

# NEBRASKA GEOLOGICAL SOCIETY



## 2021 Field Trip

October 16-18, 2021

### INSTRUCTIONS

- 1) **Scan, photocopy, or photograph** your registration and waiver forms and check\* (payable to “The Nebraska Geological Society”) and **email to the Society Vice President ([csteele@inebraska.com](mailto:csteele@inebraska.com)) and President ([dhallum2@unl.edu](mailto:dhallum2@unl.edu)).**
  
- 2) Register and pay **ONLINE!**
  - a. Or mail your check\*, along with completed Registration and Waiver forms, to Jeremy Davis, Treasurer, Nebraska Geological Society, P.O. Box 33, Gretna, Nebraska 68028-0033.

#### **Transportation, meals and lodging**

All transportation to/from field trip stops is the responsibility of the participant. Participants are responsible to secure their own lodging and provide their own meals.

Limited housing may be available at Niobrara State Park if any are interested. Cabins and some campsites can be reserved online at the Nebraska Game and Parks [link](#). Options in Niobrara include [Whitetail River Lodge](#), [Sportsmen's Bar and Two Rivers Hotel](#), and [Ohiya Casino & Resort](#). Crofton may have a place or two, and there are many options in and around Yankton.

#### **Registration**

A completed registration form is required for all participants. **Participation in the field trip cannot be confirmed until a properly completed registration form and waiver are submitted, and the total registration cost is received by the Society Treasurer or confirmed through web payments.** Applicants who provide a scan of their completed registration and waiver forms to the Society Vice President ([csteele@inebraska.com](mailto:csteele@inebraska.com)) will be added to a provisional attendance list.

#### **Waiver**

A signed waiver form is required, and participation in the field trip cannot be confirmed until the original signed waiver form is received by the Society Treasurer. Each participant must sign a separate waiver form. The original signed waiver form(s) should be submitted with the registration package, and scanned waiver forms sent electronically to the Society Vice President ([csteele@inebraska.com](mailto:csteele@inebraska.com)). **All participants must be listed on a waiver form.**

#### **Continuing Education**

Participants holding licenses under the Nebraska Department of Health and Human Services (NDHHS) Water Well Construction, Monitoring Well Supervisor, and Pump Installation occupations are eligible for up to fifteen (15) continuing education credits (Four on day 1, Six on day 2, Five on day 3). To accommodate the Continuing Education

Program, a scanner will be made available once each day and NDHHS licensees will be able to scan their Continuing Education Verification IDs. Attendees will need to attend the entire day to scan their ID and earn CEUs. The table listing attendees will be provided to the NDHHS by the Nebraska Geological Society after the trip is complete.

## NEBRASKA GEOLOGICAL SOCIETY



### 2020 Field Trip

### REGISTRATION

Registrant's Name:

Email:

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Registrant's Name:

Email:

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Registrant's Name:

Email:

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Registrant's Name:

Email:

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Registrant's Name:

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Registrant's Name:

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Total Number of Attendees: \_\_\_\_\_ (\$100 each)

Total Registration Cost Enclosed: \_\_\_\_\_

**WAIVER AND RELEASE OF LIABILITY for Field Trip Activities**

**DISCLAIMER: The Nebraska Geological Society is NOT RESPONSIBLE** for any injury or loss of property to any person participating in **NGS Field Trip Activities** for any reason whatsoever, including ordinary negligence.

This **WAIVER** and **RELEASE OF LIABILITY** was executed by the **Releasor** as identified below in favor of the **Nebraska Geological Society and its field trip sponsors:** Robert F. Diffendal, Jr., Susan Olafsen Lackey, and Douglas Hallum for **The Nebraska Geological Society 2021 Field Trip**, scheduled on October 16-18, 2021, from Spencer to Homer, Nebraska.

The **Releasor** wishes to participate in **NGS Field Trip Activities**. In consideration for the privilege of participation in the program, the **Releasor** hereby **RELEASES** and covenants not-to-sue the **NGS and Field Trip Sponsors** for any and all present and future claims resulting from ordinary negligence on the part of the **NGS and Field Trip Sponsors** for property damage, personal injury or illness, or wrongful death arising as a result of my engaging in, using NGS Field Trip Activities thereto, wherever, whenever, or however the same may occur. **Releasor hereby voluntarily waives** any and all claims or actions resulting from ordinary negligence, both present and future, that may be made by **Releasor's family, estate, personal representative, heirs, or assigns**.

I have read and understand that this **WAIVER** is intended to be as broad and inclusive as permitted by the laws of the State of Nebraska and agree that if any part is held invalid, the remaining parts of this **WAIVER AND RELEASE** will continue in full force and effect as intended. I further agree the venue for any legal proceeding shall be in the State of Nebraska.

I understand the rights that I am **waiving** and that I am freely signing this **WAIVER AND RELEASE**. I have read and fully understand that by signing this agreement I am giving up legal rights and remedies, which may be available to me for ordinary negligence of the **NGS**. I further agree to follow and abide by the regulations and rules as they pertain to NGS Field Trip Activities and to reimburse and make good to the **NGS** any loss, damage, or cost the **NGS** may have to pay as a result of my participation in NGS Field Trip Activities.

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**RELEASOR (Signed)**

**RELEASOR (Printed)**

Date

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Emergency Contact

Contact Phone #

Contact Address, City & State

**GENERAL INFORMATION  
AND  
APPROXIMATE FIELD TRIP SCHEDULE**

(All times listed are in Central Standard Time except as noted)

**Program Background**

The field trip will provide an overview of the geology and hydrogeology of northeast Nebraska, the groundwater quality and quantity issues unique to the region, and ongoing work relating to water quality and geologic (hydrostratigraphic) framework, particularly involving remote sensing technology. This program will be comprised of an auto tour with several stops focusing on two areas on Saturday October 16 to examine the Spencer Dam site and Niobrara State Park. Five stops on Sunday, October 17 will see participants visiting water and aquifer framework projects in the region, as well as locations with outstanding geology and features from geological hazards (flooding and landslides). Four stops on Monday, October 18 will complete the trip by examining Carlile Shale, a historical site with geological significance, and will conclude by examining older strata found in Ponca State Park and an outcrop of Dakota Sandstone in Homer, NE.

Day 1 (October 16, 4 CEUs)

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|----------------|---|
| 11:00 (20 min) | Start at O’Neill Superfoods, O’Neill, NE. Trip orientation and safety meeting.  |
| 12:00 (1 hr)   | Spencer Dam – view the ruins of the Spencer Hydroelectric facility and dike destroyed in the spring of 2019 by ice-laden floodwaters and hear how it happened from a local resident (provisionally Terry Julesgard - Lower Niobrara NRD General Manager?), discuss the geology exposed at the site, and discuss the landslide documented at the location. |
| 14:00 (3 hr)   | Niobrara State Park – explore geology and geological hazards at several locations in/near Niobrara State Park, including Niobrara Formation, Pierre Shale, macro and micro fossils, evidence of landslides and flooding impacts.  |

Day 2 (October 17, 6 CEUs)

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|----------------|--|
| 8:00 (15 min)  | Start at Niobrara Trading Post in Niobrara. Introduction and Day 2 overview of the trip.   |
| 8:30 (30 min)  | Maiden’s Leap – discuss the history and geology of this local landmark. Or visit landslide site adjacent to Verdigre Creek and observe evidence of movement illustrated by offset roadbed.   |
| 9:30 (2 hr)    | Cedar-Knox Rural Water Project – Tour the surface water treatment plant and surface water intake. Discuss silt encroachment and other challenges of diverting surface water from a reservoir, and their 3 year groundwater project. Examine the Niobrara Chalk along the lakeshore and Pierre Shale at the crest of the bluff. |
| 12:00 (1 ½ hr) | Lunch – Picnic lunch (bring your own) at the Bloomfield State Recreation Area. Opportunity to examine another outcrop of Niobrara Formation along the Lewis and Clark Lake shoreline. (1 hour for lunch, 30 min for continuing education)  |
| 14:00 (2 hr)   | Lewis and Clark Visitor Center – USACE staff will give a guided tour (or background and history presentation) of the Gavins Point Dam and Powerhouse.  |
| 16:30 (2 hr)   | Bazile Creek – Discuss the National Water Quality Initiative, the Bazile Groundwater Management Area Plan, and University of Nebraska demonstration farm.  |

18:30 Return to lodgings

Day 3 (October 18, 5 CEUs)

8 am (15 min) Start at Niobrara Trading Post in Niobrara. Introduction and Day 3 overview of the trip.

9:15 (1 ¼ hr) Road cut – Hwy 15. Examine Carlile Shale exposed and discuss the lithostratigraphy of the strata exposed.

11:30 (30 min) Ionia volcano – visit the famed site noted in the journal of William Clark (Aug 24, 1804) and discuss the mystery of the burning organic-rich lower units, and the hypothesis regarding its cause.

12:30 (2 ½ hr) Ponca State Park – Explore the stratigraphic section, glacial erratic boulders used in construction, and loess deposits at Ponca State Park. (Bring sack lunch for on the trail)

16:00 (1 hr) Homer, NE – Visit an outcrop of Dakota Group rocks and discuss its lithostratigraphy and use as primary source of underground drinking water in northeast Nebraska.

17:00 Return home