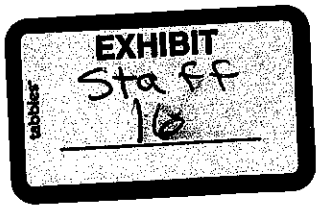
BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DOCKET NO. HP14-002

IN THE MATTER OF THE APPLICATION OF DAKOTA ACCESS, LLC FOR AN ENERGY FACILITY PERMIT TO CONSTRUCT THE DAKOTA ACCESS PIPELINE

Direct Testimony of Ryan Ledin
On Behalf of the Staff of the South Dakota Public Utilities Commission
July 6, 2015



Q: Please state your name and business address.

A: Ryan Ledin
Natural Resource Group, LLC
IDS Center, 80 S 8th St, Minneapolis, MN 55402

Q: Describe your educational background.

A: I received my Bachelor's degree in 2009 from Winona State University, in Environmental Geology – Environmental Science

Q: By whom are you now employed?

A: I have been employed by Natural Resource Group, LLC, an ERM Group Company since 2012, and was employed at E3 Environmental, LLC from 2010 to 2012. I currently hold a Construction Compliance Specialist position in our Construction Compliance Group.

Q: What work experience have you had that is relevant to your involvement on this project?

A: At NRG my responsibilities have included providing support in the pipeline and transmission line industries with environmental permitting and environmental review services including assisting in the preparation of Environmental Impact Statements and Environmental Assessments under the National Environmental Policy Act and/or applicable state programs. I have environmental consulting experience in the natural gas and petroleum pipeline industries including gathering, interstate and intrastate, as well as operations and maintenance projects.

I have experience with various federal, state, and local agencies, including the Bureau of Land Management (BLM), U.S. National Forrest Service (NFS), Federal Energy Regulatory Commission (FERC), U.S. Army Corps of Engineers (COE), and U.S. Fish and Wildlife Service (USFWS). Stormwater permitting in 20 states (AL, CO, IA, IL, IN, PA, MO, MN, MT, ND, OH, OK, SD, TX, WI, WY).

I have acted as the Environmental Inspector during pipeline construction in 6 states involving more than 1,500 miles of right-of-way, and as a Lead Environmental Inspector on various gathering projects in North Dakota.

I have also served as a construction compliance advisor for several potential pipeline projects, reviewing route and design plans for constructability issues in relation to natural resources impacts and environmental permitting.

Q: What Professional Credentials do you hold?

A: None.

Q: What is the purpose of your testimony?

A: I evaluated the hydrology, hydrostatic test water use, and water quality Project constraints sections (15.0, 15.1, 15.2, 15.3, 15.4, 15.5, and 20.0) of the Dakota Access LLC (Dakota Access) Revised South Dakota Public Utilities Commission Application (PUC) for a permit to construct the Dakota Access Pipeline under the Energy Conservation and Transmission Facility Act. I also evaluated Dakota Access's Agricultural Impact Mitigation Plan and Draft Stormwater Pollution Prevention Plan (SWPPP) to further review the level of detail provided for erosion

control and revegetation mitigation measures to assess that areas affected by construction of the proposed Project would be restored to pre-construction conditions within a reasonable timeframe post construction.

Q: What methodology did you employ?

A: I assessed the information provided in Sections 15.1, 15.2, 15.3, 15.4,15.5 and 20.0 of the Dakota Access's Revised PUC by comparing it to information which is normally provided in comparable industry-standard applications for state and federal permits. I also assessed the information provided in the SWPPP and the Agricultural Impact Mitigation Plan by comparing it to multiple project-specific construction mitigation plans used for projects in a similar geographic region.

Q: Did you review sections 15.1, 15.2, 15.3, 15.4, 15.5, and 20.0 of the Revised Application that address hydrology, hydrostatic test water use, and water quality?

A: Yes, I reviewed sections 15.1, 15.2, 15.3, 15.4, 15.5, and 20.0 of the Revised application as well as the SWPPP, the Agricultural Impact Mitigation Plan, and Dakota Accesses' responses to PUC staff's data requests that were applicable to hydrology, hydrostatic test water use, and water quality.

Q: Does Dakota Access correctly identify the permits required for hydrostatic test water withdrawal and discharge?

A: The Draft PUC Application appears to omit the South Dakota Temporary Discharge Permit that covers Hydrostatic Test and Trench Dewatering. The permit number is SDG070000, and requires authorization. This permit has monitoring, reporting, and recording requirements.

Q: Do you have any additional recommendations for Dakota Access in regards to either hydrostatic test water withdrawal or discharge?

A: At the time of our review, the locations for hydrostatic test water withdrawal and discharge had yet to be identified. I recommend that qualified people with an engineering and environmental background having familiarity with hydrostatic test withdrawals and discharges review all proposed locations prior to the submittal of permit applications or notices. I also recommend identifying and permitting several locations in addition to what may actually be needed as a contingency plan.

Q: Did you review Dakota Access's Stormwater Pollution Prevention Plan (SWPPP), as found in Exhibit D of the Revised Application?

A: Yes.

Q: In your opinion, does the SWPPP follow standard industry practices and comply with applicable regulations?

A: The plan includes many standard industry practices, but fails to quantify the measureable standards by which such industry practices will be implemented on the Project (e.g. slope breaker intervals, use of trench plugs, type and frequency of erosion control devices, application of mulch). Recommendations for these measures are included below.

Q: Do you have any recommended changes for the SWPPP? If so, please explain.

A: Yes, based on a determination that some Project construction activities are likely to take place during frozen conditions. As mentioned in NRG's testimony

regarding soil types and geological features, the Revised Application, SWPPP, and Agricultural Impact Mitigation Plan do not mention winter construction, stabilization procedures, or seeding over winter. If construction is to take place over the winter months, we recommend that the PUC require a Winter Construction Plan be filed prior to issuing Dakota Access a permit. That testimony provided several examples of industry standard documents that include recommendations for the development of project-specific winter construction plans.

In several portions of the SWPPP, erosion and sediment control installation (both timing and frequency) are left to the discretion of the Environmental Inspector. This could create an inconsistency as there are multiple Environmental Inspectors per spread, and multiple spreads across the Project. Specifically installation of Temporary Slope Breakers, Permanent Slope Breakers, and Temporary Trench Plugs should be standardized with the opportunity for changes based on site conditions and in consultation with agency representatives, when indicated. Industry standards call for approximate spacing versus percent slope.

For example:
Industry standards hold that **temporary slope breakers** should be installed to minimize concentrated or sheet-flow runoff in disturbed areas in accordance with the following maximum-allowable spacing.

Slope (%)	Approximate Spacing (ft)
5-15%	300ft
>15-30%	200ft
>30%	100ft

Temporary trench plugs should be installed at the edge of wetlands. Where a waterbody is located within a wetland, install trench breakers at the wetland edge.

Slope (%)	Approximate Spacing (ft)
5-15%	300ft
>15-30%	200ft
>30%	100ft

The Dakota Access SWPPP only calls out temporary trench plugs adjacent to waterbodies or drain tiles. It again leaves the frequency of installation to the EI or CI, which could create inconsistencies.

For example:

Permanent slope breakers should be installed to minimize concentrated or sheet-flow runoff in disturbed areas in accordance with the following maximum-allowable spacing.

Slope (%)	Approximate Spacing (ft)
5-15%	300ft
>15-30%	200ft
>30%	100ft

Although special pipeline construction techniques for wetlands and waterbodies are called out in the Revised Application (sections 17.1, 17.1.1, 17.2, and 17.2.1), they are not mentioned in the SWPPP.

I recommend that a master waterbody and wetland crossing table be included in the SWPPP with milepost or stationing indicating the features' exact locations. The Revised Application mentions this is located in Exhibit C. Because the SWPPP is the living document during construction, I recommend that the table in Application Exhibit C be added to the SWPPP as an appendix.

Although the PUC Draft Application describes the open-cut, flume, and dam and pump special construction techniques at waterbody crossings, it does not specifically call out the locations where these techniques will be used. I recommend that the crossing method be indicated in the master waterbody table with an alternative method also stated. In this way the Environmental Inspector can make recommendations based on the method that is planned.

The Revised Application does not define minor or intermediate waterbody crossings, which are typically defined by their crossing width. Along with these crossing widths come standard timing restrictions for open cut or dry crossing methods. I recommend defining minor, intermediate, and major waterbody crossings by crossing width and assigning a timing restriction. These would not apply to HDD crossings.

	Crossing Length	Timing Restriction
Minor	<10'	< 24 hours
Intermediate	10' – 100'	< 48 hours
Major	>100'	< 72 hours or custom restriction.

Decisions regarding the application of mulch to the right-of-way are delegated to the Environmental Inspector. I recommend specifying a slope, such as 5% and greater, to apply mulch. By leaving this to the Environmental Inspector's discretion, this could result in inconsistency throughout the project.

The SWPPP calls for an inspection at least weekly. This should be clarified to be once every seven calendar days according to Section 3.12 of the South Dakota

General Stormwater Permit. "Weekly" could be misinterpreted as "once per calendar week," which could result in inspections occurring as many as 14 days apart.

Q: Did you review section 16.1 of the Revised Application that discusses expected impacts to vegetation from construction of the pipeline and Dakota Access's plans for mitigating these impacts?

A: Yes

Q: In your opinion, do the construction techniques and mitigation measures identified by Dakota Access adequately minimize the impacts to vegetation?

A: Yes, the Revised Application adequately describes industry standards of topsoil segregation.

Q: Do you have any additional recommendations for mitigation measures in order to minimize impacts to vegetation?

A: The Revised Application has no mention of cleaning stations to avoid the spread of noxious weeds/invasive species. A typical recommendation is for equipment cleaning stations to be staged at the entry and exit of known noxious weed areas. Typical techniques at cleaning stations include compressed air pressure and brushes. Equipment should be thoroughly cleaned prior to entry and exit of noxious weed areas.

Mechanical control (e.g., mowing or disking) can also be an effective control measure for annual weed species. The efficacy of mechanical control measures is dependent upon proper timing to cut the vegetation prior to the maturation of seed and may require multiple treatments during the growing season. The NRCS or local county authorities should be consulted regarding management of noxious weeds.

Q: Did you review sections 17.1 and 17.2 of the Revised Application that discuss expected impacts to waterbodies from construction of the pipeline and Dakota Access's plans for mitigating these impacts?

A: Yes

Q: In your opinion, do the construction techniques and mitigation measures identified by Dakota Access adequately minimize the impacts to waterbodies?

A: Several recommendations for open-cut and dry crossing methods (dam and pump, flume) are included in this testimony.

Q: Do you have any additional recommendations for mitigation measures in order to minimize impacts to waterbodies?

A: Excavated material from the stream should be set back further than the ordinary high water mark. Typically additional temporary workspace may be used for spoil storage. Industry standards typically place the edge of the workspace at 50' back from the ordinary high water mark, as well as in an area with relatively little slope (less than 5%).

The Revised Application does not describe in-stream activities.

- Excavating equipment should operate from one or both banks, without entering the stream. If equipment must encroach into the stream it should operate on clean construction mats. Material removed from the stream should be placed on the banks in spoil containment areas.
- If trench dewatering is necessary, the pump intake should be suspended off the trench bottom and dewatering will take place into a sediment filter bar or a straw bale dewatering structure. The trench should be dewatered in such a manner that no heavily silt-laden water flows into streams and wetlands.
- Backfill material should consist of the spoil material from the trench unless otherwise specified in state and federal permits. In-stream trenches should be returned to pre-construction contours.

Dam and pump

- Stream flow should be pumped across the construction area through a hose and will be discharged onto an energy-dissipation device.
- Pumps should have a capacity greater than the anticipated stream flow.
- A backup pump of equal or greater capacity will be on-site at all times in the event that the primary pump fails.
- Standing water that is isolated in the construction area by the dams or any stream water that leaks around the dams or seeps from the ground into the trench during construction will be pumped into a sediment filter or a straw bale dewatering structure located in an upland area.

Flume

- Flumes should be sufficient diameter to transport maximum seasonal flows.
- The upstream and downstream ends of the flume(s) will be incorporated into dams made of sand bags and plastic sheeting (or equivalent).

I recommend that a master waterbody and wetland crossing table be included in the SWPPP with milepost or stationing calling their exact locations. The PUC Draft Application mentions this is located in Exhibit C. As the SWPPP is the living document in the field, I recommend it be added to the SWPPP as an appendix.

Although the Revised Application describes the open-cut, flume, and dam and pump special construction techniques, it does not specifically call out the locations at which these techniques will be used. I recommend that the crossing method be called out with an alternative method in place. This way the Environmental Inspector can make recommendations based on the method that is planned.

The PUC Draft Application does not define minor or intermediate waterbody crossings, which are typically defined by their crossing width. Along with these crossing widths come standard timing restrictions for open cut or dry crossing methods. I would recommend defining minor, intermediate, and major waterbody

crossings by crossing width and assigning a timing restriction. These would not apply to HDD crossings.

	Crossing Length	Timing Restriction
Minor	<10'	< 24 hours
Intermediate	10' – 100'	< 48 hours
Major	>100'	< 72 hours or custom restriction.

Q: Are Dakota Access's proposed construction techniques for waterbody crossings consistent with industry standard practices?

A: The construction practices stated in the Revised Application are typical.

Q: Do you have any concerns with the proposed waterbody crossing construction techniques proposed by Dakota Access? If so, please explain and provide any recommendations you have for addressing your concerns.

A: See recommendations.

Q: Did you review Dakota Access's Horizontal Directional Drill (HDD) Contingency Plan?

A: Yes.

Q: In your opinion, does the HDD Contingency Plan adequately mitigate the impact to waterbodies should an inadvertent release occur?

A: Yes, however I have some recommendations. See below.

Q: Do you have any recommended modifications for the HDD contingency plan? If so, please explain.

A: I recommend that the construction contractor notify the CI or EI when there is a loss of pressure. This should trigger an inspection by the EI of the HDD path. At this point the bentonite slurry should be thickened. It's possible that the drill will lose pressure and fill a void in the substrate.

The construction contractor should have containment BMPs for inadvertent releases in open water. I recommend that silt curtains remain on site and available. The contractor should plan on having a small boat available in order to deploy a silt curtain around an inadvertent release.

Q: Did you review the Draft Spill Prevention, Control, and Countermeasures Plan (SPCC Plan)?

A: Yes.

Q: Is Dakota Access required by law or regulation to maintain an SPCC Plan for both construction activities and operation of the pipeline? If so, please explain what laws and regulations apply.

A: South Dakota does not have a counterpart to the federal SPCC Plan rules.

Q: In your opinion, does the SPCC plan comply with the applicable laws and regulations?

A: Yes.

Q: Do you have any recommended modifications for Dakota Access's SPCC Plan? If so, please explain.

A: I recommend that each construction spread identify a separate spill coordinator.

Q: Does this conclude your testimony?

A: Yes.

Ryan Ledin

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an ERM Group company

Ryan is an Associate Consultant in Natural Resource Group, LLC's (NRG) Minneapolis office. He has been working in the industry since 2010 and specializes in environmental permitting and reviews, regulatory compliance, and environmental inspection and monitoring. Ryan has experience with National Pollutant Discharge Elimination System (NPDES) permitting throughout the United States; conducting dig site and regulatory analyses; preparing environmental reports, and drafting Public Service Commission (PSC) route and corridor applications; and compliance monitoring on Federal Energy Regulatory Commission (FERC)-regulated projects. Ryan has certifications in Erosion Control Inspection/Installation and the Design of Construction Stormwater Pollution Prevention Plans.

Selected Project Experience

- Alliance Pipeline, L.P., Tioga Lateral Project, 2012 to Present, 80 miles of natural gas pipeline and a new compressor station in North Dakota: Construction Compliance Coordinator responsible for providing project support, preparing variance request to the FERC, and Environmental Inspector's daily reporting.

- Enable Midstream Partners, LP, Bear Den Project (Phase 1 and 2), 2012 to Present, 68 miles of 3- and 6-inch-diameter welded steel pipeline and 3- and 4-inch-diameter composite pipeline, 31 new Lease Automatic Custody Transfer units in North Dakota: Project team member responsible for sections of the environmental assessment (EA) and construction feasibility study. Construction Compliance Coordinator responsible for providing project support, preparing variance request, Environmental Inspector's daily reporting, and periodic environmental inspection.

- ONEOK Sterling III Pipeline LLC, Sterling III Pipeline Project, 2013, 549 miles of 16-inch-diameter natural gas liquids pipeline in Oklahoma and Texas: Project team member responsible for Environmental Training, project orientation for Environmental Inspectors, and Environmental Inspection.

- Enbridge – Line 61 Mainline Enhancement, 2012 to Present, Expansion of facilities and various pump stations along the Line 61 route: Project team member responsible for completing permit applications and conduct environmental reviews.

- Permitting and Environmental Reviews: Project team member responsible for completing permit applications and conducting environmental reviews for multiple clients, including but not limited to Alliance, Enbridge Energy, Kinder Morgan, Koch, Magellan, MidAmerican Energy, and ONEOK.

- NPDES Permitting: Project team member responsible for NPDES permitting for projects in Iowa, Illinois, Indiana, Missouri, Minnesota, Montana, North Dakota, Ohio, Oklahoma, South Dakota, Texas, and Wisconsin.

- Environmental Inspection and Monitoring: Project team member responsible for post-construction inspection for ONEOK – Rockies Midstream gathering line system in North Dakota and Montana, daily reporting to office staff, and desktop review/map interpretation.

- Dig Package Processing: Project team member responsible for conducting preliminary dig site analyses, preparing regulatory checklists, interpreting maps, preparing site-specific environmental reports, and drafting various local, state, and U.S. Army Corps of Engineers (COE) permits and notifications.

Education and Training

- B.S., Geoscience/Environmental Science, Winona State University, Minnesota, 2010
- Erosion Control Installer/Inspector Certification, University of Minnesota
- Design of Construction Stormwater Pollution Prevention Plans Certification, University of Minnesota
- Natural Heritage Inventory Data, Wisconsin Department of Natural Resources
- Montana Department of Environmental Quality – BMP 301 – Conducting Storm Water Compliance Evaluation Inspections for Construction Activities
- Experience with ArcView GIS software, Trimble GPS/PDA, and Microsoft Office