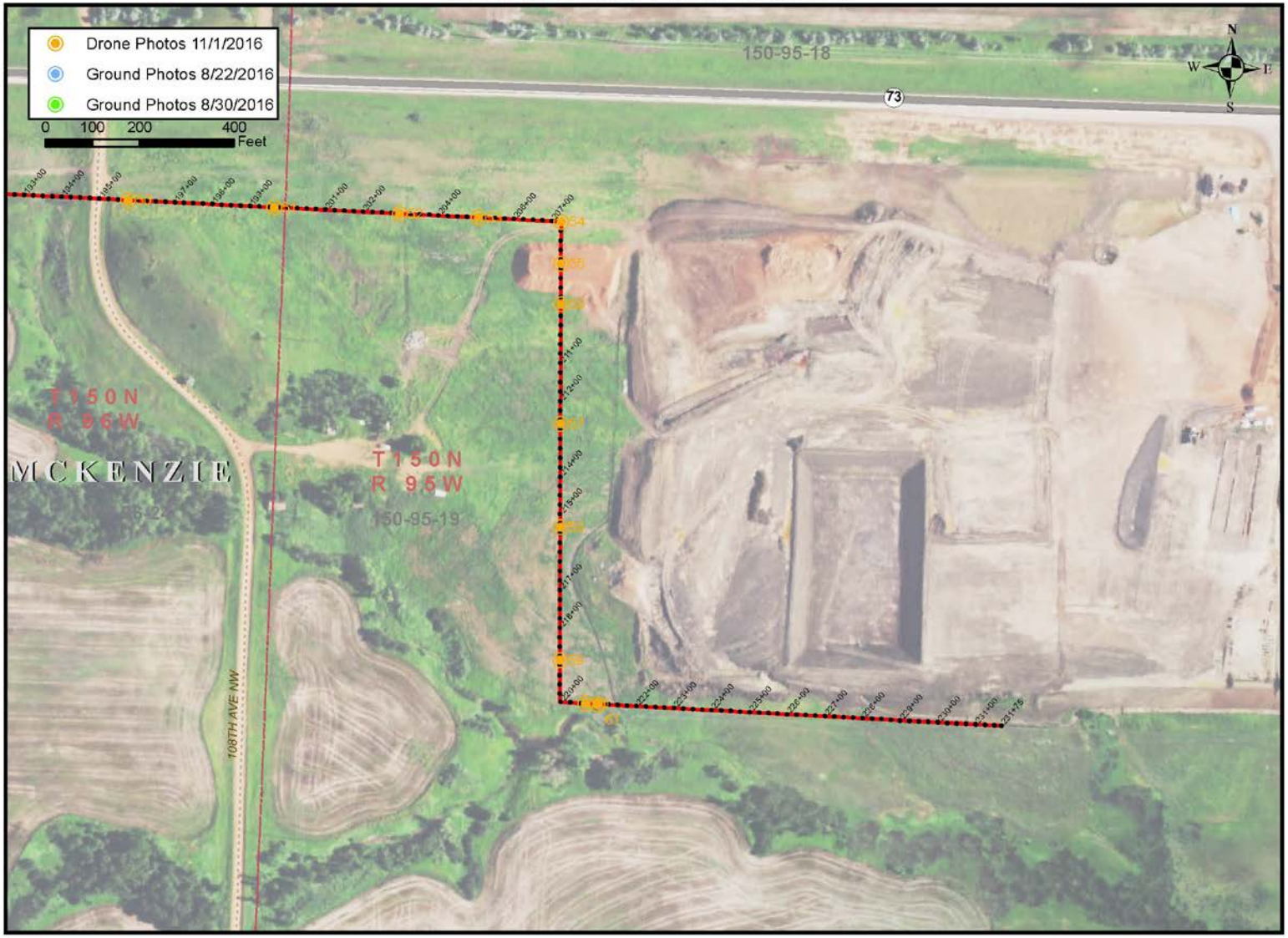
Keene to Johnson's Corner

November 4, 2016

Drone & Ground Photo Locations



APPENDIX B:

Inspection Reports 1 and 2

Daily Construction Progress Report

Client:	N. Dak. Public Service Commission	**Report Number:**	1
Project:	Johnson Corner to DAPL Connector	**Date:**	8/22/2016
KL&J Project Number:	1216124 & PSC Case No PU-16-140	**Pages:**	1 and 2

Project Contact Information

Title	Name	Company	Office Phone	Cell Phone
Client Contact	Julie Prescott	ND Public Service Commission	701-328-4188	N/A
KLJ Project Manager	Paul Lee	KLJ	701-250-3501	701-351-5551
Field Inspector	Arnie Siverson	KLJ	701-355-8786	701-425-5414
Chief Field Inspector	Marc Westbrook	STI Group	409-384-4278	409-382-8333
Contractor Superintendent	Kevin Taylor	Wyatt Construction	N/A	N/A

Daily Construction Conditions

Weather Conditions:	Partly Cloudy, with sun and warm, breezy 15MPH
Temp (High/Low):	High 76, Low 67
Tailgate Meeting (Yes/No):	No

Daily Construction Activity

Construction Activity	Footage Installed Today	Total % To Date	Comments/Description
ROW Clearing	N/A	100	
Topsoil Removal	N/A	90	
Level/Grade ROW	N/A	90	
HDD Boring	N/A	65	
Ditch	N/A	0	
Pipe Hauling/Stringing	N/A	70	
Bending	N/A	70	
Pipe Lower/Pull-in	N/A	0	
Backfill/Compaction	N/A	0	
Welding	N/A	50	
Coating	N/A	35	
Clean Up	N/A	0	
Topsoil Replace/Final grade	N/A	0	
Final Reclamation & Reseeding	N/A	0	

Installed Quantities

Material	Quantity Installed Today	Total Quantity To-Date	Comments/Description
Mainline Block Valve Setting	N/A	0	
Pig Launcher	N/A	0	
Pig Receiver	N/A	0	
Fence Crossings	100	0	
Gates in Fence	100	0	
Silt Fence	N/A	0	
Waddles	N/A	0	
Erosion Blankets	0	0	
Straw Bales	0	0	
Sand Bag Trench Breakers	N/A	N/A	
Swamp Mats	N/A	0	
Water Bars	N/A	0	
	0	0	
	0	0	

Photos
Page 2
20 photos were taken on inspection, dated 8-22-2016, showing depth and amount of top soil stripped and moved to opposite side on right of way easement. Top and Sub soils were kept segregated and separated from touching. Pipe has strung and some welded, on right of way. Discription of work will be noted on each photo, as listed on 1st set of photos taken 8-22-16. in Appendix C along with this report. All pipeline work has been kept well within the right of way easement.

Sub Contractors On-Site
No Sub-contractors on site during inspection #1 from observation of stripping and top soil removal locations on right of way easement construction project.

Disposition/Comments:
Scott Hummel, KLJ inspector, arrived at project site, located at station 0+00 on north side of highway 73, located in Mckenzie County. Inspection was conducted on 8-22-16, at 9:30 AM. Cole David, Inspector from STI, Superintendent, and Project Forman for Wyatt Construction were in attendance during inspection. Right of way was driven to conduct topsoil inspections and amount of top soil removed. It was noted during inspection, that pipe was being laid and welding pipe along north route on right of way had been started. GPS latitude and longitude readings were taken at given station points and are included within Appendix D, along with this report. Right of way was noted from inspection, that grading was mostly complete and top soils had been pushed to west opposite side on right of way easement and segregated from subsoil. Depth of soil removed off right of way was measured approximately 6-9 inches deep. Work continued on right of way heading north and west to Johnson Terminal Unit. Work can be noted from the 20 photos enclosed within Appendix C along with this report. No BMP's were installed along right of way as noted from inspection. After taking photos and observing work on right of way was being completed within PSC guidelines, Scott Hummel ,KLJ, left job site.

Inspectors Name:	Scott Hummel	**Date:**	8/22/2016
Inspectors Time (hrs.):	5		

Daily Construction Progress Report

Client:	N. Dak. Public Service Commission	**Report Number:**	2
Project:	Johnson Corner to DAPL Connector	**Date:**	8/30/2016
KL&J Project Number:	1216124 & PSC Case No PU-16-140	**Pages:**	1 and 2

Project Contact Information

Title	Name	Company	Office Phone	Cell Phone
Client Contact	Julie Prescott	ND Public Service Commission	701-328-4188	N/A
KLJ Project Manager	Paul Lee	KLJ	701-250-3501	701-351-5551
Field Inspector	Arnie Siverson	KLJ	701-355-8786	701-425-5414
Chief Field Inspector	Marc Westbrook	STI Group	409-384-4278	409-382-8333
Contractor Field Foreman	Kevin Tayor	Wyatt Construction	N/A	N/A

Daily Construction Conditions

Weather Conditions:	Overcast Cloudy, Cool & Breezy 15MPH
Temp (High/Low):	High 78, Low 65
Tailgate Meeting (Yes/No):	No

Daily Construction Activity

Construction Activity	Footage Installed Today	Total % To Date	Comments/Description
ROW Clearing	N/A	100	
Topsoil Removal	N/A	100	
Level/Grade ROW	N/A	90	
HDD Boring	N/A	80	
Ditch	N/A	100	
Pipe Hauling/Stringing	N/A	80	
Bending	N/A	70	
Pipe Lower/Pull-in	N/A	80	
Backfill/Compaction	N/A	80	
Welding	N/A	70	
Coating	N/A	65	
Clean Up	N/A	30	
Topsoil Replace/Final grade	N/A	0	
Final Reclamation & Reseeding	N/A	0	

Installed Quantities

Material	Quantity Installed Today	Total Quantity To-Date	Comments/Description
Mainline Block Valve Setting	N/A	N/A	
Pig Launcher	N/A	N/A	
Pig Receiver	N/A	N/A	
Fence Crossings	0	0	
Gates in Fence	50	0	
Silt Fence	N/A	N/A	
Waddles	N/A	N/A	
Erosion Blankets	0	0	
Straw Bales	0	0	
Sand Bag Trench Breakers	N/A	N/A	
Swamp Mats	N/A	N/A	
Water Bars	N/A	N/A	

Photos
Page 2
28 photos were taken on inspection, dated 8-30-2016, showing depth and amount of top soil stripped and moved to opposite side on right of way easement. Top and Sub soils were kept segregated and separated from touching. Photos were taken showing depth of trench along right of way. Discription of work has been noted on each photo, as listed on the second set of photos taken 8-30-16 in Appendix C along with this report.

Sub Contractors On-Site
No Sub-contractors on site during inspection #2 for observation on stripping and removal location of top soil on construction right of way easement.

Disposition/Comments:
Arnie Siverson, KLJ project inspector, arrived on job site right of way easement on 8-30-16 for second inspection at 2:00 PM. The purpose of the second inspection was to drive right of way and visualize the completed topsoil removal within right of way easement. Cole David, inspector for STI, was in attendance during inspection. The second inspection started at Station 0+00, located on north side of highway 73, in McKenze County. Most areas of topsoil deposted along right of way edge, appeared properly removed, piled and kept segregated from subsoil within right of way. Contractor was notified that some locations appeared to have both topsoil and subsoil mixed and piled to close together. Contractor had started seperating the piles further apart along right of way. GPS latitude and longitude readings were taken and are included in Appendix D, along with this report. Work can be noted from the 28 photos enclosed within Appendix C along with this report. After taking photos and observing work on right of way was being completed with PSC guidelines, KLJ inspectior left job site. A lot of clean up has to be done along right of way.

Inspectors Name:	Arnie Siverson	**Date:**	8/30/2016
Inspectors Time (hrs.):	3		

APPENDIX C: PHOTOGRAPHS

First Set Photos

Taken August 22, 2016

Photo 1: Located at station 0+00, showing Right of Way, beginning point of pipeline at Johnson's Corner. Right of Way has been graded with topsoil pushed off on edge of easement Right of Way. Photo looking northwest and taken on north side of Hwy 73.

Photo 2: Located at station PI 2+60.02, showing Right of Way graded and heading west, then turning north. Photo showing stripped Right of Way at approximate depth of 12 inches. Topsoil is shown on edge of Right of Way beyond.

Photo 3: Located at station 9+00, showing Right of Way looking north. Right of Way has been graded and stripped with topsoil pushed off on edge of Right of Way. Photo shows approximate depth of 12 inches stripped topsoil. Photo taken on north side of Hwy 73.

Photo 4: Located at station 15+00, showing Right of Way direction looking north.

Photo 5: Located at station 21+00, photo showing stripped Right of Way at approximate topsoil depth of 12 inches. Photo is showing west side of Right of Way edge.

Photo 6: Located at station 18+00, photo showing graded Right of Way looking south, with topsoil pushed off on Right of Way easement edge.

Photo 7: Located at station PI 25+09.66, showing Right of Way direction looking east then heading south. Photo showing stripped topsoil pushed to edge of Right of Way and 12 inch deep cut of Right of Way on right side of photo.

Photo 8: Located at station 27+00, photo showing graded and stripped Right of Way coming from the south, turning and heading west. 12 inch deep topsoil has been pushed off on edge of Right of Way easement.

Photo 9: Located at station 39+00, Photo looking east, showing graded and stripped Right of Way. Topsoil pushed off right side edge on Right of Way. Pipe has been strung out, setting of wood skids ready for welding.

Photo 10: Located at station 40+00, photo showing stripped Right of Way at approximate topsoil depth of 12 inches. Photo is showing south side of Right of Way.

Photo 11: Located at station 54+00, looking west. Photo showing graded and stripped Right of Way. Topsoil is located on the right edge of Right of Way. Subsoil located on left side of topsoil. Both soil types are segregated and separated. Pipeline is welded and setting on skids ready for trenching.

Photo 12: Located at station 57+00, looking west with Right of Way turning southwest. Photo showing graded and stripped Right of Way, topsoil located on left side Right of Way edge. Subsoil pile is located on right side of topsoil, but is segregated and separated. Pipeline is welded and setting on wood skids ready for trenching.

Photo 13: Located at station 63+00, looking west with Right of Way turning southwest. Photo showing graded and stripped Right of Way. Topsoil located on left side edge of Right of Way. Pipeline welded and setting on wood skids ready for trenching.

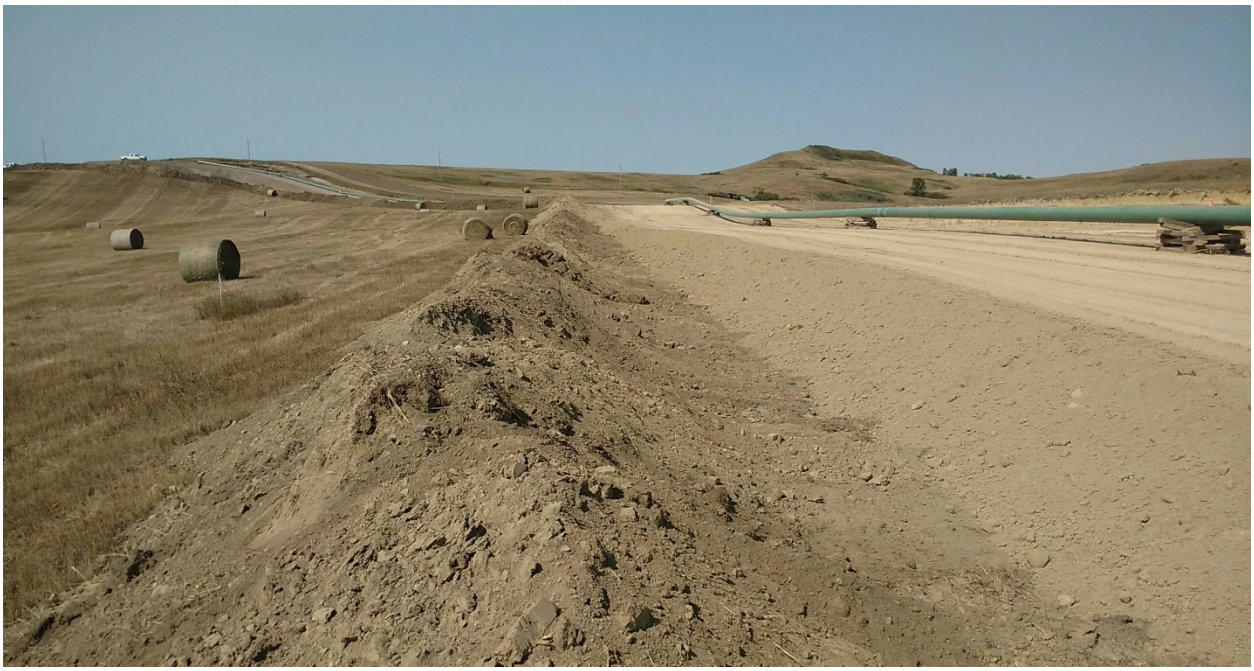


Photo 14: Located at station 66+00, looking west with Right of Way turning southwest. Photo showing graded and stripped Right of Way, topsoil located on left side edge of Right of Way. Subsoil pile is placed to the right of topsoil pile. Both soil types are segregated and separated not to touch. Pipeline welded and setting on wood skids ready for trenching.

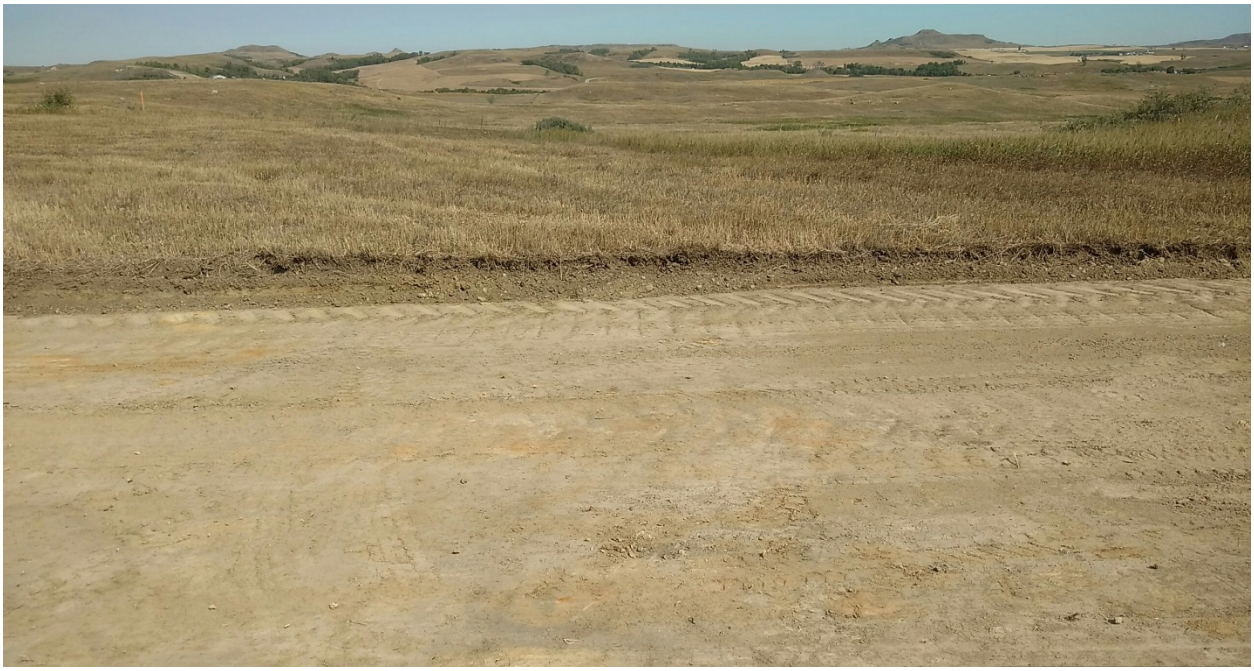


Photo 15: Located at station 75+00, showing stripped Right of Way at approximate topsoil depth of 12 inches. Soil depth is located on south side edge of Right of Way.

Photo 16: Located at station 76+00, looking south. Photo showing graded and stripped Right of Way. Topsoil pile is located far right on Right of Way edge. Subsoil pile is located on left side of topsoil location. Both soil types are segregated and separated. Pipeline is welded and setting on skids ready for trenching.

Photo 17: Located at station 78+00, photo showing stripped Right of Way with approximate topsoil depth of 12 inches. Photo showing west side at edge of Right of Way.

Photo 18: Located at station 81+00, coming from south direction and turning west. Photo showing stripped and graded Right of Way with approximate topsoil depth of 12 inches. Topsoil pile is pushed off on edge along Right of Way, located on north edge of Right of Way easement.

Photo 19: Located at station 81+00, showing stripped Right of Way with approximate topsoil depth of 12 inches. Photo is showing north side of Right of Way.

Photo 20: Located at station 87+00, looking west. Right of Way has been graded and stripped. Topsoil pile located on right edge along Right of Way. Pipeline is welded and setting on wood skids ready for trenching.

APPENDIX C: PHOTOGRAPHS

Second Set Photos

Taken August 30, 2016

Photo 1: Located at station 0+00, beginning of pipeline at Johnsons Corner surface site. Photo looking west with valve launcher/receiver beyond.

Photo 2: Located at station 6+00, looking south, workers on site backfilling trench and leveling topsoil placement.

Photo 3: Located at station 12+00, looking north. Workers on site welding pipe. Right of Way graded and ready for trenching.

Photo 4: Located at station 15+00, looking south. Photo showing Right of Way backfilled with piping installed. No leveling or grading completed.

Photo 5: Located at station 21+00, looking west along Right of Way. Subsoil is shown on right side edge of Right of Way and topsoil pile placed along right side of subsoil. It appears both soil types ate close enough to be touching. No clean up done on Right of Way.

Photo 6: Located at station PI 25+09.66, looking west with pipe in trench and then turning south. Photo shows trench needs to be backfilled and regraded. Clean up across Right of Way needs to be done also.

Photo 7: Located at station 27+00, looking west. Right of Way graded with topsoil placed on left side of Right of Way and subsoil on right side. Regrading and leveling are not complete.

Photo 8: Located at station 29+00, looking west. Along Right of Way edge, subsoil is placed on left side edge of Right of Way. Topsoil pile placed on left side of subsoil pile. Both piles appear to be close enough that both soil types are touching.

Photo 9: Located at station PI 30+26.19, looking west. Along Right of Way edge, subsoil pile is placed on left side edge of Right of Way. Topsoil pile is placed to the left of the subsoil pile. Both piles appear to be close enough that both soil types are touching.

Photo 10: Located at station PI 37+41.66, looking west. Photo showing topsoil and subsoil piles touching and piled together. Wood skids and other pipeline materials shown in photo. No clean up done.

Photo 11: Located at station 36+00, looking west. Photo showing graded Right of Way with open trench having pipe installed in trench. Trench not completely backfilled. Topsoil pile shown on right side of Right of Way.

Photo 12: Located at station 38+00, looking west. Piping installed in trench with partial backfill complete. Regrading and leveling not completed.

Photo 13: Located at station 42+00, looking west. Photo showing graded topsoil placed on Right of Way edge on right side of photo. Subsoil pile shown on the left side of photo. Both soil types appear to be touching and not separated as required.

Photo 14: Located at station 45+00, looking west. Contractor working on Right of Way stripping topsoil with dozer cat.

Photo 15: Located at station 51+00, looking west. Photo showing partial open trench with installed pipe ready to be backfilled. Topsoil shown placed on edge of Right of Way, in upper left corner of photo.

Photo 16: Located at station 54+00, looking west. Photo showing graded Right of Way with topsoil pile pushed off edge and placed on right side of photo. Right of Way nearly ready for trenching and pipe.

Photo 17: Located at station 57+00, looking west. Photo showing graded Right of Way, with topsoil pushed off on left side of Right of Way edge.

Photo 18: Located at station 63+00, looking west. Photo showing graded Right of Way with wood skids, ready to string out piping. Topsoil pile placed on left side edge on Right of Way.

Photo 19: Located at station 69+00, looking southwest. Photo showing BMP silt fence placed between topsoil pile and subsoil pile. Clean up not done. Silt fence to prevent soil types from touching.

Photo 20: Located at station 75+00, looking south. Photo showing graded Right of Way, showing subsoil pile on left side of photo, on Right of Way edge. Topsoil pile shown on right side of photo, pushed on right edge of Right of Way. BMP silt fence shown on top of photo to keep soil segregated.

Photo 21: Located at station 78+00, looking south. Photo showing graded Right of Way, with pipe installed in trench and backfilled. Right of Way has two toning slope with subsoil shown on left side of Right of Way and topsoil pile to left of subsoil. Soil types do not appear to be touching or connected.

Photo 22: Located at station 81+00, looking west. Photo showing subsoil located on left side of photo, with topsoil pile located on right side of photo. Soil types appear to be mixed and touching.

Photo 23: Located at station 84+00, looking west at graded Right of Way. Pipe installed in trench and backfilled. Right of Way topsoil needs to be finished level and cleaned up to original condition.

Photo 24: Located at station 87+00, looking north. Photo showing Right of Way with two toning slope with topsoil pile shown on left side of photo.

Photo 25: Located at station 96+00, looking west. Photo showing graded Right of Way graded with pipe installed in trench, ready to be backfilled as required.

Photo 26: Located at station 105+00, looking south. Photo showing graded Right of Way with dug trench, showing pipeline installed in trench. Trench ready for backfilling as required.

Photo 27: Located at station 108+00, looking south on Right of Way. Photo showing topsoil pile located on right side of photo and subsoil pile on left side of photo. Soil types appear to be touching.

Photo 28: Located at station 111+00, looking south showing graded Right of Way. Piping placed in trench and backfilled. Topsoil pushed off Right of Way and placed on right edge of easement.

APPENDIX C: PHOTOGRAPHS

Drone Photos

Taken October 13, 2016

Photo 1: Station 11+45; Latitude: 47°47'53.19"N Longitude: 102°55'33.03"

Photo 2: Station 12+60; Latitude: 47°47'53.14"N Longitude: 102°55'34.38"W

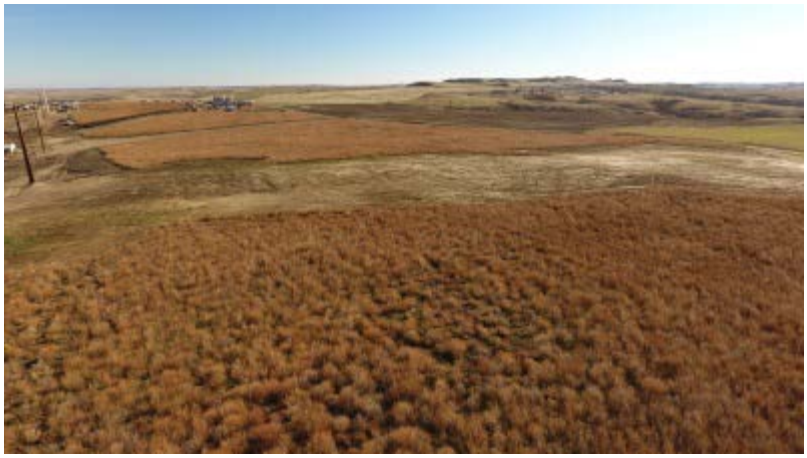


Photo 3: Station 14+30; Latitude: 47°47'53.30"N Longitude: 102°55'36.35"W

Photo 4: Station 18+62; Latitude: 47°47'54.44"N Longitude: 102°55'38.81"W

Photo 5: Station 21+58; Latitude: 47°47'56.79"N Longitude: 102°55'40.75"W

Photo 6: Station 32+23; Latitude: 47°48'5.16"N Longitude: 102°55'39.07"W

Photo 7: Station 34+76; Latitude: 47°48'7.15"N Longitude: 102°55'38.71"W

Photo 8: Station 39+50; Latitude: 47°48'10.88"N Longitude: 102°55'38.06"W

Photo 9: Station 44+14; Latitude: 47°48'14.59"N Longitude: 102°55'37.73"W

Photo 10: Station 49+52; Latitude: 47°48'18.87"N Longitude: 102°55'37.70"W

Photo 11: Station 53+01; Latitude: 47°48'21.05"N Longitude: 102°55'36.53"W

Photo 12: Station 60+18; Latitude: 47°48'23.17"N Longitude: 102°55'33.31"W

Photo 13: Station 62+08; Latitude: 47°48'23.84"N Longitude: 102°55'31.10"W

Photo 14: Station 63+90; Latitude: 47°48'24.85"N Longitude: 102°55'30.77"W

Photo 15: Station 68+45; Latitude: 47°48'25.47"N Longitude: 102°55'25.48"W

Photo 16: Station 71+49; Latitude: 47°48'25.65"N Longitude: 102°55'22.03"W

Photo 17: Station 76+18; Latitude: 47°48'26.26"N Longitude: 102°55'16.52"W

Photo 18: Station 82+73; Latitude: 47°48'27.84"N Longitude: 102°55'13.37"W

Photo 19: Station 84+68; Latitude: 47°48'29.34"N Longitude: 102°55'10.99"W

Photo 20: Station 86+12; Latitude: 47°48'30.53"N Longitude: 102°55'10.88"W

Photo 21: Station 88+50; Latitude: 47°48'32.39"N Longitude: 102°55'10.54"W

Photo 22: Station 92+08; Latitude: 47°48'35.25"N Longitude: 102°55'11.08"W

Photo 23: Station 94+62; Latitude: 47°48'36.06"N Longitude: 102°55'7.58"W

Photo 24: Station 103+83; Latitude: 47°48'37.89"N Longitude: 102°55'5.78"W

Photo 25: Station 105+40; Latitude: 47°48'39.09"N Longitude: 102°55'2.97"W

Photo 26: Station 108+09; Latitude: 47°48'39.60"N Longitude: 102°55'0.55"W

Photo 27: Station 111+55; Latidude: 47°48'39.93"N Longitude: 102°54'56.38"W

Photo 28: Station 117+80; Latitude: 47°48'39.60"N Longitude: 102°54'50.32"W

Photo 29: Station 123+95; Latitude: 47°48'38.92"N Longitude: 102°54'43.13"W

Photo 30: Station 127+26; Latitude: 47°48'38.72"N Longitude: 102°54'38.04"W

Photo 31: Station 131+03; Latitude: 47°48'39.56"N Longitude: 102°54'33.49"W

Photo 32: Station 135+25; Latitude: 47°48'39.36"N Longitude: 102°54'28.74"W

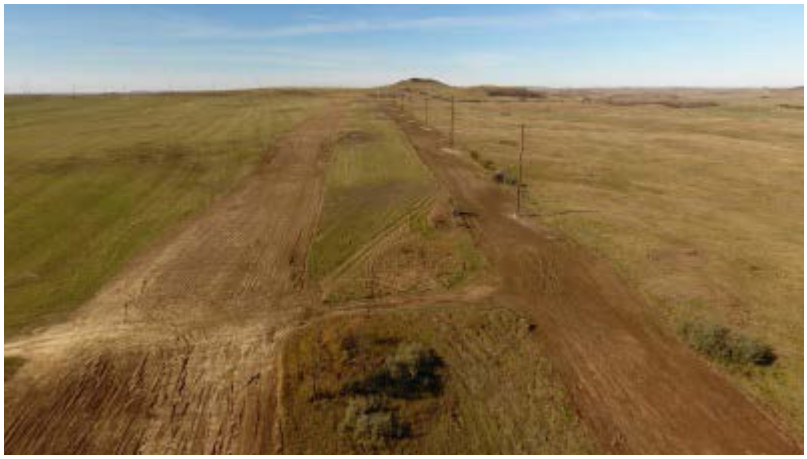


Photo 33: Station 138+03; Latitude: 47°48'39.19"N Longitude: 102°54'25.28"W

Photo 34: Station 140+78; Latitude: 47°48'39.49"N Longitude: 102°54'22.24"W

Photo 35: Station 143+30; Latitude: 47°48'39.33"N Longitude: 102°54'19.20"W

Photo 36: Station 145+70; Latitude: 47°48'39.28"N Longitude: 102°54'16.43"W

Photo 37: Station 149+05; Latitude: 47°48'39.30"N Longitude: 102°54'12.44"W

Photo 38: Station 154+95; Latitude: 47°48'39.12"N Longitude: 102°54'8.86"W

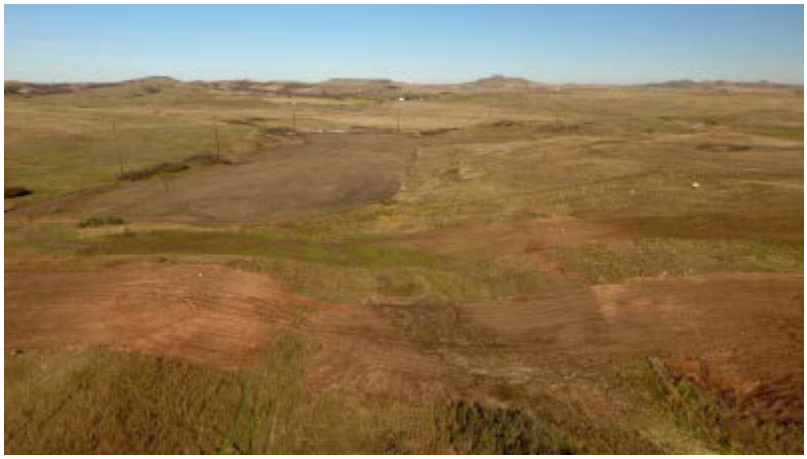


Photo 39: Station 157+70; Latitude: 47°48'36.87"N Longitude: 102°54'7.33"W

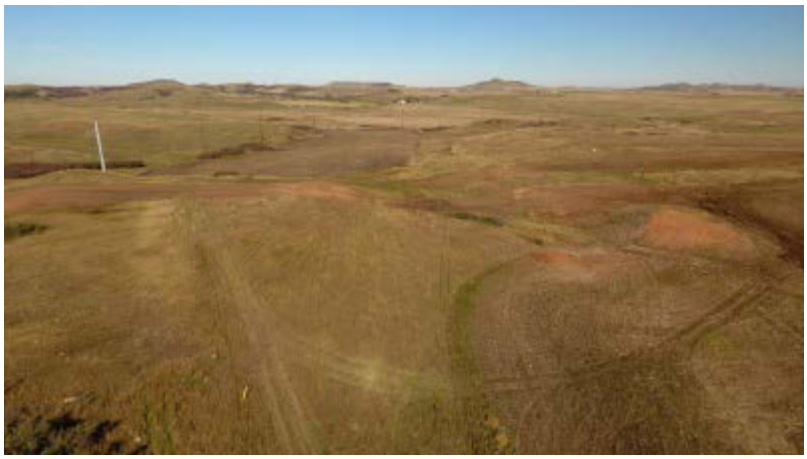


Photo 40: Station 160+50; Latitude: 47°48'34.67"N Longitude: 102°54'7.36"W

Photo 41: Station 164+48; Latitude: 47°48'31.55"N Longitude: 102°54'7.42"W

Photo 42: Station 167+90; Latitude: 47°48'27.24"N Longitude: 102°54'7.50"W

Photo 43: Station 175+48; Latitude: 47°48'22.86"N Longitude: 102°54'7.58"W

Photo 44: Station 181+26; Latitude: 47°48'18.27"N Longitude: 102°54'7.60"W

Photo 45: Station 185+20; Latitude: 47°48'15.18"N Longitude: 102°54'7.51"W

Photo 46: Station 187+99; Latitude: 47°48'12.99"N Longitude: 102°54'7.39"W

Photo 47: Station 190+05; Latitude: 47°48'12.47"N Longitude: 102°54'6.10"W

Photo 48: Station 191+75; Latitude: 47°48'12.36"N Longitude: 102°54'4.10"W

Photo 49: Station 195+75; Latitude: 47°48'12.30"N Longitude: 102°53'59.41"W

Photo 50: Station 199+68; Latitude: 47°48'12.26"N Longitude: 102°53'54.87"W

Photo 51: Station 202+97; Latitude: 47°48'12.25"N Longitude: 102°53'50.98"W

Photo 52: Station 205+05; Latitude: 47°48'12.32"N Longitude: 102°53'48.53"W

Photo 53: Station 207+25; Latitude: 47°48'12.23"N Longitude: 102°53'45.73"W

Photo 54: Station 208+30; Latitude: 47°48'11.23"N Longitude: 102°53'45.80"W

Photo 55: Station 209+45; Latitude: 47°48'10.43"N Longitude: 102°53'45.82"W

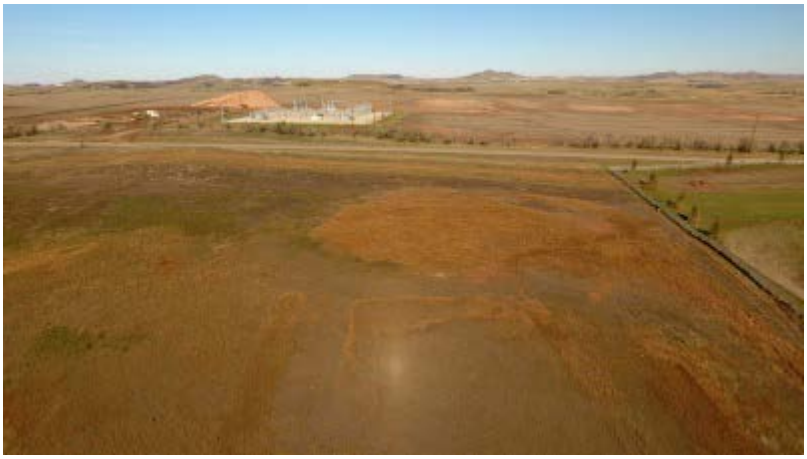


Photo 56: Station 212+58; Latitude: 47°48'7.87"N Longitude: 102°53'45.95"W

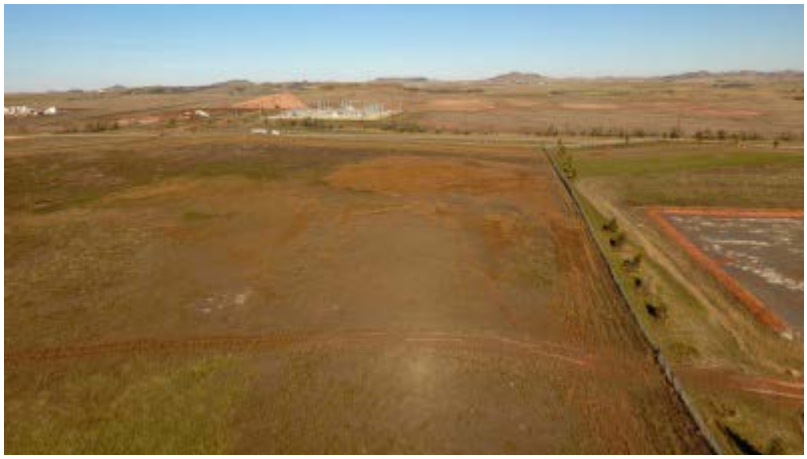


Photo 57: Station 215+30; Latitude: 47°48'5.73"N Longitude: 102°53'44.68"W

Photo 58: Station 218+82; Latitude: 47°48'2.99"N Longitude: 102°53'44.66"W

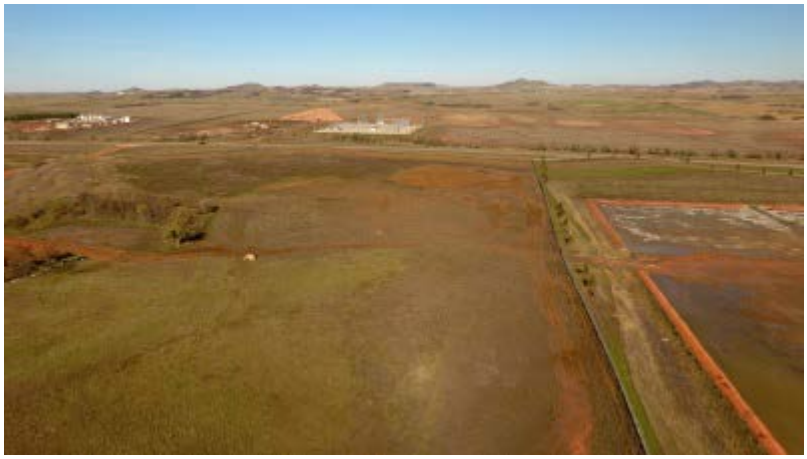


Photo 59: Station 220+67; Latitude: 47°48'2.47"N Longitude: 102°53'44.64"W

Photo 60: Station 220+98; Latitude: 47°48'2.31"N Longitude: 102°53'44.39"W

APPENDIX D:

Field Photo Observation Points

POINT	STATION	NAME	LATITUDE	LONGITUDE	DATE
1	0+00	Topsoil stripped	N 47.4817	W 102.5400	8/22/2016
2	PI2+60.02	Topsoil stripped	N 47.4822	W 102.5403	8/22/2016
3	9+00	Topsoil stripped, Top and subsoil pile separate	N 47.4832	W 102.5407	8/22/2016
4	15+00	Topsoil stripped	N 47.4753	W 102.5536	8/22/2016
5	21+00	Topsoil stripped, Topsoil depth	N 47.4756	W 102.5540	8/22/2016
6	18+00	Topsoil stripped, Topsoil pile	N 47.5144	W 102.5538	8/22/2016
7	PI25+09.66	Topsoil stripped, Top and subsoil pile separated	N 47.5451	W 102.5540	8/22/2016
8	27+00	Topsoil stripped, Top and subsoil pile separated	N 47.5540	W 102.5543	8/22/2016
9	39+00	Topsoil stripped, pipe strung out, ready to install pipe	N 47.4810	W 102.5538	8/22/2016
10	40+00	Topsoil stripped, showing depth of cut	N 47.4810	W 102.5538	8/22/2016
11	54+00	Topsoil stripped, Top and subsoil pile separated	N 47.4831	W 102.5539	8/22/2016
12	57+00	Topsoil stripped	N 47.4823	W 102.5536	8/22/2016
13	63+00	Topsoil stripped, Topsoil piled, Pipe welded	N 47.4826	W 102.5537	8/22/2016
14	66+00	Topsoil stripped, Top and subsoil pile separated	N 47.4822	W 102.5538	8/22/2016
15	75+00	Topsoil stripped and depth of cut	N 47.4826	W 102.5516	8/22/2016
16	76+00	Topsoil stripped, Top and subsoil pile separate	N 47.4826	W 102.5516	8/22/2016
17	78+00	Topsoil stripped, showing depth of cut	N 47.4826	W 102.5516	8/22/2016
18	81+00	Topsoil stripped, Top and subsoil pile separate	N 47.4827	W 102.5513	8/22/2016
19	81+00	Topsoil stripped, showing depth of cut	N 47.4827	W 102.5513	8/22/2016
20	87+00	Topsoil stripped, Topsoil piled, Pipe welded, Ready to trench	N 47.4832	W 102.5510	8/22/2016
1	0+00	Topsoil stripped, Equipment	N 47.4817	W 102.5400	8/30/2016
2	6+00	Topsoil stripped, Top and subsoil pile separated, Equipment working	N 47.4818	W 102.5402	8/30/2016
3	12+00	Equipment setting pipe	N 47.4753	W 102.5533	8/30/2016
4	15+00	Topsoil stripped, Subsoil pile separated	N 47.4753	W 102.5536	8/30/2016
5	21+00	Topsoil stripped, Top and subsoil pile separated	N 47.4756	W 102.5540	8/30/2016
6	PI 25+09.66	Trench pipe in trench	N 47.5451	W 102.5540	8/30/2016
7	27+00	Right of Way graded, Topsoil and subsoil piled on edge	N 47.5540	W 102.5543	8/30/2016
8	29+00	Right of Way stripped, Topsoil and subsoil piled on edge	N 47.5542	W 102.5545	8/30/2016
9	PI 30+26.19	Right of Way stripped	N 47.4851	W 102.5539	8/30/2016
10	PI 37+11.66	Topsoil and subsoil piled on edge	N 47.4810	W 102.5541	8/30/2016
11	36+00	Topsoil stripped	N 47.5059	W 102.5543	8/30/2016
12	38+00	Topsoil stripped, Top and subsoil pile separate, Piping in trench	N 47.5101	W 102.5538	8/30/2016
13	42+00	Topsoil stripped, Top and subsoil pile on edge of Right of Way	N 47.4814	W 102.5539	8/30/2016
14	45+00	Topsoil stripped, Equipment working	N 47.4821	W 102.5541	8/30/2016
15	51+00	Topsoil stripped, Pipe in trench	N 47.4821	W 102.5536	8/30/2016
16	54+00	Topsoil stripped, topsoil pile on edge of Right of Way	N 47.4821	W 102.5536	8/30/2016
17	57+00	Topsoil stripped, Top an subsoil pile on edge of Right of Way	N 47.4823	W 102.5539	8/30/2016
18	63+00	Topsoil stripped, Top and subsoil pile separate	N 47.4823	W 102.5537	8/30/2016
19	69+00	Topsoil stripped, Top and subsoil pile on edge of Right of Way, BMP installed	N 47.4825	W 102.5522	8/30/2016
20	75+00	Topsoil stripped, Top and subsoil pile on edge of Right of Way	N 47.4826	W 102.5351	8/30/2016
21	78+00	Topsoil stripped, Top and subsoil pile on edge of Right of Way	N 47.4826	W 102.5516	8/30/2016
22	81+00	Top and subsoil pile on edge of Right of Way	N 47.4827	W 102.5513	8/30/2016
23	84+00	Topsoil stripped	N 47.4829	W 102.5510	8/30/2016
24	87+00	Topsoil stripped, topsoil pile on edge of Right of Way, cleanup to be done	N 47.4832	W 102.5510	8/30/2016
25	96+00	Topsoil stripped, topsoil pile on edge of Right of Way, Pipe in trench	N 47.4833	W 102.5572	8/30/2016
26	105+00	Topsoil stripped, topsoil pile on edge of Right of Way, Pipe in trench	N 47.4839	W 102.5573	8/30/2016
27	108+00	Topsoil stripped, Top and subsoil pile separate	N 47.4839	W 102.5575	8/30/2016
28	111+00	Topsoil stripped, Top and subsoil pile on edge of Right of Way	N 47.4840	W 102.5577	8/30/2016

4585 Coleman Street
PO Box 1157
Bismarck, ND 5850-1157
701 355 8400
Kljeng.com