



Bridger Pipeline LLC

8-inch Crude Oil Pipeline – McKenzie County

Case No. PU-20-430

Topsoil Removal Inspection Report





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December 14, 2021

RE: Case No. PU-20-430
Bridger Pipeline LLC
8-Inch Crude Oil Pipeline – McKenzie
County
Topsoil Removal Inspection Report

Mr. Adam Renfandt
Public Utility Analyst
North Dakota Public Service Commission
600 East Boulevard Avenue, Dept. 408
Bismarck, ND 58505-0480

Dear Mr. Renfandt:

Attached is the Topsoil Removal Inspection Report for the above referenced project. This report includes the following:

1. Executive Summary
2. Inspection Report
3. Appendix A – Photo Location Map
4. Appendix B - Photographs

Sincerely,

A handwritten signature in blue ink that reads "Matthew Schaible".

Matthew Schaible, PE
Short Elliott Hendrickson Inc.
4719 Shelburne Street, Suite 6
Bismarck, ND 58503-5677

Engineers | Architects | Planners | Scientists

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EXECUTIVE SUMMARY

Date: 11/29/2021

Project: Bridger Pipeline LLC 8-inch Crude Oil Pipeline

Initial site visit was conducted by Inspector to document Topsoil Removal for construction of PU-20-430 Bridger Pipeline LLC 8-inch Crude Oil Pipeline. Inspector was onsite to document existing conditions throughout the area of disturbance. Work included taking photos of pipeline centerline alignment, edges of construction zone, existing vegetation conditions, and topsoil depth checks. Documentation was conducted to verify contractor is able to successfully segregate topsoil and subsoil in order to return disturbance area back to original conditions within reasonable means.

Prior to construction beginning, Bridger Pipeline LLC construction superintendent and Loenbroe Pipeline LLC foreman was able to hold an on-site pre-construction meeting to go through day's plan which included hydrovac of utility crossings and topsoil removal. Topsoil was to be removed by grader first and windrowed Left of pipeline centerline, followed by assistance with a dozer to push topsoil in one windrow along the Left edge of construction zone. Later in project when all topsoil is stripped and underground borings are completed, subsoil will be excavated and placed Right of pipeline centerline in order to begin installment of 8 inch pipe.

No concerning issues were identified during inspection. Inspector only had to notify contractor foreman and equipment operator of few locations where topsoil depth check where conducted that they were to be cautious to not over strip topsoil where it thins out to less than 4.25 Inches. Contractor was aware to maintain segregation.

Inspector stayed on site during until Loenbroe operators demonstrated proficiency in topsoil removal and segregation methods.


Inspector's Signature



INSPECTOR'S DIARY

Project: PU-20-430 Bridger Pipeline LLC 8-inch Crude Oil Pipeline		Contractor: Loebro Pipeline LLC	
Date: 11/29/2021	Day: Monday		Subcontractor: Dirty Birds LLC
Weather: Clear & sunny, wind 10-20 mph from NW		Temp: 52 F	Inspector: Brandon Myran
Work Activities: * Work included stripping of topsoil until underlying subsoil (lean to fatty clay) was observed. If topsoil exceeded 12 Inches, contractor would no longer strip topsoil. Topsoil was stripped within 75 foot wide pipeline construction zone and windrowed along left side pipeline centerline. Topsoil was stripped and stockpiled by use of (1) John Deere 872GP Grader and (2) CAT D6 Dozers.			
Labor Force: Bridger Pipeline LLC: 1-Construction Supervisor (Tommy Massengale) Loebro Pipeline LLC: 1-Foreman (Eric Garcia), 3-Operators, 5 Laborers Dirty Birds LLC: 1 Driver, 1 Laborer Avery Inspection: 1-Inspector (Jake Massengale)			
Contractor Correspondence: * Brandon Myran met with Tommy Massengale and Loebro Pipeline LLC foreman (Eric Garcia) at 0930 to go over construction plans. Eric says they plan to use grader to remove topsoil and place windrow on Left side of pipeline centerline. Dozer operator will make final passes consolidating topsoil windrows into one on left edge of construction zone. They will have 1 grader start at approximately STA 7+26 going positive in Stationing following pipeline alignment in order to get one dozer operator started and will bounce to STA 30+09 to start the next section following the underground boring section. Once topsoil is cleared within construction limits, they will at later date start boring sections and begin digging subsoil and placing subsoil on right side of pipeline centerline in order to maintain segregation of topsoil. Contractors are thinking project will take 2.5 weeks. * 1040 Brandon Myran talks with grader operator to let him know the double rolling hill from approximately STA 17+50 to STA 21+20 has topsoil thinning out to about 3 to 4.25 Inches (See P26, P27, P36, P37), so he should be aware to not over cut into subsoil causing mixing of topsoil with subsoil. Grader says he is only doing initial surface cuttings and the dozer will be pushing the windrows to the East and doing more cutting if needed. Brandon Myran relays message to Dozer operator what he told grader operator about thinning topsoil on double knob hill. Dozer says he will slow down to make sure he doesn't over cut. * 1325 Brandon Myran talks with Eric Garcia to verify his dozer operator won't over cut any subgrade to be placed with topsoil windrow. Eric says operator is aware and will continue pushing topsoil left of pipeline centerline and grader will make last passes in order to be more precise on last of topsoil stripping. Any subsoil that was cut by grader or dozer within STA 17+50 to STA 21+20 should now be started windrowing to right of pipeline centerline. Brandon also lets Eric Garcia be aware of thin layer of topsoil (approximately 2.25 IN) around hill top around STA 54+40 (See P30). Thin topsoil correlates with minimal vegetation noticed by inspector (See P31). Hill side near bore end does have some existing brush vegetation (See P32). Eric says they are aware and that the hillside brush shouldn't be an issue in protecting. Loebro plans on extending the bore 2 sticks of pipe so that excavation wouldn't disturb the hillside as bad. Also mentioned to Eric is that freshly loose topsoil within STA 58+00 to STA 64+80 cultivated field may be deeper than 12 Inches (See P33, P34). If topsoil exceeds 12 Inch, salvaging of topsoil can end once 12 Inch is removed.			
Other Remarks: * At end of site visit, Brandon Myran spoke with Eric Garcia. Brandon Myran lets Eric know operators are to continue topsoil removal methods as discussed in morning meeting and conversation held for area between STA 17+50 to STA 21+20. Any subsoil excavation if encountered should remain segregated and placed on the right side of the pipeline centerline. Brandon also reiterates that soil removed shouldn't cross the construction limits which are staked out with blue lathe.			


Inspector's Signature



INSPECTOR'S DIARY

Date: 11/29/2021

Project: PU-20-430 Bridger Pipeline LLC 8-inch Crude Oil Pipeline Contractor or Sub: Loenbro Pipeline LLC, Dirty Birds LLC

Work Performed & Location:

* Prior to start of topsoil stripping, initial field observations were made (See P1-P23). Soil was soft and found to not be frozen. Majority of pipeline alignment where topsoil surface will be disturbed is within agriculture whose crop has already been harvested or there was little to no vegetation. Within agriculture areas, topsoil isn't densely compacted due to previous cultivation. Areas outside of agriculture consisted of natural grassland vegetation (See P3, P4, P12-P17, P22). These areas are mostly staging areas for planned boring crossings under vegetation (trees, shrubs, and natural drainage ways). Wetland area (See P2) will not be disturbed as boring is planned from Project Beginning to approximately STA 7+26 as stated by Tommy Massengale. Location at STA 37+82 which will be excavated had denser existing vegetation (See P12, P13, P28). Location going up steepest hill within project (STA 54+00 to 55+51) has the least amount of topsoil thickness which was measured at approximately 2 1/4 Inch (See P30). Vegetation within this location was also noticed as more scarce (See P29).

* No standing water was observed that would be encountered excavation for pipeline between STA 7+26 to STA 67+70 (End Station).

* Project pipeline alignment includes several borings to avoid disturbance of existing areas:

- Wetland from Project Begin to STA 7+26 (See P2, P4)
- Trees/Brush with natural wooded draw from STA 10+80 to STA 12+00
- Trees/Brush within natural grassed draw from STA 27+38 to STA 30+09 (See P9)
- Trees/Brush within 108th Ave NW gravel road ditch from STA 55+51 to STA 58+20 (See P16)
- Crossing of East/West gravel road from STA 64+71 to STA 67+17 (See P21)

* Method of Removal:

- Grader was used to establish outer boundary of removals within pipeline 75 foot wide construction zone. Grader pushed topsoil windrows to left side of pipeline centerline. Dozer assisted in pushing grader windrows to outer left edge within construction zone (See P35, P37, P38, P39).
- Final topsoil windrow was approximately 30 feet left of pipeline centerline leaving between 2-5 feet left from edge of construction zone which were marked out with blue lathe.

* Within the first section of topsoil stripping, it was observed that subsoil appeared as a light gray in majority of areas and few areas having a slight orange tint after topsoil was stripped. Inspector corresponded with Loenbro operators to no longer strip in thin section of topsoil on hill top from STA 17+50 to STA 21+20 once subsoil was exposed.

* Topsoil stripped with agriculture field at STA 40+40 was measured at a depth of approximately 7 IN (See P29). Subsoil appears as light gray homogeneous lean clay loam.

CONTRACTOR EQUIPMENT:

Loenbro Pipeline LLC: (1) John Deere 872GP Grader, (2) CAT D6 Dozers


Inspector's Signature



INSPECTOR'S DIARY

Date: 11/29/2021

Project: PU-20-430 Bridger Pipeline LLC 8-inch Crude Oil Pipeline Contractor or Sub: Loenbro Pipeline LLC, Dirty Birds LLC

Photo Description:

- | Photo Name: | Description: |
|--|--------------|
| Picture#, Station, AH=Ahead Stationing, BK=Back Stationing, RT= Right, Description | |
| P1 - STA 3+48 BK, Existing Conditions | |
| P2 - STA 4+74 AH, Existing Conditions | |
| P3 - STA 7+26 AH, Existing Conditions, Bore End | |
| P4 - STA 7+26 BK, Existing Conditions, Bore End | |
| P5 - STA 8+00 AH, Existing Conditions | |
| P6 - STA 14+00 AH, Existing Conditions | |
| P7 - STA 24+00 AH, Existing Conditions | |
| P8 - STA 26+37 AH, Existing Conditions | |
| P9 - STA 27+38 AH, Existing Conditions, Bore Begin | |
| P10 - STA 30+09 AH, Existing Conditions, Bore End | |
| P11 - STA 36+00 AH, Existing Conditions | |
| P12 - STA 37+82 AH, Existing Conditions | |
| P13 - STA 38+20 BK, Existing Conditions | |
| P14 - STA 53+50 AH, Existing Conditions | |
| P15 - STA 54+00 RT View, Existing Conditions | |
| P16 - STA 56+00 AH, Existing Conditions | |
| P17 - STA 56+89 BK, Existing Conditions | |
| P18 - STA 58+18 AH, Existing Conditions, End Bore | |
| P19 - STA 58+18 BK, Existing Conditions, End Bore | |
| P20 - STA 64+00 AH, Existing Conditions | |
| P21 - STA 64+71 AH, Existing Conditions, Begin Bore | |
| P22 - STA 67+17 AH, Existing Conditions, End Bore | |
| P23 - STA 67+53 AH, Existing Conditions, Near End Tie In | |
| P24 - STA 7+22 Existing Vegetation | |
| P25 - STA 7+22 Existing Topsoil | |
| P26 - STA 19+00 Existing Topsoil | |
| P27 - STA 19+00 Existing Topsoil | |
| P28 - STA 37+82 Existing Vegetation | |
| P29 - STA 40+40 Existing Topsoil | |
| P30 - STA 54+40 Existing Vegetation | |
| P31 - STA 54+40 Existing Topsoil | |
| P32 - STA 54+50 Surrounding Vegetation | |
| P33 - STA 62+50 Existing Topsoil | |
| P34 - STA 62+50 Existing Topsoil | |
| P35 - STA 8+00 AH, Topsoil Removal and Windrow | |
| P36 - STA 19+00 AH, Topsoil Removal | |
| P37 - STA 19+00 BK, Topsoil Removal | |
| P38 - STA 24+00 BK, Topsoil Removal and Windrow | |
| P39 - STA 37+82 BK, Topsoil Removal and Windrow | |
| P40 - STA 38+50 AH, Topsoil Removal | |

*See attached map with location of each photo, and attached pages of photo's

Inspector's Signature

Appendix A

Photo Location Map

Appendix B

Photos

P1 - STA 3+48 BK, Existing Conditions



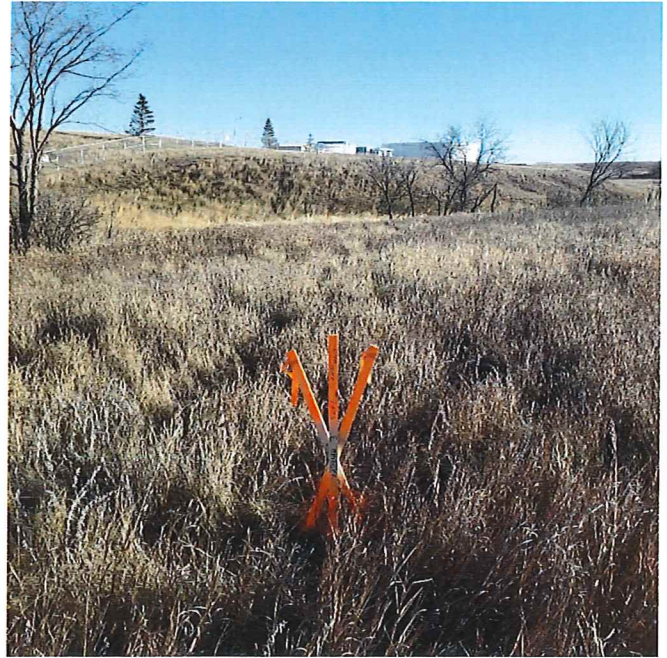
P2 - STA 4+74 AH, Existing Conditions



P3 - STA 7+26 AH, Existing Conditions, Bore End



P4 - STA 7+26 BK, Existing Conditions, Bore End



P5 - STA 8+00 AH, Existing Conditions



P6 - STA 14+00 AH, Existing Conditions



P7 - STA 24+00 AH, Existing Conditions



P8 - STA 26+37 AH, Existing Conditions



P9 - STA 27+38 AH, Existing Conditions, Bore Begin



P10 - STA 30+09 AH, Existing Conditions, Bore End



P11 - STA 36+00 AH, Existing Conditions



P12 - STA 37+82 AH, Existing Conditions



P13 - STA 38+20 BK, Existing Conditions



P14 - STA 53+50 AH, Existing Conditions



P15 - STA 54+00 RT View, Existing Conditions



P16 - STA 56+00 AH, Existing Conditions



P17 - STA 56+89 BK, Existing Conditions



P18 - STA 58+18 AH, Existing Conditions, End Bore



P19 - STA 58+18 BK, Existing Conditions, End Bore



P20 - STA 64+00 AH, Existing Conditions



P21 - STA 64+71 AH, Existing Conditions, Begin Bore



P22 - STA 67+17 AH, Existing Conditions, End Bore



P23 - STA 67+53 AH, Existing Conditions, Near End Tie In



P24 - STA 7+22 Existing Vegetation



P25 - STA 7+22 Existing Topsoil



P26 - STA 19+00 Existing Topsoil



P27 - STA 19+00 Existing Topsoil



P28 - STA 37+82 Existing Vegetation



P29 - STA 40+40 Existing Topsoil



P30 - STA 54+40 Existing Vegetation



P31 - STA 54+40 Existing Topsoil



P32 – STA 54+50 Surrounding Vegetation



P33 - STA 62+50 Existing Topsoil



P34 - STA 62+50 Existing Topsoil



P35 - STA 8+00 AH, Topsoil Removal and Windrow



P36 - STA 19+00 AH, Topsoil Removal



P37 - STA 19+00 BK, Topsoil Removal



P38 - STA 24+00 BK, Topsoil Removal and Windrow



P39 - STA 37+82 BK, Topsoil Removal and Windrow



P40 - STA 38+50 AH, Topsoil Removal





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