

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 30869  
ORDER NO. 33529

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF SUMMIT CARBON STORAGE #1, LLC REQUESTING CONSIDERATION FOR THE GEOLOGIC STORAGE OF CARBON DIOXIDE IN THE BROOM CREEK FORMATION FROM THE MIDWEST CARBON EXPRESS PIPELINE IN THE STORAGE FACILITY LOCATED IN SECTIONS 31, 32, 33, AND 34, TOWNSHIP 142 NORTH, RANGE 87 WEST, SECTIONS 1, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 35, AND 36, TOWNSHIP 141 NORTH, RANGE 88 WEST, SECTIONS 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, AND 35, TOWNSHIP 141 NORTH, RANGE 87 WEST, SECTIONS 1, 2, 3, AND 12, TOWNSHIP 140 NORTH, RANGE 88 WEST AND SECTIONS 4, 5, 6, AND 7, TOWNSHIP 140 NORTH, RANGE 87 WEST, MERCER, MORTON, AND OLIVER COUNTIES, ND PURSUANT TO NORTH DAKOTA ADMINISTRATIVE CODE CHAPTER 43-05-01.

ORDER OF THE COMMISSION

PROCEDURAL HISTORY:

(1) This cause came on for hearing at 9:00 a.m. on the 11th of June, 2024. The hearing ran June 11 through June 13, 2024.

(2) Summit Carbon Storage #1, LLC (SCS #1) made application to the Commission for an order requesting consideration for the geologic storage of carbon dioxide in the Broom Creek Formation from the Midwest Carbon Express Pipeline (MCE Pipeline) in the storage facility located in Sections 31, 32, 33, and 34, Township 142 North, Range 87 West; Sections 1, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 35, and 36, Township 141 North, Range 88 West; Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, and

35, Township 141 North, Range 87 West; Sections 1, 2, 3, and 12, Township 140 North, Range 88 West; and Sections 4, 5, 6, and 7, Township 140 North, Range 87 West, Mercer, Morton, and Oliver Counties, North Dakota, pursuant to North Dakota Administrative Code (NDAC) Chapter 43-05-01.

(3) SCS #1 submitted an application for a Storage Facility Permit and attachments pursuant to NDAC Section 43-05-01-05 and all other provisions of NDAC Chapter 43-05-01 as necessary.

(4) Case Nos. 30869, 30870, 30871, 30872, 30873, 30874, 30875, 30876, 30877, 30878, 30879, and 30880 were combined for the purposes of hearing.

(5) Case No. 30870, also heard on the June 11, 2024 docket, is a motion of the Commission to consider the amalgamation of storage reservoir pore space, pursuant to a Storage Agreement by SCS #1 for use of pore space falling within portions of Sections 31, 32, 33, and 34, Township 142 North, Range 87 West; Sections 1, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 35, and 36, Township 141 North, Range 88 West; Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35, Township 141 North, Range 87 West; Sections 1, 2, 3, and 12, Township 140 North, Range 88 West; and Sections 4, 5, 6, and 7, Township 140 North, Range 87 West, Mercer, Morton, and Oliver Counties, North Dakota, in the Broom Creek Formation, and to determine it has been signed, ratified, or approved by owners of interest owning at least sixty percent of the pore space interest within said lands, pursuant to North Dakota Century Code (NDCC) Section 38-22-10.

(6) Case No. 30871, also heard on the June 11, 2024 docket, is a motion of the Commission to determine the amount of financial responsibility required of SCS #1 for the geologic storage of carbon dioxide from the MCE Pipeline in the storage facility located in Sections 31, 32, 33, and 34, Township 142 North, Range 87 West; Sections 1, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 35, and 36, Township 141 North, Range 88 West; Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35, Township 141 North, Range 87 West; Sections 1, 2, 3, and 12, Township 140 North, Range 88 West; and Sections 4, 5, 6, and 7, Township 140 North, Range 87 West, Mercer, Morton, and Oliver Counties, North Dakota, in the Broom Creek Formation, pursuant to NDAC Section 43-05-01-09.1.

(7) Case No. 30872, also heard on the June 11, 2024 docket, is a motion of the Commission to consider establishing the field and pool limits for lands located in Sections 31, 32, 33, and 34, Township 142 North, Range 87 West; Sections 1, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 35, and 36, Township 141 North, Range 88 West; Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35, Township 141 North, Range 87 West; Sections 1, 2, 3, and 12, Township 140 North, Range 88 West; and Sections 4, 5, 6, and 7, Township 140 North, Range 87 West, Mercer, Morton, and Oliver Counties, North Dakota, subject to the application of SCS #1 for the geologic storage of carbon dioxide in the Broom Creek Formation, and enact such special field rules as may be necessary.

(8) Case No. 30873, also heard on the June 11, 2024 docket, is an application by Summit Carbon Storage #2, LLC (SCS #2) for an order requesting consideration for the geologic storage of carbon dioxide in the Broom Creek Formation from the MCE Pipeline in the storage facility

located in Sections 27, 28, 29, 32, 33, 34, and 35, Township 143 North, Range 88 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, and 36, Township 142 North, Range 88 West; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, and 31, Township 142 North, Range 87 West; and Sections 1, 2, and 3, Township 141 North, Range 88 West, Mercer and Oliver Counties, North Dakota, pursuant to NDAC Chapter 43-05-01.

(9) Case No. 30874, also heard on the June 11, 2024 docket, is a motion of the Commission to consider the amalgamation of storage reservoir pore space, pursuant to a Storage Agreement by SCS #2 for use of pore space falling within portions of Sections 27, 28, 29, 32, 33, 34, and 35, Township 143 North, Range 88 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, and 36, Township 142 North, Range 88 West; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, and 31, Township 142 North, Range 87 West; and Sections 1, 2, and 3, Township 141 North, Range 88 West, Mercer and Oliver Counties, North Dakota, in the Broom Creek Formation, and to determine it has been signed, ratified, or approved by owners of interest owning at least sixty percent of the pore space interest within said lands, pursuant to NDCC Section 38-22-10.

(10) Case No. 30875, also heard on the June 11, 2024 docket, is a motion of the Commission to determine the amount of financial responsibility required of SCS #2 for the geologic storage of carbon dioxide from the MCE Pipeline in the storage facility located in Sections 27, 28, 29, 32, 33, 34, and 35, Township 143 North, Range 88 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, and 36, Township 142 North, Range 88 West; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, and 31, Township 142 North, Range 87 West; and Sections 1, 2, and 3, Township 141 North, Range 88 West, Mercer and Oliver Counties, North Dakota, in the Broom Creek Formation, pursuant to NDAC Section 43-05-01-09.1.

(11) Case No. 30876, also heard on the June 11, 2024 docket, is a motion of the Commission to consider establishing the field and pool limits for lands located in Sections 27, 28, 29, 32, 33, 34, and 35, Township 143 North, Range 88 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, and 36, Township 142 North, Range 88 West; Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, and 31, Township 142 North, Range 87 West; and Sections 1, 2, and 3, Township 141 North, Range 88 West, Mercer and Oliver Counties, North Dakota, subject to the application of SCS #2 for the geologic storage of carbon dioxide in the Broom Creek Formation, and enact such special field rules as may be necessary.

(12) Case No. 30877, also heard on the June 11, 2024 docket, is an application by Summit Carbon Storage #3, LLC (SCS #3) for an order requesting consideration for the geologic storage of carbon dioxide in the Broom Creek Formation from the MCE Pipeline in the storage facility located in Section 36, Township 143 North, Range 87 West; Sections 19, 20, 21, 28, 29, 30, 31, 32, 33, 34, 35, and 36, Township 143 North, Range 86 West; Sections 1, 2, 11, 12, 13, 14, and 24, Township 142 North, Range 87 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, and 35, Township 142 North, Range 86 West; and Sections 6, 7, 17, 18, 19, and 20, Township 142 North, Range 85 West, Oliver County, North Dakota, pursuant to NDAC Chapter 43-05-01.

(13) Case No. 30878, also heard on the June 11, 2024 docket, is a motion of the Commission to consider the amalgamation of storage reservoir pore space, pursuant to a Storage Agreement by SCS #3 for use of pore space falling within portions of Section 36, Township 143 North, Range 87 West; Sections 19, 20, 21, 28, 29, 30, 31, 32, 33, 34, 35, and 36, Township 143 North, Range 86 West; Sections 1, 2, 11, 12, 13, 14, and 24, Township 142 North, Range 87 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, and 35, Township 142 North, Range 86 West; and Sections 6, 7, 17, 18, 19, and 20, Township 142 North, Range 85 West, Oliver County, North Dakota, in the Broom Creek Formation, and to determine it has been signed, ratified, or approved by owners of interest owning at least sixty percent of the pore space interest within said lands, pursuant to NDCC Section 38-22-10.

(14) Case No. 30879, also heard on the June 11, 2024 docket, is a motion of the Commission to determine the amount of financial responsibility required of SCS #3 for the geologic storage of carbon dioxide from the MCE Pipeline in the storage facility located in Section 36, Township 143 North, Range 87 West; Sections 19, 20, 21, 28, 29, 30, 31, 32, 33, 34, 35, and 36, Township 143 North, Range 86 West; Sections 1, 2, 11, 12, 13, 14, and 24, Township 142 North, Range 87 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, and 35, Township 142 North, Range 86 West; and Sections 6, 7, 17, 18, 19, and 20, Township 142 North, Range 85 West, Oliver County, North Dakota, in the Broom Creek Formation, pursuant to NDAC Section 43-05-01-09.1.

(15) Case No. 30880, also heard on the June 11, 2024 docket, is a motion of the Commission to consider establishing the field and pool limits for lands located in Section 36, Township 143 North, Range 87 West; Sections 19, 20, 21, 28, 29, 30, 31, 32, 33, 34, 35, and 36, Township 143 North, Range 86 West; Sections 1, 2, 11, 12, 13, 14, and 24, Township 142 North, Range 87 West; Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, and 35, Township 142 North, Range 86 West; and Sections 6, 7, 17, 18, 19, and 20, Township 142 North, Range 85 West, Oliver County, North Dakota, subject to the application of SCS #3 for the geologic storage of carbon dioxide in the Broom Creek Formation, and enact such special field rules as may be necessary.

(16) The record in these matters was left open to receive additional information from SCS #1, SCS #2, and SCS #3. Such information was received on June 24, 2024 and the record was closed.

(17) The Commission gave at least a thirty-day public notice and comment period for the draft storage facility permit and issued all notices using methods required of all entities under NDCC Section 38-22-06 and NDAC Section 43-05-01-08. Publications were made in The Bismarck Tribune on April 17, May 1, and May 8, 2024, the Center Republican on April 18, May 9, and May 16, 2024, The Mandan News on April 19, May 3, and May 10, 2024, and The Hazen Star on May 2 and May 9, 2024. SCS #1 hand-delivered affidavits to the Commission on June 11, 2024 stating it provided at least a forty-five day notice as required by NDAC Section 43-05-0108. The comment period for written comments ended at 5:00 PM CDT June 10, 2024. The hearing was open to the public to appear and provide comments.

(18) Counsel for the following landowners (the Landowner Intervenors) filed petitions to intervene in Case Nos. 30869, 30870, 30871, 30872, 30873, 30874, 30875, 30876, 30877, 30878, 30879, and 30880.

- (a) The Swenson Living Trust (Swenson Trust) filed a petition on April 18, 2024. The Swenson Trust owns the SE/4 of Section 27, Township 143 North, Range 88 West and the W/2 NE/4 of Section 14, Township 142 North, Range 88 West, Mercer County, North Dakota. The Swenson Trust owns Outlot B of the E/2 NW/4 Less Lot 1 of Section 7, the SW/4 of Section 9, the SE/4 of Section 15, Section 21, and the NW/4 of Section 22, Township 142 North, Range 87 West, Oliver County, North Dakota.
- (b) Michael and Bonnie Haupt (Haupt) filed a petition on May 15, 2024. Haupt owns the SW/4 of Section 27 and the SE/4 of Section 35, Township 141 North, Range 88 West, Mercer County, North Dakota.
- (c) Paul and Christy Metz (Metz) filed a petition on May 15, 2024. Metz owns Lot 1 of the N/2 SE/4 of Section 4, Township 141 North, Range 87 West, Oliver County, North Dakota.
- (d) John Jochim (Jochim) filed a petition on May 15, 2024. Jochim owns the NW/4 of Section 24, Township 142 North, Range 88 West, Mercer County, North Dakota.
- (e) Kirk, Linda, and Allen Maize (Maize) filed a petition on May 16, 2024. Maize owns the S/2 SE/4 of Section 20, Township 141 North, Range 87 West, Oliver County, North Dakota.
- (f) Glenn and Lisa Gerving (Gerving) filed a petition on May 16, 2024. Gerving owns the E/2 SE/4 of Section 34 and the S/2 SW/4 of Section 35, Township 142 North, Range 87 West, Oliver County, North Dakota and the south 54 acres of the S/2 S/2 of Section 13 and the S/2 SW/4 NW/4 and S/2 SW/4 of Section 24, Township 141 North, Range 88 West, Mercer County, North Dakota.
- (g) JoLene M. Rust (Rust) filed a petition on May 16, 2024. Rust owns the SW/4 of Section 13, Township 142 North, Range 88 West, Mercer County, North Dakota.
- (h) Michael Bauman (Bauman) filed a petition on May 16, 2024. Bauman owns the SW/4 of Section 24, Township 142 North, Range 88 West, Mercer County, North Dakota.
- (i) Gary A. Smith and Cassie Smith (Smith) filed a petition on May 16, 2024. Smith owns the NE/4 and NW/4 of Section 15, the NE/4 of Section 20, the SE/4 including Lot A of Section 22, and the W/2 of Section 23, Township 142 North, Range 87 West, Oliver County, North Dakota.

- (j) Kevin and Kimberly Kraft (Kraft) filed a petition on May 22, 2024. Kraft owns a tract of land located in the S/2 (Document No. 80055 at Oliver County) and the SE/4 less and except the previously stated tract in Section 27, Township 142 North, Range 87 West, Oliver County, North Dakota.
- (k) Charmayne Liebelt (Liebelt) filed a petition on May 24, 2024. Liebelt owns the S/2 SW/4 of Section 32, Township 143 North, Range 86 West, Oliver County, North Dakota.

(19) Counsel for Intervenor Swenson Trust filed a Motion to Continue Hearing and Request for Scheduling Conference on April 25, 2024. Counsel for SCS #1, SCS #2, and SCS #3 filed a response on April 30, 2024 requesting the Commission deny Intervenor Swenson Trust's Motion for Continuance.

(20) Counsel for Intervenor Swenson Trust filed a Motion to Expedite Discovery on May 16, 2024. Counsel for SCS #1, SCS #2, and SCS #3 filed a response on May 28, 2024 requesting the Commission deny Intervenor Swenson Trust's Motion to Expedite Discovery.

(21) Counsel for Minnkota Power Cooperative, Inc. (Minnkota) petitioned to intervene in Case Nos. 30869, 30870, 30871, 30872, 30873, 30874, 30875, 30876, 30877, 30878, 30879, and 30880 on May 20, 2024. Minnkota holds three carbon dioxide storage facility permits, in Oliver County, North Dakota, the Minnkota Center MRYS Broom Creek Storage Facility #1 (Order No. 31584 entered in Case No. 29030), the Minnkota Center MRYS Deadwood Storage Facility #1 (Order No. 31587 entered in Case No. 29033), and the DCC West Broom Creek Storage Facility #1 (Order No. 32806 entered in Case No. 30122), herein referred to as Project Tundra. The location of Project Tundra is located immediately adjacent to the east of SCS #1, SCS #2, and SCS #3's proposed injection sites. Minnkota seeks to intervene to protect its interest in Project Tundra.

(22) Counsel for SCS #1, SCS #2, and SCS #3 filed a consolidated response to the Landowner Intervenor's Petitions to Intervene on May 28, 2024 requesting the Commission deny Swenson Trust's Petition to Intervene and approve the remaining Landowner Intervenor's Petitions to Intervene only in the proposed storage facilities in which they own acreage within the horizontal boundaries of the storage facility proposed and/or within the one-half mile notice area surrounding the storage facility proposed. The response stated the Landowner Intervenor's own the following acreage:

- (a) Swenson Trust owns approximately 359.4 acres located within the horizontal boundaries of the storage facility proposed by SCS #2 and/or the one-half mile notice area surrounding the storage facility proposed by SCS #2.
- (b) Haupt owns approximately 160 acres located within the horizontal boundaries of the storage facility proposed by SCS #1 and/or the one-half mile notice area surrounding the storage facility proposed by SCS #1.
- (c) Metz owns approximately 18.88 acres located within the horizontal boundaries of the storage facility proposed by SCS #1.

- (d) Jochim owns approximately 160 acres located within the horizontal boundaries of the storage facility proposed by SCS #2.
- (e) Maize owns approximately 80 acres located within the horizontal boundaries of the storage facility proposed by SCS #1.
- (f) Gerving owns approximately 393.5 acres located within the horizontal boundaries of the storage facility proposed by SCS #1 and/or the one-half mile notice area surrounding the storage facility proposed by SCS #1.
- (g) Rust owns approximately 160 acres located within the horizontal boundaries of the storage facility proposed by SCS #2.
- (h) Bauman owns approximately 140 acres located within the horizontal boundaries of the storage facility proposed by SCS #2.
- (i) Smith owns approximately 15 acres located within the horizontal boundaries of the storage facility proposed by SCS #2 and/or the one-half mile notice area surrounding the storage facility proposed by SCS #2.
- (j) Kraft owns approximately 174.58 acres in the vicinity of the proposed carbon dioxide storage facilities but owns no acreage located within the horizontal boundaries and/or the one-half mile notice area surrounding the storage facilities.
- (k) Liebelt owns approximately 80 acres located within the horizontal boundaries of the storage facility proposed by SCS #3.

(23) The Hearing Officer on May 31, 2024 granted the Landowner Intervenor's Petition to Intervene on a limited basis. Haupt, Metz, Maize, and Gerving are granted intervention as it relates to SCS #1 (Case Nos. 30869, 30870, 30871, and 30872). Swenson Trust, Jochim, Rust, Bauman, and Smith are granted intervention as it relates to SCS #2 (Case Nos. 30873, 30874, 30875, and 30876). Liebelt is granted intervention as it relates to SCS #3 (Case Nos. 30877, 30878, 30879, and 30880). Kraft's intervention will not be considered insofar as it falls outside the lands proposed by SCS #1, SCS #2, and SCS #3.

(24) The Hearing Officer on June 3, 2024 granted Minnkota's Petition to Intervene, however at the hearing Minnkota must demonstrate its correlative rights are impacted by SCS #1, SCS #2, and SCS #3's proposed storage facilities.

(25) Counsel for the Landowner Intervenor's submitted a Request for Telephonic Testimony on June 6, 2024. Counsel for SCS #1, SCS #2, and SCS #3 submitted a Request for Telephonic Testimony on June 7, 2024.

(26) The Hearing Officer granted Landowner Intervenor's and SCS #1, SCS #2, and SCS #3's Requests for Telephonic Testimony on June 7, 2024.

(27) The Hearing Officer denied Intervenor Swenson Trust's Motion to Continue Hearing, Request for Scheduling Conference, and Motion to Expedite Discovery on June 7, 2024. These motions were filed on the grounds that Intervenor Swenson Trust was not afforded adequate time to review, analyze, and assess the impacts the storage facility permit would have on Intervenor Swenson Trust's property. The following facts are relevant to the Commission's denial of the motions:

- (a) Swenson Trust was served notice of the hearing on April 16, 2024 pursuant to NDAC Section 43-05-01-08 by the applicant, SCS #2.
- (b) Swenson Trust's legal counsel, Braaten Law Firm, submitted an open records request to the Commission on June 14, 2023 requesting all documents and correspondence related to the SCS #1, SCS #2, and SCS #3 (collectively called Summit in Paragraphs (b) through (d)) storage facility permit applications and Commission staff provided Reservoir Characterization Using Epicentre (RESCUE) files from Petrel and Computer Modeling Group (CMG) software packages to Braaten Law Firm on June 23, 2023 as part of that request. RESCUE files are an open standard for the transfer of data from geologic models. The RESCUE files alongside the technical details within the storage facility permit applications could be used to evaluate and assess the impacts of the storage facility permits.
- (c) Braaten Law Firm, submitted a subsequent open records request to the Commission on August 24, 2023 requesting all new documents and correspondence related to the Summit storage facility permit applications and Commission staff provided the CMG DAT file, as part of that request by file transfer share on August 25, 2023. The CMG DAT file contains information about a numerical model used to review, analyze, and assess the impacts of the storage facility permits.
- (d) Braaten Law Firm submitted a subsequent open records request to the Commission on March 12, 2024. Commission staff responded on March 18, 2024 that the request was too broad. Braaten Law Firm responded on March 27, 2024 disagreeing the request was too vague but understanding the Commission's position and would respond accordingly. Braaten Law Firm submitted a later request on May 15, 2024 (Exhibit LO-83), requesting all electronic data files and load files related to the Summit applications for geochemical modeling, geological model, and numerical simulation, including all input files and geophysical logs. The Commission has discovered that an incorrect date was referenced in its response to the May 15, 2024 request asking for the CMG numerical reservoir simulation model files. The CMG numerical reservoir simulation model files were previously provided to Braaten Law Firm as part of the August 24, 2023 request instead of the referenced September 21, 2023 which was an open records request submitted by Braaten Law Firm requesting information on gas storage applications pursuant to NDCC Chapter 38-25.
- (e) If, as Braaten Law Firm contends, any of the open records requests were not fulfilled, Braaten Law Firm did not inform Commission staff that numerical modeling files



were not received and did not take any action under NDCC Chapter 44-04 including requesting an attorney general's opinion on the alleged denial pursuant to NDCC Section 44-04-21.1.

(28) Counsel for Minnkota filed a letter dated June 10, 2024 stating Minnkota and SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph) had reached an agreement with respect to Minnkota's concerns. Summit and Minnkota agreed to language that is being proposed to be added to SCS #3's Storage Agreement's Section 3.12 – Border Agreements. Minnkota no longer anticipates offering testimony in Case Nos. 30869, 30870, 30871, 30872, 30873, 30874, 30875, 30876, 30877, 30878, 30879, and 30880. Minnkota did not appear at the hearings on June 11 through June 13, 2024 to provide testimony and the language proposed in this letter was included in the amended Storage Agreement provided by SCS #3 on June 24, 2024.

(29) Counsel for the Landowner Intervenor filed a Motion to Compel on June 10, 2024. Counsel for SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph) testified at the hearing on June 11, 2024 that Summit did not have the opportunity to review the Motion to Compel yet but would respond. Counsel for Summit provided a response on June 20, 2024 requesting the Commission deny the Motion to Compel.

(30) The record in these matters was closed on June 24, 2024.

(31) Counsel for the Landowner Intervenor filed multiple motions and briefs after the record had closed. The Commission has recorded these motions but finds they are not part of the official record and sufficient information has not been provided to reconsider the prior denial noted in aforementioned Paragraph (27):

- (a) Counsel for the Landowner Intervenor filed an Objection to SCS #1, SCS #2, and SCS #3's submittal of supplements on June 27, 2024. Counsel for SCS #1, SCS #2, and SCS #3 filed a response on July 8, 2024 stating the Objection is meritless as the Commission could make a decision on the applications with or without the supplements provided on June 24, 2024.
- (b) Counsel for the Landowner Intervenor filed a Petition of Reconsideration of Denial of Motion to Continue Hearing on July 2, 2024. Counsel for SCS #1, SCS #2, and SCS #3 filed a response on July 12, 2024 requesting the Commission deny the request. Counsel for the Landowner Intervenor filed a subsequent response to SCS #1, SCS #2, and SCS #3 on July 18, 2024.
- (c) The Hearing Officer denied the Petition of Reconsideration of Denial of Motion to Continue Hearing on August 15, 2024 on the basis that sufficient information was not provided to reconsider the prior denial decision.
- (d) Counsel for the Landowner Intervenor filed a Motion for Supplemental Hearing and Motion to Compel SCS #1, SCS #2, and SCS #3 to produce discovery requests on August 29, 2024. Counsel for SCS #1, SCS #2, and SCS #3 filed a response on September 12, 2024 requesting the Commission deny both requests. Counsel for the

Landowner Intervenor subsequently submitted a brief to further support their Motion for Supplemental Hearing and Motion to Compel on September 18, 2024.

- (e) Counsel for the Landowners Intervenor filed declarations on November 4, 2024 indicating they have ran two versions of the model and are looking at submitting comments within the next 30 days on their model runs to the Commission. Counsel for SCS #1, SCS #2, and SCS #3 filed a response on November 12, 2024 requesting the Commission reject the Landowner Intervenor's attempts to stall the proceedings and deny their request for a supplemental hearing and proceed with a decision.
- (f) Counsel for the Landowner Intervenor filed a declaration on December 9, 2024 stating they submitted an open records request to the Commission for the model files on November 13, 2024 and received the files on November 20, 2024 by flash drive; that the Landowner Intervenor's expert confirmed the files received by the Commission were the same files received from the Energy and Environmental Research Center (EERC); and that Landowner Intervenor require additional time now that they have received the model files from the Commission. The Commission notes the Landowner Intervenor's filing from August 29, 2024 stated EERC provided the modeling files to the Landowner Intervenor's Counsel on July 2, 2024.

(32) As of June 24, 2024 the record was closed. The Motion to Compel seeks to admit evidence after the record was closed and is hereby denied. The Commission finds that Landowner Intervenor's Motion to Compel is untimely because it was filed after the Commission held an evidentiary hearing on SCS #1, SCS #2, and SCS #3's applications, and since then the record has been closed with respect to accepting evidence. As such, the Commission finds that Landowner Intervenor's Discovery request would not serve any purpose.

(33) The Motion for Supplemental Hearing also seeks to introduce evidence after the record was closed. Moreover, the motion seeks to require the production of evidence that the Commission has already provided to Counsel for the Landowner Intervenor. Landowner Intervenor dispute that the Commission provided this information. Notwithstanding Landowner Intervenor's argument, Counsel for them did not raise the issue until the hearings had begun. Following the initial open records request, Landowner Intervenor never informed the Commission it did not receive the materials or take any action under NDCC Chapter 44-04 including request an attorney general's opinion, arguing that the Commission failed to respond to its initial request for the production of the materials. The Commission stands by its position that it provided the information pursuant to the open records request. As such, Landowner Intervenor were in possession of the information before the hearings and had ample opportunity to consider it. The Motion for Supplemental Hearing is hereby denied.

(34) At the hearings and in their various motions the Landowner Intervenor argue the Commission has violated their constitutional rights including due process. As part of issuing this order, however, the Commission notes it does not determine the constitutionality of North Dakota statues and laws. The Commission finds NDCC Section 38-22-10 to be the current law.

**THE COMMISSION FINDS:****PUBLIC COMMENTS:**

(35) The Commission received a letter dated April 28, 2024 from Fay Horn (Horn) formerly known as Fay Hill of Washburn, North Dakota. The letter states Horn is strongly opposed to the proposed carbon dioxide storage facility as it could negatively affect the land, environment, and minerals. Horn also states that Summit Carbon Storage has a bad reputation with landowners, such as going onto property without consent. The Commission notes Horn was identified as a mineral owner or surface owner for the BK Fischer storage facility requiring notification by SCS #2.

SCS #1 provided supplements on June 24, 2024 including a response to Horn that applicants have acquired in excess of 92% of the pore space lease agreements across all three units with broad landowner support and have acquired 100% voluntary easements for its flow lines in the sequestration area. The Commission notes Exhibit 5A, 5B, and 5C show SCS #1, SCS #2, and SCS #3 have leased approximately 89.14%, 92.43%, and 96.77%, respectively, across the three proposed storage facilities. The Commission finds Horn provided no evidence to support her position that the carbon dioxide storage facility would negatively affect the land, environment, and minerals and finds the storage facility permit application as proposed will not endanger the environment or negatively affect the land or minerals located within the storage facility area.

(36) The Commission received a letter May 6, 2024 from Gary Boeckel (Boeckel) of Stanton, North Dakota. The letter states Boeckel is opposed to the storage of carbon dioxide because the roads will be ruined, and the other states should build their own storage facilities rather than send it to North Dakota. The Commission notes Boeckel was identified as a mineral owner or surface owner, for the BK Fischer storage facility requiring notification by SCS #2.

SCS #1 provided supplements on June 24, 2024 including a response to Boeckel that applicants have worked with and will continue working with the appropriate townships and counties regarding road use and road repair. The Commission notes it does not have jurisdiction over road use or road repair and NDCC Section 38-22-01 states in part, that it is in the public interest to promote the geologic storage of carbon dioxide and that doing so will help benefit the state and global environment by reducing greenhouse gas emissions.

(37) The Commission received a letter from the State Historical Society of North Dakota (SHPO) dated May 15, 2024 indicating it reviewed the application of SCS #1. SHPO stated seismic testing can adversely affect certain types of sensitive cultural sites and is requesting its office be contacted regarding areas to avoid prior to any seismic testing. Additionally, SHPO states a Class III (pedestrian survey) of cultural resources is underway for the pipeline but is unable to verify if the survey includes all the injection wells, monitoring wells, and any of the new ground disturbance associated with access to these wells and recommends each of those sites be surveyed and that the survey follow “North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects”.

SCS #1 was questioned by Commission staff on June 11, 2024 if they intended to meet SHPO’s requests. SCS #1 responded it would.

(38) The Commission received a similarly templated letter from five mineral owners listed below opposing the proposed storage facility permit because it will interfere and negatively impact their mineral right property interests. The mineral owners state that future development of their minerals will be more difficult, costly, and very likely unfeasible if the application is approved. If the application is allowed to proceed as proposed, Summit [sic; reference to Summit is equivalent to SCS #1] would be permitted to declare without challenge that minerals do not exist in the pore space or are of such little value as to not warrant compensation, which encourages a taking of property without compensation to the surface and mineral owner. Additionally, the mineral owners state that the proposal is in direct opposition to NDCC Section 47-31-08, which states, “In the relationship between a severed mineral owner and a pore space estate, this chapter does not change or alter the common law as of April 9, 2009, as it relates to the rights belonging to, or the dominance of, the mineral estate.” The mineral owners state that prior to any approval, SCS #1 must first be required to negotiate with them, as a mineral owner, a fair price for the severance or use of their property and any consequential impacts to their mineral interest.

- (a) A letter dated May 30, 2024 from Victorie Brown of Solomons, Maryland.
- (b) A letter dated June 7, 2024 from Mark Schultz of Reston, Virginia.
- (c) A letter dated June 8, 2024 from Brenda L. Lipp of Bismarck, North Dakota.
- (d) A letter dated June 9, 2024 from Eric Schultz of Almont, North Dakota.
- (e) A letter dated June 10, 2024 from Meda Schultz of Maple Valley, Washington.

SCS #1 filed a copy of the “Notice of Hearing” pursuant to NDAC Section 43-05-01-08(2) and the affidavit of service lists the five mineral owners or their addresses above as notified parties.

There has been no historic hydrocarbon exploration, production, or studies suggesting there is an economically viable supply of hydrocarbons from formations above or below the Broom Creek Formation within the proposed storage facility area. There has been historic production approximately 19 miles to the northwest of the storage facility from the Entze #29 1 well (File No. 7616). SCS #1 testified at the hearing and summarized in a provided supplement on June 24, 2024 that the storage facility area will not negatively impact mineral interests and future development. SCS #1 states that in the event hydrocarbons are discovered in commercial quantities below the Broom Creek Formation, a horizontal well could be used to produce the hydrocarbons while avoiding drilling through the carbon dioxide plume or a vertical well could be drilled using proper controls via increased drilling mud weight determined from real-time Broom Creek Formation bottom hole pressure data. SCS #1 also testified there are no existing mines that have plans to mine coal within the storage facility area during the project’s operational period.

NDCC Section 47-31-03, states “title to pore space in all strata underlying the surface of lands and waters is vested in the owner of the overlying surface estate.” The Commission notes that when the surface and mineral estate is severed, the surface estate owns the pore space and is compensated for storage. Pursuant to NDCC Section 38-22-08(6) if minerals are present in the pore space the mineral owner must be compensated. The Commission received no compelling information to

indicate the storage reservoir contains commercially valuable minerals, or that underlying or overlying minerals would be stranded.

(39) The Commission received a letter dated June 7, 2024 from Jason Pulver (Pulver) in support of the proposed carbon dioxide storage facility. Pulver is the surface owner for the W/2 of Section 17 and the S/2 of Section 18, Township 141 North, Range 87 West, Oliver County, North Dakota. Pulver states he supports the location of the TB Leingang injection site and carbon dioxide storage facility and approval of the permit. The Commission notes Pulver was identified as a surface owner for the proposed location of the injection site for the TB Leingang storage facility requiring notification by SCS #1.

(40) The Commission received an email on June 10, 2024 from Meda Schultz (Schultz) in general opposition of all three storage facility permit applications submitted by SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph). Schultz brings up the following concerns, not previously stated in the aforementioned Paragraph (38).

- (a) Schultz believes an agreement to Summit's proposal is a continuance to the ongoing reliance of the old, dying, and harmful oil, gas, and chemical industries. Schultz states it is time to look for new energy sources.
- (b) Schultz believes Summit's proposal puts North Dakota's safety at potential risk as carbon dioxide capture, transport, and storage has a limited history to demonstrate it can be done in a safe manner.
- (c) Schultz believes Summit's proposal allocates North Dakota's resources to other jurisdictions and owners, as the majority of the contributors come from out of state causing North Dakota's resources to be consumed for the benefit of those out-of state. Additionally, Summit is expected to receive an \$85 per metric ton tax credit but only provide \$0.50 per metric ton back to the property owner, resulting in further inequity.
- (d) Schultz believes Summit's proposal allows it to take what is not its to take. Summit plans to consume pore space that may be void or may contain other gases that could hold value, which should be retained by the existing surface or mineral owners.
- (e) Schultz questions who inherits the risk and cost after Summit is no longer a storage facility owner after a 10-year period as allowed by North Dakota law.

The Commission notes Schultz was identified as a mineral owner for the TB Leingang and BK Fischer storage facilities requiring notification by SCS #1 and SCS #2.

Summit provided supplements on June 24, 2024 including a response to Schultz, stating the project serves to support the bio-fuel and agricultural industries, not the oil, gas and chemical industries.

NDCC Section 38-22-10 states “If a storage operator does not obtain the consent of all persons who own the storage reservoir’s pore space, the commission may require that the pore space owned by nonconsenting owners be included in a storage facility and subject to geologic storage.”

NDCC Section 38-22-08(14) states “That all nonconsenting pore space owners are or will be equitably compensated.” Summit testified all pore space owners would be compensated in the same fashion regardless of if they signed a pore space lease. The Commission notes pore space owners within the storage facility will economically benefit from the development of their pore space resource for the storage of carbon dioxide.

The Commission notes the following in response to Schultz’s question related to who inherits the risk and cost after a storage facility is closed. NDCC Section 38-22-17(6) states in part, that once a certificate of project completion is issued, title to the storage facility and to the stored carbon dioxide is acquired by the state, including rights and interests in and all responsibilities associated with, the stored carbon dioxide; and monitoring and managing the storage facility is the state’s responsibility to be overseen by the Commission. Storage operators shall pay the Commission a fee, pursuant to NDCC Section 38-22-15, on each ton of carbon dioxide injected for storage to be deposited in the carbon dioxide storage facility trust fund. This special fund is appropriated to defray expenses the Commission may incur in long-term monitoring and management of a closed facility. The Commission notes that NDCC Section 38-22-17 states in part, that a certificate of project completion may not be issued until at least ten years after carbon dioxide injections end, provided the storage operator can show the carbon dioxide in the storage reservoir has become stable and is reasonably expected to remain within the storage reservoir boundary.

The information and opinions included in Schultz’s letter that were not herein addressed are either inapplicable, irrelevant to the application, unsubstantiated, or previously addressed.

(41) The Commission received an email from Dakota Resource Council (DRC) on June 10, 2024. DRC believes North Dakota’s amalgamation law is unconstitutional because equitable compensation is not a substitute for the safeguards guaranteed by the Constitution of North Dakota and NDCC Chapter 32-15, which require just compensation, by condemnation hearing with jury, to be paid for land or real property taken by eminent domain. Northwest Landowners Association has a pending lawsuit in district court on this issue. DRC is requesting the North Dakota Industrial Commission (NDIC) wait to rule on Case Nos. 30869-30880, or any other case until the courts determine the constitutionality of North Dakota’s amalgamation law.

SCS #1 provided supplements on June 24, 2024 including a response to DRC, stating the NDIC should continue to proceed according to the NDCC [sic; SCS #1 meant to reference NDCC Chapter 38-22] and that DRC’s comments are tantamount to judicial activism. The Commission notes the constitutionality of NDCC Section 38-22-10 has been previously responded to in Paragraph (34) above.

(42) The Commission received similarly templated emails from Emma Schmit and Janet Miller (Schmit and Miller) on June 10, 2024. They are in opposition to the three storage facility permits submitted by SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph) for the following reasons:

- (a) Schmit and Miller believe North Dakota's Class VI program has a notable gap from the Environmental Protection Agency (EPA) in addressing environmental justice concerns.
- (b) Schmit and Miller believe North Dakota should suspend further actions until the ongoing legal challenges to North Dakota's amalgamation laws reach a definitive resolution in Court to protect the interests and rights of all involved parties.
- (c) Schmit and Miller believe allowing Summit to annually store up to 18 million metric tons of carbon dioxide could severely disrupt industries that depend on carbon dioxide, such as fruit and vegetable preservation, beverage production, and pharmaceutical manufacturing.
- (d) Schmit and Miller believe Summit's applications, submitted on February 6, 2024, fail to acknowledge its expansion with additional ethanol plants and this change necessitates a more detailed review to ensure accurate and transparent information before any decisions are made.
- (e) Schmit and Miller also believe the environmental risks, including induced seismicity and leakage into water sources, are too high considering the long-term stability of carbon dioxide is not guaranteed and carbon capture storage technology is still evolving and unproven on the proposed scale and North Dakota should not bear the risk of this experimental approach.

The Commission notes that neither Schmit nor Miller were identified as a mineral owner or surface owner requiring notification for any of the three storage facilities.

Summit provided supplements on June 24, 2024 including a response to Schmit and Miller, stating it believes the NDIC has jurisdiction.

The Commission notes the following in response to Schmit and Miller's concerns relating to the addition of more ethanol plants since the applications were submitted on February 6, 2024:

Summit testified the applications are requesting commercial permits for operation and injection of carbon dioxide that allow the flexibility to receive carbon dioxide from a variety of industrial sources. Summit referenced Exhibit 3A that includes the addition of 27 ethanol plants to the revised Figure PS-2 included with the applications submitted on February 6, 2024. Summit explained the MCE Pipeline system is designed to accommodate a carbon dioxide stream that is at least 95% carbon dioxide with the anticipated stream being greater than 98.25% carbon dioxide once delivered to the storage facilities. Summit testified the 57 ethanol plants currently contracted emit approximately 16 million metric tons of carbon dioxide that could be captured.

NDAC Section 43-05-01-07.2 requires the Commission to prepare a draft permit and fact sheet when a storage facility permit application is complete. The description of the facilities and the quantity and quality of the carbon dioxide stream testified to reflect what was provided on the fact sheet for the draft permits.

NDAC Section 43-05-01-11.4 states in part “the storage operator shall prepare, maintain, and comply with a testing and monitoring plan to verify that the geological sequestration project is operating as permitted and is not endangering underground sources of drinking water.” Summit has submitted a testing and monitoring plan, as summarized in Table 5-2 of each application, that accounts for passive seismicity monitoring and leak detection monitoring at the well bore.

NDAC Section 43-05-01-14 requires the storage operator to have an integrated leak detection system and to report any leaks detected at the well or surface facilities. The submitted testing and monitoring plan accounts for leak detection monitoring at the well and surface facilities.

The information and opinions included in Schmit and Miller’s email that were not herein addressed are either inapplicable, irrelevant to the application, unsubstantiated, or previously addressed.

(43) The Commission received an email on June 10, 2024 from Kathy Carter (Carter) of Rockford, Iowa. Carter is in opposition to the three storage facility permits submitted by SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph). Carter questions whether anyone can be certain that carbon dioxide will stay within the pipeline, injection wells, and injection zone, notes Summit’s lack of experience with building a pipeline or injection wells, and the dangers of carbon dioxide creating carbonic acid as reasons for opposition.

The Commission notes Carter was not identified as a mineral owner or surface owner requiring notification for any of the three storage facilities.

Summit provided supplements on June 24, 2024 including a response to Carter, stating these concerns were addressed in its applications and through testimony at the hearings. The Commission agrees.

(44) The Commission received an email on June 10, 2024 from Lisa Ritzert (Ritzert). Ritzert is in opposition to the proposed storage facility. Ritzert believes carbon capture and sequestration is an underregulated industry that needs greater consideration for people, community, and resource protection and safety before pipelines of this nature can be considered. Ritzert states the intentions of these pipelines have not been clear and continues to change, but in any case, its clear monetary profits are being put ahead of people.

The Commission notes that Ritzert was not identified as a mineral owner or surface owner requiring notification for any of the three storage facilities.

SCS #1 provided supplements on June 24, 2024 including a response to Ritzert, stating it provided testimony that the flow lines that are part of the sequestration projects will be built in accordance with standards set forth in 49 CFR 195 (Code of Federal Regulations –Transportation of Hazardous Liquids by Pipeline).

The information and opinions included in Ritzert’s email are directed at the transportation of carbon dioxide by pipeline rather than on the storage of carbon dioxide.



(45) The Commission received an email on June 10, 2024 from Paul Schock (Schock) in support of the three storage facility permits submitted by SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph). Schock owns land in Sections 19 and 33, Township 142 North, Range 88 West, Mercer County, North Dakota. Schock stated Summit has been very transparent, open, and honest and believes the project will sustain and enhance the agricultural industry, provide jobs and tax revenue for the counties and state, and provide supplemental income to farmers and ranchers. The Commission notes Schock was identified as a surface owner for the BK Fischer storage facility requiring notification by SCS #2.

(46) The Commission received an email on June 10, 2024 from Gary and Carla Poeckes of Lake View Services, LLC (LVS), located in Beulah and Trenton, North Dakota, in support of the three storage facility permits submitted by SCS #1, SCS #2, and SCS #3 (collectively called Summit in this paragraph). LVS is a crane and trucking company that has been serving western North Dakota for 13 years and has worked with Summit for the past two years to maintain their well sites. LVS states Summit is easy to communicate with, pays its bills promptly, and is always willing to assist them.

(47) The Commission received a letter on June 10, 2024 from North Dakota State Representative, Anna Novak (Novak) of District 33 in support of the three storage facility permits submitted by SCS #1, SCS #2, and SCS #3. Novak states North Dakota's significant history of carbon management, the benefit to economic development, and the level of voluntary landowner support for the storage facilities as reasons for her support. The Commission notes Novak was not identified as a mineral owner or surface owner requiring notification for any of the three storage facilities.

(48) Kenneth Hintz (Hintz) appeared on June 13, 2024 to provide testimony. Hintz testified to owning the NE/4 of Section 9 and the NE/4 of Section 17, Township 142 North, Range 86 West, Oliver County, North Dakota. Hintz is in support of Summit Carbon Solution's project (sic; Hintz reference to Summit Carbon Solution's project is equivalent to the storage facility permit applications for SCS #1, SCS #2, and SCS #3) because it will provide new industry for North Dakota, provide supplemental income for farmers and ranchers, and new tax dollars for the county. Hintz explains he has worked with the company since 2021, and the experiences have been good and open. The Commission notes Hintz was identified as a surface owner for the KJ Hintz storage facility requiring notification by SCS #3.

(49) SCS #1 provided supplements on June 24, 2024 including a response to those who submitted written comments in support of the three storage facility permits. SCS #1 believes the supporting comments are indicative of the over 450 landowners who entered into voluntary agreements for the development of their pore space.

INTERVENOR EXAMINATION:CROSS EXAMINATION:

(50) Counsel for the Landowner Intervenors appeared in these consolidated matters, cross examined SCS #1, SCS #2, and SCS #3 (collectively called Summit in this Intervenor Examination Section) and provided direct examination as to why the storage facility permits should be denied by the Commission.

(51) Counsel for the Landowner Intervenors questioned the accuracy of the North American Industry Classification System (NAICS) code provided in Summit's testimony. Summit, during later testimony, provided the correct NAICS code for the proposed capture sources (ethanol facilities). The corrected NAICS code meets NDAC Section 43-05-01-07.1(3)(c).

(52) Counsel for the Landowner Intervenors questioned Summit on what "mechanical" miscalculation means in Article 2.4 (Correcting Errors) of the Storage Agreement. Summit responded it was a typographical error that should read "mathematical" miscalculation and would provide a supplement amending the Storage Agreement. The amended Storage Agreement submitted on June 24, 2024 corrected the typographical error.

(53) Counsel for the Landowner Intervenors questioned Summit on its reasoning to include the following terms within the Storage Agreement and Exhibit D to the Storage Agreement (Pore Space Lease):

Storage Agreement

(a) Article 3.3 (Amendment of Leases and Other Agreements)

(b) Article 7.1 (Warranty and Indemnity)

(c) Article 10.2 (Waiver of Rights to Partition)

(d) Article 16.2 (Joinder in Dual Capacity)

Pore Space Lease

(a) Warranty of Title within Section 18 (Warranty of Title and Quiet Enjoyment)

(b) Section 25 (Confidentiality)

Summit agreed to strike the terms above and provide a supplement amending the Storage Agreement and Pore Space Lease. The amended Storage Agreement and Pore Space Lease submitted on June 24, 2024 has the terms above stricken.

(54) Counsel for the Landowner Intervenors asked Summit why it chose not to include the no surface facilities clause to the Pore Space Lease agreement. Summit responded it did not anticipate that to be a difficult addition. The amended Storage Agreement submitted on June 24, 2024 added a No Surface Occupancy clause as the first paragraph under Article 8 (Easements or

Use of Surface) which states in part that unless agreed to in writing with the owner of the surface estate, the operator shall not place any surface facilities on the surface estate owned by any pore space owner within the boundaries of the facility area.

(55) Counsel for the Landowner Intervenors asked Summit to clarify Section 34 (Insurance) in the Pore Space Lease and add a waiver of subrogation with respect to the insurance it is carrying for the landowners. Summit responded it would submit an amended Pore Space Lease. The amended Pore Space Lease submitted on June 24, 2024 includes a term that the policy shall be endorsed or include a provision waiving insurer rights of subrogation against the Lessor.

(56) Counsel for the Landowner Intervenors asked Summit to explain its understanding of NDCC Section 38-22-17 where it states in part, “Once a certificate is issued: Title to the storage facility and to the stored carbon dioxide transfers, without payment of any compensation to the State.” Summit responded its understanding is that Summit would transfer the leasehold rights as well as the stored carbon dioxide. NDCC Section 38-22-16 states in part, “The storage operator has title to the carbon dioxide injected into and stored in a storage reservoir and holds title until the commission issues a certificate of project completion.” NDCC Section 38-22-17 states in part that, “Once a certificate is issued: Title acquired by the state includes all rights and interests in, and all responsibilities associated with, the stored carbon dioxide.”

(57) Counsel for the Landowner Intervenors asked Summit if its geologic model could be replicated without the 3D seismic survey information. Summit explained the 3D seismic information was used to interpret the variograms used in the geologic model and the variogram information is available in the permit application so a third-party could replicate the geologic model but it would not be an exact duplicate as the 3D seismic data was used to interpret seismic horizons for the structural model. The Commission notes that seismic data is proprietary and the use of seismic data is not required pursuant to NDAC Section 43-05-01-05(1)(b)(2)(k).

(58) Counsel for the Landowner Intervenors asked Summit if the land that sits in between the area of reviews, as shown in Exhibit LO-63, would see pressure interference due to the injection into the three proposed storage facilities and if such pressure interference would limit the ability to inject into the pore space in the reservoir located across the questioned lands. Summit responded that an operator could still develop and store carbon dioxide in the pore space but that the regulatory limitation placed on the bottom hole pressure might impact potential injection rates. The Commission agrees.

DIRECT EXAMINATION:

(59) Counsel for the Landowner Intervenors called upon five witnesses, Shane Bofto (Bofto) of Hydro Solutions, Inc., Paul Ted Doughty (Doughty) of PTD Geoscience, LLC, Paul Michael Button (Button) of Button Petroleum Management LLC, Chris Stockness (Stockness) of Shenhon Company, and Kurt Michael Swenson (Swenson) who is one of the Landowner Intervenors, representing the Swenson Trust.

(60) Bofto testified he is capable and ready to run the geochemical model in the PHREEQC software once the data and input files are received. Summit previously testified PHREEQC is a

free model that anyone can use and all input data used in the PHREEQC models is described in the permit application. The Commission notes the PHREEQC software is a public domain geochemical modeling software available from the U.S. Geological Survey and agrees that the data to replicate the PHREEQC modeling is available within the storage facility permit application.

(61) Button testified he is capable and ready to run the numerical simulation model using Computer Modeling Group Ltd. (CMG) software once the data and input files are received. The Commission stands by its assertion that Counsel for the Landowner Intervenors had or could have had this information as discussed in aforementioned Paragraph (27).

(62) Stockness testified he was hired by the Landowner Intervenors to perform a valuation or credible analysis on the pore space rights of the Landowner Intervenors' lands in Mercer and Oliver Counties, North Dakota. Stockness stated he was unable to provide an opinion on what fair market value is of pore space located in Mercer, Oliver, and Morton Counties, North Dakota. The Commission notes it does not set or evaluate the fair market value of pore space as those terms are negotiated between the applicant (storage operator) and the pore space owners.

(63) Swenson testified to being the trustee for the Swenson Trust, which owns the lands mentioned in aforementioned Paragraph (18a). Swenson also testified to recently signing a purchase agreement for more land interest in Section 20, Township 142 North, Range 87, Oliver County, North Dakota and having options on another 480 acres in that area. Swenson testified he is not against the applicant Summit or the proposed storage facilities, but he does disagree with the use of taxpayer funds to reward their unconstitutional taking of private property. Swenson testified to the following, as being the reasons, the Commission should deny these applications:

- (a) Swenson believes NDCC Chapter 38-22 amalgamation law is a taking of private property that does not allow the private owner a constitutionally guaranteed judicial hearing or trial by a jury to determine just compensation if an agreement is not reached between the private owner and applicant.
- (b) Swenson believes Summit has not made a good-faith effort to get his consent for the pore space owned by himself, the Swenson Trust, and the group of landowners he is representing (Landowner Intervenors).
- (c) Swenson does not believe Summit's proposed storage facilities are accomplishing the policy goals listed under NDCC Chapter 38-22.
- (d) Swenson testified he does not believe equitable compensation is occurring or that the Commission has the information available to determine if equitable compensation is being met as required by NDCC Chapter 38-22.
- (e) Swenson testified he has been severely prejudiced by the State's lack of enforcement of North Dakota Rules of Civil Procedure as he has not received one piece of discovery from Summit. Swenson testified he believes he has been unfairly treated as his Petition to Intervene was only granted for the BK Fischer application submitted by SCS #2 but Minnkota, who is to see smaller pressure increases in its

leased pore space, as shown in Exhibit LO-86, was granted approval to petition in all three storage facilities.

- (f) Swenson testified he believes the storage facility boundary that determines which pore space owners are paid is arbitrary and inaccurate.
- (g) Swenson believes the pore space he owns outside of the storage facility area boundaries will be negatively affected, as shown by Exhibit LO-63, by the injection operations. Swenson testified that much of his land will have pressure trespass in the pore space rendering him unable to use it for a net cash flow and that he is not being paid for his pore space being damaged.
- (h) Swenson testified Summit has not submitted into the record any evidence of a potential vapor release model, concentration gradients of the carbon dioxide that may be released, and its potential impact to public receptors should a release occur. Swenson believes this information is necessary before making a determination on whether the project could endanger human health.

The Commission notes the following in response to Swenson's testimony:

- (a) At the hearings and in their various motions the Landowner Intervenors argue the Commission has violated their constitutional rights including due process. As part of issuing this order, however, the Commission notes it does not determine the constitutionality of North Dakota statutes and laws. The Commission finds NDCC Section 38-22-10 to be the current law.
- (b) NDCC Section 38-22-08(4) requires the storage operator to make a good-faith effort to get the consent of all persons who own the storage reservoir's pore space and NDCC Section 38-22-08(5) requires the storage operator to obtain the consent of persons who own at least sixty percent of the storage reservoir's pore space. Summit testified that through good-faith negotiations with over 450 landowners, it acquired pore space agreements for over 146,500 acres and during those negotiations made changes to the pore space agreement, including a 50% increase in the royalty payment rate, the addition of a Favored Nations clause, and offering of a no surface facilities clause (No Surface Occupancy). Exhibit 5A, 5B, and 5C show SCS #1, SCS #2, and SCS #3 have leased approximately 89.14%, 92.43%, and 96.77%, respectively, across the three proposed storage facilities. A good-faith effort does not always result in an agreement between parties and a good-faith effort was made by Summit as indicated by the large percentage of consenting pore space owners.
- (c) The approval of Summit's three storage facility permit applications is in the public interest by promoting the policy stated in NDCC Section 38-22-01.
- (d) NDCC Section 38-22-08(14) requires that all nonconsenting pore space owners are or will be equitably compensated. "Equitably compensated" in this statute is not to be interpreted as assessing or setting the fair market value of pore space. Summit's

one-phase formula based on surface acres and implementation of the Favored Nation clause under Section 32 of the Pore Space Lease agreement will equitably compensate all pore space owners within the storage facilities. The Commission does not set or evaluate the fair market value of pore space as those terms are negotiated between the applicant (storage operator) and the pore space owners; however over 90% of the pore space owners across the three storage facilities signed pore space lease agreements, indicating the majority of the pore space owners agree they are being fairly compensated for the use of their pore space.

- (e) Minnkota's Petition to Intervene was granted only upon Minnkota demonstrating its correlative rights are impacted.
- (f) Swenson is not qualified to evaluate the accuracy of the storage facility boundary. The storage facility permit application and testimony provided by Summit at the hearing adequately define the horizontal and vertical boundaries of the storage reservoir.
- (g) Swenson is not qualified to evaluate the effect the injection operations and associated pressure front may have on his pore space. This topic has been discussed in aforementioned Paragraph (58).
- (h) Dispersion models are not required to be submitted with storage facility permit applications. The storage facility permit application's geologic and area of review evaluations indicate the confining zone properties and lack of pathways for migration present across the storage reservoir will prevent carbon dioxide from leaking out of or for other substances to leak into the storage reservoir, as required pursuant to NDCC Section 38-22-08(8) and (9). The storage facility permit application includes a testing and monitoring plan, postinjection site care and facility closure plan, and emergency and remedial response plan, and these plans if followed will ensure compliance with NDCC Section 38-22-08(13). The storage facility permit as proposed will not endanger human health nor unduly endanger the environment and will not adversely affect surface waters or formations containing fresh water, as required pursuant to NDCC Section 38-22-08(7) and (10).

#### TECHNICAL REVIEW:

(64) SCS #1's application provides adequate data to show suitability of the Broom Creek Formation for geologic storage of carbon dioxide in the facility area. SCS #1 testified the storage facility was suitable and feasible for carbon dioxide injection and storage pursuant to NDCC Section 38-22-08(2). The Commission agrees.

(65) SCS #1's application provides adequate modeling of the storage reservoir for delineation of the facility area pursuant to NDAC Section 43-05-01-05, provides adequate monitoring to detect if carbon dioxide is migrating into properties outside of the facility area pursuant to NDAC Section 43-05-01-11.4, and should a vertical or lateral release of carbon dioxide

from the facility occur, emergency and remedial plans are in place pursuant to NDAC Section 43-05-01-13.

(66) NDCC Section 38-22-08(6) requires the Commission to find whether the storage facility contains commercially valuable minerals and, if it does, a permit may be issued only if the Commission is satisfied that the interests of the mineral owners or mineral lessees will not be adversely affected or have been addressed in an arrangement entered into by the mineral owners or mineral lessees and the storage operator. The proposed storage facility does not contain commercially valuable minerals. The amalgamated storage reservoir pore space to be utilized is not hydrocarbon bearing as determined from test data included with the application. There has been no historic hydrocarbon exploration, production, or studies suggesting there is an economic supply of hydrocarbons from formations above or below the Broom Creek Formation within the proposed storage facility area. Lignite coal is mined near the proposed storage facility area from the Sentinel Butte Formation, within the Beulah Horizon of the Beulah-Zap Interval. Coal seams exist in the Bullion Creek Formation. All coal seams present in the Fort Union Group above the facility area will not be impacted by this project as there are no current or future planned mining activities within the proposed storage facility area. SCS #1 testified if operators decide to drill wells for hydrocarbon exploration or production in the future, the lateral extent of the stabilized plume and the pressure differential are minor enough to allow for either horizontal drilling without penetrating the stored carbon dioxide or vertical drilling with proper controls, for hydrocarbon exploration below the Broom Creek Formation. The Commission agrees.

(67) The MCE Pipeline is an approximately 2,500-mile proposed carbon dioxide transmission pipeline that will be constructed, owned, and operated by SCS Carbon Transport LLC (SCS CT). SCS #1 testified the MCE Pipeline will be capable of transporting up to 18.5 million metric tons of carbon dioxide annually from anthropogenic sources, including ethanol facilities and other industries across the Midwest, including Iowa, Minnesota, Nebraska, South Dakota, and North Dakota, to be stored in three storage facilities, namely the TB Leingang, BK Fischer, and KJ Hintz located in Mercer, Morton, and Oliver Counties, near the city of Beulah, North Dakota, respectively owned and operated by SCS #1, SCS #2, and SCS #3. SCS #1 testified Summit Carbon Storage #1, LLC, Summit Carbon Storage #2, LLC, and Summit Carbon Storage #3, LLC are all wholly owned subsidiaries of SCS Permanent Carbon Storage LLC (SCS PCS), and SCS Carbon Transport LLC and SCS Permanent Carbon Storage LLC are both wholly owned subsidiaries of Summit Carbon Solutions, LLC. SCS #1 testified at the time of the hearing, 57 ethanol plants had signed contracts, including Tharaldson Ethanol in Casselton, North Dakota.

(68) The dynamic reservoir simulation for SCS #1's application indicated approximately 6.22 million metric tons of carbon dioxide annually or 124.4 million metric tons over the 20-year injection period, could be stored in the TB Leingang storage facility, without exceeding the maximum bottom hole pressure constraint, derived as 90% of the formation fracture pressure of the Broom Creek Formation and a well head pressure of 2,100 psi during injection. The capacity for the three storage facilities combined was modeled to be approximately 17.6 million metric tons of carbon dioxide annually or 352 million metric tons over the 20-year injection period. SCS #1 testified the 57 ethanol plants account for approximately 16 million metric tons of carbon dioxide annually and should additional volumes be contracted that would exceed the capacity of the three storage facilities, an additional storage facility permit would be pursued.

(69) SCS CT has submitted a permit to the North Dakota Public Service Commission (PSC) for approximately 332 miles of the MCE Pipeline that is within the state of North Dakota. Transition from the PSC jurisdiction transmission line (MCE Pipeline) to the flow lines for the three storage facilities will be at the terminus point located in Section 5, Township 141 North, Range 86 West, Oliver County, North Dakota. The entire length of the approximately 8.6-mile flow line to be utilized for carbon dioxide transportation from the terminus point (the terminus point is considered part of the injection facility for the proposed TB Leingang storage facility) is under the jurisdiction of the Commission.

(70) The 20-inch and 24-inch flow line will be high-strength carbon steel pipe constructed in accordance with American Petroleum Institute (API) 5L X-70 PSL 2 (2018) requirements and is anticipated to have maximum operating pressure of 2,183 psig and maximum design flow rate of 936 million standard cubic feet per day. The flow line will have an impressed current cathodic protection (ICCP) system installed to mitigate external corrosion. SCS #1 testified the flow lines for all three storage facilities, the MCE Pipeline, and the ICCP system will be constructed and operated in compliance with the Pipeline and Hazardous Materials Safety Administration's Title 49 of the Code of Federal Regulations, Part 195. SCS #1 testified the flow line would be operated in a manner that would not exceed the surface and bottom hole pressure constraints of the injection wells.

(71) The flow line will be equipped with flowmeters, pressure gauges, and a Supervisory Control and Data Acquisition (SCADA) system to detect leaks. The SCADA system will be integrated to allow SCS #1, SCS #2, SCS #3, SCS PCS, and SCS CT to share operational data and controls in real-time to ensure operational parameters are safely maintained between all injection sites. Carbon dioxide gas detection stations will be placed on the injection well heads and inside the pump and metering buildings. SCS #1 testified the flow line will be owned by SCS #1 but operated by SCS CT, as a single integrated system, with the SCS #2 flow line, SCS #3 flow line, and MCE Pipeline.

SCS #1 testified each injection well will have a dedicated mass flowmeter in addition to a mass flowmeter located at the terminus point (custody transfer point from MCE Pipeline to SCS #1's flow line). SCS #1 was questioned by Commission staff at the hearing on June 12, 2024 if it would be opposed to a requirement to add flowmeters at the beginning of each individual flow line to show custody transfer to SCS #2 and SCS #3, to which SCS #1 had no opposition. SCS #1 provided a supplemental filing on June 24, 2024 to clarify prior testimony, to add it does not object to the requirement but does not believe the additional custody transfer points (flowmeters) will add significant value to the accuracy of the metering and leak detection system. SCS #1 explains the addition of these flowmeters would require additional resources to calibrate meters and stream quality analyzers and require the addition of a 24-inch smart tool receiver and launcher. SCS #1 recommends such additions be contemplated in the future should one of the storage facilities be sold.

(72) The projected composition of the commingled carbon dioxide stream being transported by the MCE Pipeline at the time of this application is anticipated to be at least 98.25% carbon dioxide, less than 1.44% nitrogen, less than 0.31% oxygen, with trace quantities of water,



hydrocarbons, hydrogen sulfide, sulfur, and glycol. The MCE Pipeline and storage facility have been conservatively designed to accommodate a carbon dioxide stream that is 95% carbon dioxide, 2% oxygen, and 3% nitrogen. The carbon dioxide stream composition used in the dynamic reservoir simulation was 98.25% carbon dioxide which SCS #1 testified represents the anticipated average carbon dioxide stream based on compositional tests from the 57 ethanol plant sources and provides for a more representative plume boundary. SCS #1 testified a test would be required for any new proposed sources to confirm their carbon dioxide stream meets or exceeds 95% carbon dioxide. Carbon dioxide stream test results for any new proposed sources shall be submitted to the Commission, for review through the Department of Mineral Resources Oil and Gas Division. The Commission finds SCS #1 has demonstrated the carbon dioxide stream is of a quality that allows it to be safely and efficiently stored in the storage reservoir pursuant to NDCC Section 38-22-08(3).

(73) The TB Leingang #1 well (File No. 40158) is a stratigraphic test well that will be drilled, tested, logged, and constructed to Class VI requirements, located 2,160 feet from the north line and 519 feet from the east line of Section 18, Township 141 North, Range 87 West, Oliver County, North Dakota. This well is to be converted to a Class VI injection well.

(74) The TB Leingang #2 well (File No. 40178) is a stratigraphic test well that will be drilled, tested, logged, and constructed to Class VI requirements, located 2,260 feet from the north line and 521 feet from the east line of Section 18, Township 141 North, Range 87 West, Oliver County, North Dakota. This well is to be converted to a Class VI injection well.

(75) The Milton Flemmer #1 well (File No. 38594), located 306 feet from the north line and 1,839 feet from the east line of Section 35, Township 141 North, Range 88 West, Mercer County, North Dakota, is a stratigraphic test well that was used for reservoir characterization and constructed to Class VI requirements. This well is to be utilized as a direct method of monitoring the injection zone pursuant to NDAC Section 43-05-01-11.4.

(76) SCS #1 created a geologic model based on site characterization as required by NDAC Section 43-05-01-05.1 to delineate the area of review. Data utilized included seismic survey data, geophysical logs from nearby wells, and core data. Structural surfaces were interpolated with SLB's (formerly Schlumberger) Petrel software, and included formation top depths, data collected from the ANG #1 (Class I well), Flemmer #1 (File No. 34243), BNI #1 (File No. 34244), J-LOC #1 (File No. 37380), Liberty #1 (File No. 37672), MAG #1 (File No. 37833), Coteau #1 (File No. 38379), Milton Flemmer #1 (File No. 38594), Archie Erickson #2 (File No. 38622), and Slash Lazy H #5 (File No. 38701) wells; three 3D seismic surveys conducted at the Milton Flemmer #1, Archie Erickson #2, and Slash Lazy H #5; the J-LOC #1 and BNI #1; and the Liberty #1 locations; and one 5 mile long 2D seismic line near the J-LOC #1, BNI #1, and Liberty #1 locations. Well log data was used to pick formation tops, interpret lithology, estimate petrophysical properties, and determine a time-depth shift for seismic data in the Amsden Formation, the lower confining zone, the undifferentiated Spearfish/Opeche Formations, the upper confining zone, and the Broom Creek Formation, the injection zone. Geostatistics were used to distribute petrophysical properties within the model. Seismic data was used to reinforce interpolation of the formation tops to create structural surfaces, and to distribute lithologies and geologic properties in the model.

The numerical simulation model permeability was tuned globally by applying a permeability multiplier to match the reservoir properties estimated from the Milton Flemmer #1 data. SCS #1 explained that the Milton Flemmer #1 injectivity test results, well logs, and core analysis, and area seismic data were reviewed before deciding to use a 2.5 multiplier and its technical experts are confident in using this multiple based on their years of experience studying the Broom Creek Formation. The Commission notes the use of permeability multipliers is typical in reservoir modeling and finds the use of the 2.5 multiple reasonable given the information provided, the lack of operational data for history matching, and the requirement for storage operators to reevaluate the model at a minimum once every five years pursuant to NDAC Section 43-05-01-05.1.

Sensitivity analyses are used to determine how input parameters affect a model's output. SCS #1 testified sensitivity analyses were ran on injection rates, bottom hole pressure conditions, well head temperatures, and well head pressures, and certainty cases were run on property distribution. SCS #1 explained that a model without sensitivity analyses done would provide enough insight to be able to safely inject for at least five years until the first reevaluation requirement. The Commission agrees.

Based on the reservoir pressure calculated at the TB Leingang #1 well, critical threshold pressure for this storage facility exists in the Broom Creek Formation prior to injection. For area of review delineation purposes, critical threshold pressure has the same meaning as pressure front, defined in NDAC Section 43-05-01-01. The EPA's "UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance" lists several methods to estimate an acceptable pressure increase for over-pressurized reservoirs, including a multiphase numerical model designed to model leakage through a single well bore, or through multiple well bores in the formation. SCS #1 used this method to determine cumulative leakage potential along a hypothetical leaky well bore without injection occurring, estimated to be 0.01 cubic meters over 20 years. Incremental leakage with injection occurring was estimated to be a maximum of 0.017 cubic meters over 20 years. A value of 1 cubic meter is the lowest meaningful value that can be produced by the Analytical Solution for Leakage in Multilayered Aquifers (ASLMA) model as smaller values likely represent statistical noise. An actual leaky well bore or transmissive conduit would likely communicate with the Inyan Kara Formation. SCS #1's application noted no indications of communication between the Broom Creek Formation and Inyan Kara Formation were observed, and that nothing in fluid samples indicated communication to an Underground Source of Drinking Water (USDW).

The predicted extent of the carbon dioxide plume from beginning to end of life of the project, at the time when the carbon dioxide plume ceases to migrate into adjacent cells of the geologic model during the numerical simulation, referred to as stabilized plume, was used to define the storage facility boundary in this case. Pursuant to NDAC Section 43-05-01-05(1)(b)(2) the area of review included a one-mile buffer around the storage facility boundaries. Time lapse seismic surveys will be used to monitor the extent of the carbon dioxide plume.

SCS #1 testified plume stabilization is evaluated by reviewing the rate of change in the carbon dioxide plume area over time using one-year time steps and a rate cutoff of less than 0.2 square miles of change per year was used to determine the stabilized plume boundary; a carbon dioxide saturation cutoff of 5% was used to define the stabilized plume boundary because 5% is the lowest

detectable limit using seismic surveys; and a variable buffer was used on the stabilized plume boundary so the storage facility area included describable lands.

(77) The area proposed to be included within the storage facility is as follows:

TOWNSHIP 142 NORTH, RANGE 87 WEST

ALL OF SECTION 32, THE SW/4 AND E/2 OF SECTION 31, THE NW/4 AND S/2 OF SECTION 33, AND THE S/2 SW/4 AND SW/4 SE/4 OF SECTION 34,

TOWNSHIP 141 NORTH, RANGE 88 WEST

ALL OF SECTIONS 12, 13, 14, 23, 24, 25, 26, AND 36, THE NE/4 AND S/2 OF SECTION 1, THE NE/4 AND S/2 OF SECTION 11, THE SE/4 NE/4 AND E/2 SE/4 OF SECTION 15, THE E/2 E/2 OF SECTION 22, AND THE N/2 OF SECTION 35,

TOWNSHIP 141 NORTH, RANGE 87 WEST

ALL OF SECTIONS 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34, THE W/2 W/2 OF SECTION 2, THE W/2 OF SECTION 11, THE W/2 SECTION 14, THE NW/4 AND S/2 OF SECTION 23, THE W/2 NW/4 AND NW/4 SW/4 OF SECTION 25, AND THE W/2 AND W/2 E/2 OF SECTION 35,

TOWNSHIP 140 NORTH, RANGE 88 WEST

ALL OF SECTION 1, LOT 1, LOT 2, LOT 3, LOT 4, SE/4 NE/4, AND NE/4 SE/4 OF SECTION 2, LOT 1, LOT 2, LOT 3, LOT 4 OF SECTION 3, AND THE NE/4 OF SECTION 12,

TOWNSHIP 140 NORTH, RANGE 87 WEST

ALL OF SECTION 6, LOT 2, LOT 3, LOT 4, S/2 NW/4 OF SECTION 4, LOT 1, LOT 2, LOT 3, LOT 4, S/2 N/2 OF SECTION 5, AND THE N/2 OF SECTION 7.

ALL IN MERCER, MORTON, AND OLIVER COUNTIES AND COMPRISING OF 29,444.72 ACRES, MORE OR LESS.

(78) In the Milton Flemmer #1 well, the Spearfish, Minnekahta, and Opeche Formations, hereinafter referred to as the Spearfish/Opeche Formations, unconformably overlie the Broom Creek Formation. The Minnekahta Formation pinches out within the storage facility area, and where it does not exist, the Spearfish and Opeche Formations are considered undifferentiated. The Broom Creek Formation, the upper confining Spearfish/Opeche Formations, and the lower confining Amsden Formation are laterally extensive throughout the area of review.

(79) Core analysis of the Broom Creek Formation in the Milton Flemmer #1 well shows sufficient permeability to be suitable for the desired injection rates and pressures without risk of creating fractures in the injection zone. Thin-section and SEM-EDS (energy-dispersive spectroscopy) micrograph investigation shows the Broom Creek Formation's most porous sample shows moderately well-sorted, subrounded to subangular, and fine quartz and feldspar grains, with quartz grains constituting about 87% of the composition. The least porous sample is located at the Spearfish/Opeche Formations and Broom Creek Formation boundary and primarily consists of

anhydrite, dolomite, and clay minerals with some microfractures. Microfracture testing in the Milton Flemmer #1 well, at a depth of 5,950 feet determined the breakdown pressure of the Broom Creek Formation to be 7,088 psi, with a fracture propagation pressure of 4,288 psi, and a fracture closure pressure of 4,047 psi, yielding a formation fracture gradient of 0.718 psi/ft.

Core analysis of the overlying Spearfish/Opeche Formations shows sufficiently low permeability to stratigraphically trap carbon dioxide and displaced fluids. Thin-section and SEM-EDS micrograph investigation shows the Spearfish/Opeche Formations' most porous sample has tightly associated fine grains of quartz, feldspar, and dolomite with anhydrite and clay cement, with isolated and discontinuous pore spaces. The least porous sample is located at the Spearfish/Opeche Formations and Broom Creek Formation boundary and primarily consists of anhydrite with some microfractures. Microfracture testing in the Milton Flemmer #1 well at 5,771 feet observed no formation breakdown with a maximum of approximately 5,580 psi applied. A propagation pressure of 4,769 psi was observed, yielding a Spearfish/Opeche Formations fracture gradient of 0.82 psi/ft but was deemed associated with drilling-induced fractures. The inability to break down the Spearfish/Opeche Formations indicates the formations are very tight competent rock and exhibit sufficient geologic integrity to contain the injected carbon dioxide. The maximum bottom hole pressures of 3,663 psi and 3,669 psi, respectively for the TB Leingang #1 and TB Leingang #2 injection wells, are estimated to be 90% of the formation fracture pressure as calculated by the 0.718 psi/ft fracture gradient of the Broom Creek Formation multiplied by the depth of the top perforation in the injection zone. Injection formation breakdown would be observed and recorded if permitted operational pressures were exceeded before compromising the confining zone.

Core analysis of the underlying Amsden Formation shows sufficiently low permeability to stratigraphically contain carbon dioxide and displaced fluids. Thin-section and SEM-EDS micrograph investigation shows the most porous sample has moderately sorted, fine grained subangular quartz and feldspar grains with anhydrite cement, however this layer is isolated and confined between an ultralow permeable layer of clay-rich quartz dolomite above and anhydrite-rich layer below.

(80) SCS #1 has defined the horizontal and vertical boundaries of the storage reservoir and buffers have been included to ensure the storage facility is operated safely and as contemplated pursuant to NDCC Section 38-22-08(12).

(81) The in situ fluid of the Broom Creek Formation in this area is in excess of 10,000 parts per million of total dissolved solids.

(82) Investigation of wells within the area of review found no vertical penetrations of the confining or injection zones requiring corrective action. The area of review will be reevaluated at a period not to exceed five years from beginning of injection operations.

(83) The Fox Hills Formation is the deepest USDW within the area of review. Its base is situated at a depth of 1,661 feet at the location of the Milton Flemmer #1 well, leaving approximately 4,156 feet between the base of the Fox Hills Formation and the top of the Broom Creek Formation.

(84) Fluid sampling of shallow USDWs has been performed to establish a geochemical baseline, with additional localized baseline sampling proposed for the Fox Hills Formation and other shallow wells under investigation. Future sampling is proposed in SCS #1's application pursuant to NDAC Section 43-05-01-11.4. A baseline of groundwater samples will be established and submitted to the Commission, for review through the Department of Mineral Resources Oil and Gas Division prior to injection operations.

(85) Soil sampling is proposed pursuant to NDAC Section 43-05-01-11.4. A baseline of soil gas concentrations will be established and submitted to the Commission, for review through the Department of Mineral Resources Oil and Gas Division prior to injection operations. Soil gas profile stations will be located near the TB Leingang #1 and TB Leingang #2 injection wells and Milton Flemmer #1 monitoring well locations.

(86) The top of the Inyan Kara Formation is at 4,444 feet, approximately 2,783 feet below the base of the Fox Hills Formation at the location of the Milton Flemmer #1 well and it provides an additional zone of monitoring between the Fox Hills Formation and the Broom Creek Formation to detect vertical carbon dioxide or fluid movement.

(87) No known or suspected regional faults or fractures with transmissibility have been identified during the site-specific characterization. Formation imaging logs show primarily litho-bound resistive fractures commonly filled with anhydrite and litho-bound conductive fractures filled with clay within the Opeche Formation, one conductive litho-bound fracture in the Minnekahta Formation, and one resistive litho-bound fracture and one resistive continuous fracture in the Spearfish Formation. Core analysis confirmed fractures observed in the Opeche Formation were tectonic, vertical to subvertical, closed, and cemented with anhydrite. The Amsden Formation is considered to be nonfractured, however a few litho-bound conductive and resistive fractures were identified with the presence of horizontal compaction features (stylolites). Core analysis confirmed the fractures were discontinuous and filled. No microfaults were found within the aforementioned formations. Breakout and tensile fractures induced by drilling were identified in the Opeche, Broom Creek, and Amsden Formations. Seismic data used to characterize the subsurface within the project area showed no indication of faulting with sufficient vertical extent to transect the storage reservoir and confining zones. SCS #1 testified the fractures found through formation imaging logs and core analysis were filled with precipitated minerals and all fractures lack sufficient permeability or vertical extent to act as fluid pathways.

(88) Fluid samples from the Inyan Kara Formation and Broom Creek Formation suggest they are hydraulically isolated from each other, supporting that the confining formations above the Broom Creek Formation are not compromised by migration pathways.

(89) Geochemical simulation performed with a conservative injection stream and data obtained from the confining and injection zones determined no observable change in injection rate or pressure, and simulations of conservatively high carbon dioxide exposure to the cap rock determined geochemical changes will be minor and only at the contact with the injection zone and will not cause substantive deterioration compromising confinement. The injection stream composition used for geochemical modeling contained a higher amount of oxygen than the anticipated stream to represent the conservative scenario because oxygen is the most reactive

constituent in the anticipated injection steam. The confining zones have adequate thickness to both act as immediate containment and provide a measurable vertical buffer.

(90) Risk of induced seismicity is not a concern based on existing studies of major faults within the area of review, tectonic boundaries, and relatively stable geologic conditions surrounding the proposed injection site. SCS #1 testified a passive seismicity monitoring array would be installed to provide continuous near-real-time reporting of seismic events and once the layout is known it will be submitted to the Commission, for review through the Department of Mineral Resources Oil and Gas Division prior to injection operations.

(91) The storage facility permit application, testimony provided at the hearing, and information detailed in the aforementioned paragraphs in the Technical Review section provide evidence that the storage facility as proposed will:

- (a) Not adversely affect surface waters or formations containing surface waters pursuant to NDCC Section 38-22-08(7).
- (b) Prevent carbon dioxide from escaping the storage reservoir pursuant to NDCC Section 38-22-08(8).
- (c) Not allow substances to enter the storage reservoir that could compromise the objectives of NDCC Chapter 38-22 or the integrity of the storage reservoir pursuant to NDCC Section 38-22-08(9).
- (d) Not endanger human health nor unduly endanger the environment, pursuant to NDCC Section 38-22-08(10) as supported by aforementioned Paragraphs (a) through (c) above.
- (e) Have established monitoring facilities and protocols to assess the location and migration of carbon dioxide injected for storage and the storage operator will ensure compliance with all permit, statutory, and administrative requirements pursuant to NDCC 38-22-08(13).

(92) NDAC Section 43-05-01-11.3(3) requires the storage facility operator to maintain pressure on the annulus that exceeds the operating injection pressure, unless the Commission determines that such a requirement might harm the integrity of the well or endanger USDWs. SCS #1 testified its intention to submit a variance request with the injection permit to use less than a 300 psi nitrogen cushion to maintain constant positive pressure on the well annulus in each injection well. The Commission believes placing pressure on the annulus that exceeds the operating injection pressure will create a risk of micro annulus by debonding of the long string casing-cement sheath during the operational life of the well. A micro annulus would harm external mechanical integrity and provide a potential pathway for endangerment of USDWs.

(93) The two injection wells are proposed to be equipped with distributed temperature sensing (DTS) and distributed acoustic sensing (DAS) fiber optic cables enabling continuously

monitored external mechanical integrity. The planned monitoring well, Milton Flemmer #1 is equipped with DTS/DAS.

(94) SCS #1 testified Summit's project (reference to Summit's project means the three storage facilities, TB Leingang, BK Fischer, and KJ Hintz and the MCE Pipeline which are owned by subsidiaries of Summit Carbon Solutions, LLC) will benefit the agricultural and energy industries of North Dakota, the U.S. economy, and the ethanol plant participants (sources of carbon dioxide).

SCS #1 testified the project will benefit North Dakota by developing carbon capture storage (CCS) infrastructure, such as carbon dioxide pipeline infrastructure that will be a common carrier system that could be used by others, by commercially deploying CCS it provides support for others doing the same, and by benefiting the regional corn market as it will provide a significant demand for regional corn. By extension the corn market will have an impact on land prices and commodity prices that would benefit the U.S. economy. SCS #1 testified the project will benefit the ethanol plant partners as it will allow them to lower their carbon intensity score and enable them to participate in emerging low carbon fuel markets, both for fuel transportation and potentially sustainable aviation fuels. The Tharaldson Ethanol Plant, located in Casselton, North Dakota, is a plant partner that consumes approximately 15-20% of the corn grown in North Dakota annually.

More information is needed before establishing storage fees pursuant to NDAC Section 43-05-01-17 for the TB Leingang, BK Fischer, and KJ Hintz storage facilities.

(95) The approval of this application is in the public interest by promoting the policy established by the North Dakota Legislature pursuant to NDCC Section 38-22-01.

(96) The application submitted and testimony provided at the hearing, meet all requirements set by the Commission as required by NDCC Section 38-22-08(1).

IT IS THEREFORE ORDERED:

(1) The creation of the TB Leingang Broom Creek Storage Facility in Mercer, Morton, and Oliver Counties, North Dakota, is hereby authorized and approved.

(2) Summit Carbon Storage #1, LLC, its assigns and successors, is hereby authorized to store carbon dioxide in the Broom Creek Formation in the TB Leingang Broom Creek Storage Facility.

(3) The TB Leingang Broom Creek Storage Facility shall extend to and include the following lands in Mercer, Morton, and Oliver Counties, North Dakota:

TOWNSHIP 142 NORTH, RANGE 87 WEST

ALL OF SECTION 32, THE SW/4 AND E/2 OF SECTION 31, THE NW/4 AND S/2 OF SECTION 33, AND THE S/2 SW/4 AND SW/4 SE/4 OF SECTION 34,

TOWNSHIP 141 NORTH, RANGE 88 WEST

ALL OF SECTIONS 12, 13, 14, 23, 24, 25, 26, AND 36, THE NE/4 AND S/2 OF SECTION 1, THE NE/4 AND S/2 OF SECTION 11, THE SE/4 NE/4 AND E/2 SE/4 OF SECTION 15, THE E/2 E/2 OF SECTION 22, AND THE N/2 OF SECTION 35,

TOWNSHIP 141 NORTH, RANGE 87 WEST

ALL OF SECTIONS 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34, THE W/2 W/2 OF SECTION 2, THE W/2 OF SECTION 11, THE W/2 SECTION 14, THE NW/4 AND S/2 OF SECTION 23, THE W/2 NW/4 AND NW/4 SW/4 OF SECTION 25, AND THE W/2 AND W/2 E/2 OF SECTION 35,

TOWNSHIP 140 NORTH, RANGE 88 WEST

ALL OF SECTION 1, LOT 1, LOT 2, LOT 3, LOT 4, SE/4 NE/4, AND NE/4 SE/4 OF SECTION 2, LOT 1, LOT 2, LOT 3, LOT 4 OF SECTION 3, AND THE NE/4 OF SECTION 12,

TOWNSHIP 140 NORTH, RANGE 87 WEST

ALL OF SECTION 6, LOT 2, LOT 3, LOT 4, S/2 NW/4 OF SECTION 4, LOT 1, LOT 2, LOT 3, LOT 4, S/2 N/2 OF SECTION 5, AND THE N/2 OF SECTION 7.

ALL IN MERCER, MORTON, AND OLIVER COUNTIES AND COMPRISING OF 29,444.72 ACRES, MORE OR LESS.

(4) Injection into the TB Leingang Broom Creek Storage Facility shall not occur until Summit Carbon Storage #1, LLC has met the financial responsibility demonstration pursuant to Order No. 33531.

(5) This authorization does not convey authority to inject carbon dioxide into the TB Leingang Broom Creek Storage Facility; an approved permit to inject for the TB Leingang #1 (File No. 40158) and TB Leingang #2 (File No. 40178) wells shall be issued by the Commission prior to injection operations commencing.

(6) The authorization granted herein is conditioned on the operator receiving and complying with all provisions of the injection permit issued by the Department of Mineral Resources Oil and Gas Division of the Industrial Commission and complying with all applicable provisions of NDAC Chapter 43-05-01 and this order.

(7) Definitions.

“Area of review” in this case means an area encompassing a buffer around the facility area of one mile.

“Broom Creek Formation” in this case means the stratigraphic interval from below the base of the undifferentiated Spearfish/Opeche Formations, found at a depth of 5,817 feet below the Kelly Bushing, to above the top of the Amsden Formation, found at a depth of 6,159 feet below the Kelly Bushing, as identified by the Array Induction Gamma log performed in the Milton Flemmer #1



well (File No. 38594), located in NW/4 NE/4 of Section 35, Township 141 North, Range 88 West, Mercer County, North Dakota.

“Cell” in this case means individual cell blocks of the geologic model; each cell is approximately 1,000 feet by 1,000 feet.

“Facility area” means the areal extent of the storage reservoir as defined in Paragraph (3) above, that includes lands within the lateral boundary of the carbon dioxide plume from beginning of injection to the time the carbon dioxide plume ceases to migrate into adjacent geologic model cells.

“Storage facility” means the reservoir, underground equipment, and surface facilities and equipment used or proposed to be used in the geologic storage operation. Pursuant to NDCC Section 38-22-02, it does not include pipelines used to transport carbon dioxide to the storage facility.

(8) The storage facility operator shall comply with all conditions of this order, the permit to inject, and applicable provisions of NDAC Chapter 43-05-01. Any noncompliance constitutes a violation and is grounds for enforcement action, including but not limited to termination, revocation, or modification of this order pursuant to NDAC Section 43-05-01-12.

(9) In an administrative action, it shall not be a defense that it would have been necessary for the storage facility operator to halt or reduce the permitted activity in order to maintain compliance with this order, the permit to inject, and applicable provisions of NDAC Chapter 43-05-01.

(10) The storage facility operator shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this order, the permit to inject, and applicable provisions of NDAC Chapter 43-05-01.

(11) The storage facility operator shall implement and maintain the provided emergency and remedial response plan pursuant to NDAC Section 43-05-01-13.

(12) The storage facility operator shall notify the Director within 24 hours of any release of carbon dioxide from the storage facility, flow lines, or of carbon dioxide detected outside of the injection zone. Where the Director or the storage facility operator obtains evidence that the injected carbon dioxide stream and associated pressure front may endanger an underground source of drinking water, the storage facility operator shall cease injection immediately, implement the emergency and remedial response plan approved by the Commission (insofar as the Commission has jurisdiction), and take all steps reasonably necessary to identify and characterize any release.

(13) The storage facility operator shall at all times properly operate and maintain all storage facilities which are installed or used by the storage facility operator to achieve compliance with the conditions of this order, the permit to inject, and applicable provisions of NDAC Chapter 43-05-01. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including

appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance.

(14) This order may be modified, revoked and reissued, or terminated pursuant to NDAC Section 43-05-01-12. The filing of a request by the storage facility operator for and order modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any condition contained herein.

(15) The injection well permit or the permit to operate an injection well does not convey any property rights of any sort or any exclusive privilege.

(16) The storage facility operator shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this order, or to determine compliance thereof. The storage facility operator shall also furnish to the Director, upon request, copies of records required to be kept by this order, the permit to inject, and applicable provisions of NDAC Chapter 43-05-01.

(17) The storage facility operator shall allow the Director, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the storage facility premises where records must be kept pursuant to this order and NDAC Chapter 43-05-01.
- (b) At reasonable times, have access to and copy any records that must be kept pursuant to this order and NDAC Chapter 43-05-01.
- (c) At reasonable times, inspect any facilities, equipment, including monitoring and control equipment, practices, or operations regulated or required pursuant to this order, the permit to inject, and NDAC Chapter 43-05-01.
- (d) At reasonable times, sample or monitor for the purposes of assuring compliance, any substances or parameters at any location.

(18) The storage facility operator shall maintain and comply with the proposed testing and monitoring plan pursuant to NDAC Section 43-05-01-11.4.

(19) The storage facility operator shall comply with the reporting requirements provided in NDAC Section 43-05-01-18. The mass of carbon dioxide injected, the volume of carbon dioxide stream injected, and the average and maximum injection rate, surface injection pressure, and down-hole temperature and pressure data shall be reported monthly to the Director on or before the fifth day of the second succeeding month once injection commences regardless of the status of operations, until the injection well is properly plugged and abandoned.

(20) The storage facility operator must obtain an injection well permit under NDAC Section 43-05-01-10 and injection wells must meet the construction and completion requirements in NDAC Section 43-05-01-11.

(21) The storage facility operator shall notify the Director at least 48 hours in advance to witness all mechanical integrity tests of the tubing-casing annulus in the injection well. The packer must be set within 100 feet of the upper most perforation and in the chrome enhanced casing, as an exception to NDAC Section 43-05-01-11. However, the packer must also be set within confining zone lithology, within carbon dioxide resistant cement, and not interfere with down-hole monitoring equipment.

(22) The storage facility operator shall maintain and comply with the prepared plugging plan pursuant to NDAC Section 43-05-01-11.5.

(23) The storage facility operator shall establish mechanical integrity prior to commencing injection and maintain mechanical integrity pursuant to NDAC Section 43-05-01-11.1.

(24) The storage facility operator shall implement the worker safety plan pursuant to NDAC Section 43-05-01-13.

(25) The storage facility operator shall comply with leak detection and reporting requirements pursuant to NDAC Section 43-05-01-14.

(26) The storage facility operator shall implement the proposed corrosion monitoring and prevention program pursuant to NDAC Section 43-05-01-15.

(27) The storage facility operator shall prepare, maintain, and comply with an area of review and corrective action plan pursuant to NDAC Section 43-05-01-05.1, if deemed necessary by the Commission.

(28) The storage facility operator shall maintain financial responsibility pursuant to NDAC Section 43-05-01-09.1 and Order No. 33531.

(29) The storage facility operator shall maintain and comply with the proposed post-injection site care and facility closure plan pursuant to NDAC Section 43-05-01-19.

(30) The storage facility operator shall notify the Director within 24 hours of failure or malfunction of surface or bottom hole gauges in the proposed TB Leingang #1 and TB Leingang #2 injection wells and the Milton Flemmer #1 monitoring well.

(31) The storage facility operator shall implement surface air and soil gas monitoring as proposed.

(32) This storage facility authorization and permit shall be docketed for a review hearing at least once every five years from commencement of injection to determine whether it should be modified, revoked, or minor modification made, pursuant to NDAC Section 43-05-01-05.1(4).

(33) The storage operator shall file minor modification to the permit requests pursuant to NDAC Section 43-05-01-12.1 through a Facility Sundry Notice form.

(34) The storage facility operator shall pay fees pursuant to NDAC Section 43-05-01-17 annually, on or before the last business day in June, for the prior year's injection, unless otherwise approved by the Director.

(35) The storage facility operator must obtain a Commission determination by separate hearing on whether the current proposed carbon dioxide sources contribute to the energy and agricultural production economy of North Dakota. The storage operator shall not receive authorization to inject until the fees are determined by subsequent hearing and order of the Commission.

(36) For each new additional carbon dioxide source, the storage facility operator must obtain a Commission determination on whether the source contributes to the energy and agriculture production economy of North Dakota, before it is approved to be stored. If the Commission deems a carbon dioxide source does not contribute to the energy and agricultural production economy of North Dakota, the fees will be determined by hearing, pursuant to NDAC Section 43-05-01-17(1)(b).

(37) The operator shall implement a data sharing plan that provides for real-time sharing of data between Summit Carbon Storage #1, LLC, Summit Carbon Storage #2, LLC, Summit Carbon Storage #3, LLC, and SCS Carbon Transport LLC. If a discrepancy in the shared data is observed, the party observing the data discrepancy shall notify all other parties, take action to determine the cause, and record the instance. Copies of such records must be filed with the Commission upon request.

(38) This order shall remain in full force and effect until further order of the Commission.

Dated this 12th day of December, 2024.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

/s/ Doug Burgum, Governor

/s/ Drew H. Wrigley, Attorney General

/s/ Doug Goehring, Agriculture Commissioner