

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION BY SCS CARBON TRANSPORT LLC
FOR A PERMIT TO CONSTRUCT A CARBON DIOXIDE TRANSMISSION
PIPELINE**

DOCKET NO. HP22-001

**Direct Testimony of Jaron Condley
On Behalf of the Staff of the South Dakota Public Utilities Commission
June 23, 2023**

1 **Q: Please state your name and business address.**

2
3 A: Name: Jaron Condley
4 Business address: 414 E. Clark St, Akeley-Lawrence Science Center, Vermillion,
5 SD
6

7 **Q: Describe your educational background.**

8
9 A: I received a Bachelor of Science degree in Geology from Arkansas Tech
10 University in 2016. I have two years of graduate level Geology and Hydrology
11 courses from University of Arkansas.
12

13 **Q: By whom are you now employed?**

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15 A: I am employed by the Geological Survey Program in the South Dakota
16 Department of Agriculture and Natural Resources. We are also referred to as the
17 South Dakota Geological Survey.
18

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

21
22 A: Conducting hydrogeologic studies on aquifers in eastern South Dakota;
23
24 Mapping bedrock, surface geology, and ground water resources in eastern South
25 Dakota;
26
27 Water quality assessments of ground water and surface water in eastern South
28 Dakota;
29
30 Project coordination and management for the Big Sioux Water Quality Impact
31 Study.
32
33

34 **Q: What Professional Credentials do you hold?**

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36 A: I have been investigating and mapping surface geology, bedrock geology, and
37 ground water resources in South Dakota for five years. I have conducted these
38 studies in several counties across eastern South Dakota to determine
39 characteristics of ground water movement, aquifer recharge rates, contaminate
40 transport, water quality, subsurface geology, and surface geology. I am currently
41 an Environmental Scientist II within the South Dakota Geological Survey. I plan
42 and direct the activities for county-wide geologic/hydrogeologic studies, as well
43 as for the Big Sioux Water Quality Impact Study. These projects listed provide
44 information to regulators, planners, and engineers at the federal, state, and local

1 levels to assist them in making informed decisions regarding the development
2 and protection of the State's natural resources.

3
4 **Q: On whose behalf was this testimony prepared?**

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6 A: I prepared this testimony on behalf of the Staff of the South Dakota Public
7 Utilities Commission.

8
9 **Q: Have you reviewed Section 5.1 of the Application for Summit Carbon
10 Solutions Pipeline (Project)?**

11
12 A: Yes.

13
14 **Q: To the best of your knowledge, does Section 5.1 of the Application properly
15 summarize the geologic formations to be crossed by the Project?**

16
17 A: For the most part. The discussion in section 5.1 adequately describes the glacial
18 sediment having considerable thickness overlying the bedrock geologic
19 formations, which in turn provides low risk for any mass movement processes at
20 the depth to which the pipeline will be installed. This section cites that, "Karst in
21 the area is described as having fissures, tubes, and caves less than 1000 feet
22 long and 50 feet or less vertical extent...", and there is no known karst
23 topography along the proposed pipeline route. The Niobrara Formation is the
24 formation that is cited in the application as having karst features, but the Niobrara
25 Formation is greater than 50 feet deep across the proposed pipeline route. There
26 wouldn't be any expected karst features or karst topography impacting the
27 pipeline. Other than the karst discussion, SCS adequately describes the geology
28 for the purpose of a shallow pipeline installation.

29
30 **Q: Does the Project cross any geologic formations that may pose a risk to the
31 pipeline? Please explain.**

32
33 A: I am not aware of any geologic formations crossed by the pipeline route that
34 would pose a risk to the pipeline stability. The pipeline crosses areas in Beadle,
35 Spink, Hand, Brown, Edmunds, and McPherson Counties where the Pierre Shale
36 is less than 25 feet from the surface, which could potentially have some slumping
37 occurring if the pipeline was installed on slopes where the Pierre Shale is
38 outcropping. The majority of the pipeline route crosses stable glacial sediments
39 and alluvial deposits.

40
41 **Q: Have you reviewed Section 5.2 of the Application for the Project?**

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43 A: Yes.

44
45 **Q: To the best of your knowledge, does Section 5.2 of the Application properly
46 summarize the hydrology in the Project area?**

1
2 A: No. Section 6.2 leaves out several major surficial aquifers that the proposed
3 pipeline route crosses; including the Vermillion East Fork, North Skunk Creek,
4 Elm, and the Highmore-Blunt aquifers. SCS does list the Spring Creek aquifer
5 and the Big Sioux aquifer as two of their major aquifers encountered in the
6 pipeline route, but they also list the Dakota and Niobrara Formations, which are
7 buried under significant low-permeability glacial sediments and shouldn't be
8 listed as aquifers crossed by the pipeline route. Section 6.2 also states that most
9 aquifers are more than 50 feet deep in the proposed pipeline route, which is
10 simply not the case. The Vermillion East Fork, North Skunk Creek, Elm,
11 Highmore-Blunt, Spring Creek, and Big Sioux aquifers are all surficial aquifers
12 that are at or very near land surface. Another issue is seen on page 43 of the
13 application. The application states, "The Project crosses portions of 18 counties
14 and several aquifer systems consisting of the same unconsolidated material,
15 sand, gravel, and a portion of the Sioux Quartzite in Lake County.". There is no
16 Sioux Quartzite in Lake County that is at or near land surface, and the proposed
17 pipeline route is near several SDGS test holes that indicate the Sioux Quartzite
18 ranges from 216 feet to over 740 feet below land surface.
19
20

21 **Q: Should the Commission be concerned about any aquifers or shallow**
22 **aquifers that the Project will cross? Please explain.**
23

24 A: The Vermillion East Fork, North Skunk Creek, Elm, and Big Sioux aquifers are
25 sources of drinking water for public water supply systems. However, if the
26 pipeline is constructed and operated properly it will minimize the potential risks to
27 these aquifers.
28

29 **Q: Did you provide any recommendations to Summit Carbon Solutions during**
30 **route development?**
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32 A: No.
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34 **Q: Does this conclude your testimony?**
35

36 A: Yes
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