

U.S. Nuclear Regulatory Commission

Crow Butte Resources, Inc. In Situ Uranium Recovery Facility Crawford, Nebraska

May 18-19, 2021 Site Visit and Additional Information Gathering Activities

Trip Report

1.0 INTRODUCTION

On May 18, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff and its contractor, SC&A, Inc., participated in a site visit with representatives of the Oglala Sioux Tribe at the Crow Butte Resources, Inc. (CBR) in situ uranium recovery (ISR) facility in Crawford, Nebraska. The purpose of the site visit, as discussed in meetings between the Tribe and NRC staff, was to provide an opportunity for tribal representatives to become familiar with the site and to assist them in providing input to the NRC on elements of a survey methodology to identify sites of significance to the Tribe within the CBR license area that could be impacted by continued operation of the CBR ISR facility under the renewed license.

In addition, on May 19, 2021, the NRC staff and contractor visited the Museum of the Fur Trade in Chadron, Nebraska; the Agate Fossil Beds National Monument in Harrison, Nebraska; and the Fort Robinson National Historic Landmark and Fort Robinson Museum near Crawford, Nebraska to gather additional information about history and cultural resources studies conducted in the region.

2.0 BACKGROUND

The CBR ISR facility is located approximately four miles southeast of the City of Crawford in Dawes County, Nebraska. The CBR ISR site encompasses approximately 3,300 acres, of which approximately 1,100 acres have been impacted by ISR operations (see CBR's Figure 1.7-2 at Agencywide Documents Access and Management System [ADAMS] [Accession Number ML20344A379](#), which shows CBR's current license area and mine units¹).

In November 2020, the NRC staff resumed efforts to address deficiencies identified in the Atomic Safety and Licensing Board's (Board's) 2016 partial initial decision, LBP-16-7, related to the staff's cultural resources review of the CBR ISR facility license renewal application. In December 2020, as part of this effort, the NRC staff re-initiated discussions with the Oglala Sioux Tribe seeking input on approaches for identifying sites of significance to the Tribe that could be affected by the continued operation of the CBR ISR facility ([ADAMS Accession No. ML20343A037](#)).

Representatives of the Tribe and the NRC staff discussed a possible site visit during two meetings held in February ([ADAMS Accession No. ML21057A131](#)) and April 2021 ([ADAMS Accession No. ML21120A279](#)). The NRC staff coordinated the site visit with the Tribe's counsel and CBR. The agreed-upon plan was to spend 2-4 hours driving around the site with stops to view the site from various vantage points and to see areas where tribal cultural resources had been identified during the previous cultural resource studies conducted at the CBR site in 1980s.

¹ Although CBR's Figure 1.7-2 shows mine unit 11 as proposed, mine unit 11 has since been developed.

In advance of the scheduled May 18, 2021, site visit, the NRC coordinated a virtual pre-site visit information session on May 13, 2021. CBR provided an overview of the ISR facility and operations. The slides, which were provided to the Tribe ahead of the pre-site visit information session, can be found at [ADAMS Accession No. ML21146A216](#). CBR's presentation also included a table summarizing the cultural resources identified in the 1987 Bozell & Pepperl cultural resources study report.

3.0 SUMMARY OF THE SITE VISIT

3.1 CBR ISR Site Visit

On May 18, 2021, representatives from the Oglala Sioux Tribe, the NRC, and CBR gathered at the CBR office. Participants included: (i) representatives from the Tribe, Mr. Andrew Reid (counsel to Tribe), and Dr. Hannan LaGarry;² (ii) representatives from CBR; and (iii) the NRC staff and contractor. Enclosure 1 includes the full list of participants.

3.1.1 Initial Discussion

After introductions and before embarking on the site tour, Mr. Reid presented his understanding of the Board's decision (LBP-16-7) to the representatives of the Tribe. He then proceeded to discuss the need to involve Mr. Tim Mentz, Sr. as the Tribe's expert in identifying and assessing sites of significance to the Tribe. Mr. Reid stated that Mr. Mentz, Sr. has experience in identifying cultural resources of significance to Lakota tribes and had been able to, for example, identify numerous cultural resources of significance to the Lakota at the Dakota Access Pipeline project. Mr. Thomas Brings, the Tribe's Tribal Historic Preservation Officer, responded that they [the Oglala Sioux Tribe representatives] too are experts and can equally identify and assess cultural resources of significance.



Figure 1. CBR ISR facility entrance.

In response to a question about availability of information regarding cultural resources, Ms. Diana Diaz-Toro explained that the NRC staff's efforts are specifically focused on the identification of sites of significance to the Tribe that could be affected by the continued operation of the CBR ISR facility under the renewed license. She further explained that publicly available letters from the State Historic Preservation Officer, reports, and surveys specific to the license renewal of the CBR ISR facility had been previously provided to the Tribe. Additionally,

² Mr. Reid stated that he invited Dr. LaGarry to participate at the site visit because of his knowledge of water resources in the region. Dr. LaGarry introduced himself as a geologist and paleontologist and represented during the site tour that he is knowledgeable of Lakota cultural resources.

Ms. Diaz-Toro indicated that non-publicly available reports and maps would be provided to the Tribe shortly after the site visit.³

Mr. Reno Red Cloud mentioned that all government-to-government consultation with the Tribe must be conducted consistent with the Tribe's consultation policy in Ordinance 11-10.

Ms. Diaz-Toro and Mr. Spangler explained that the Board resolved the contention related to government-to-government consultation obligations under National Historic Preservation Act in favor of the staff, but that the NRC staff and contractor continue to reach out to the Tribe seeking its input on the development and implementation of the methodology and reporting of the results.

Mr. Reid then continued explaining to the Tribe's representatives his view that the NRC staff now has to adequately address the intangible interests of the Tribe in an environmental assessment (EA) supplement. Mr. Harold Salway commented that the CBR ISR operations had affected everything on which the Tribe survives, including water (which is considered medicine), air, and herbs used in medicine.

Mr. Reid also explained that the NRC staff had requested input from the Tribe about elements to consider in developing a survey methodology to identify sites of significance to the Tribe. Mr. Reid emphasized that the input to be provided should include all aspects that the Tribe determines must be included in a survey methodology, including the timeframe and the areas to be surveyed. Mr. Reid suggested that the Tribe might want to survey areas outside of the license area boundary.⁴ Mr. Brings suggested the Tribe might want to conduct the survey during the four seasons, which would result in a one year effort; conduct encampments for a period of time to be determined; conduct healing ceremonies at the site; and consider building an altar for ceremonies. With respect to gathering information from Tribal Elders, Mr. Reid suggested that an agreement could be made with the NRC to record and transcribe discussions with Tribal Elders.

Mr. Brings then asked about the NRC staff's timeframe and length of the survey. Ms. Diaz-Toro referred to the NRC staff's March 5, 2021 letter ([ADAMS Accession No. ML21061A262](#)), which requested input on elements of a methodology and provided a proposed project schedule ([ADAMS Accession No. ML21061A261](#)). She explained that the proposed project schedule appropriately balances the goals of all parties, including the NRC staff's goal to conduct its licensing reviews in a thorough and timely manner. Ms. Diaz-Toro stated that the goal is to complete the survey by October 2021. Additionally, she explained that the NRC staff identified potential elements of a survey methodology in the March 5 letter, including examining the site at two separate times and conducting information-gathering sessions with Tribal Elders. Ms. Diaz-Toro further clarified that the NRC staff's contractor, Mr. Spangler, will be developing the survey methodology with input from the Tribe and will prepare the survey report based on the Tribe's survey findings. The draft survey report will then be provided to the Tribe for review and comment before it is finalized. Ms. Diaz-Toro also explained that the final survey report would inform the EA supplement, which would be provided to the Tribe for review before it is published as a draft for public review and comment. Ms. Diaz-Toro acknowledged that the information resulting from a survey can be considered sensitive and confidential and the NRC staff would protect the information in accordance with applicable law. Finally, she asked the

³ Non-public documents were provided to Mr. Brings, Mr. Salway, and Mr. Reid on May 24, 2021.

⁴ Mr. Reid referred to the area shown in blue on the map shown in CBR's May 13, 2021, pre-site visit presentation. That area represents the license area boundary.

Tribe, in developing its input for the survey methodology, to consider that the CBR ISR is an operating facility and, therefore, safety and security aspects will bound the activities that can be carried out at the site.

Ms. One Feather asked whether the NRC staff had brought in Mr. Sebastian LeBeau as a consultant, as was done during the cultural resource identification efforts for the Powertech Dewey-Burdock ISR project. The NRC staff and contractor clarified that Mr. LeBeau had not been hired as a consultant to the NRC staff for either the Powertech Dewey-Burdock ISR project or the Crow Butte ISR license renewal project. Mr. Spangler explained, however, that Mr. LeBeau's methodology had been used to inform the draft survey methodology developed for the Dewey-Burdock ISR project. Additionally, Ms. One Feather suggested that other tribes should also be brought into the process.

Mr. Reid stated that the uranium that has generated significant profits for the licensee is found within the Tribe's ancestral lands (the "unceded lands") and is therefore owned by the Tribe, and commented that CBR has earned millions of dollars from the uranium over the life of the facility. He then concluded by asking about a possible second site visit for a smaller group of individuals supporting the Tribe who were not available to attend the May 18, 2021, site visit. CBR and NRC staff responded that the Tribe's request should be made directly to the NRC staff in writing.⁵

CBR then discussed the facility's safety and security protocols and collected the signed site hazard assessment forms and Covid-19 survey forms from all participants, and the group proceeded with the site tour.

3.1.2 Site Tour

The site tour, led by CBR, offered an opportunity for the Tribe to observe the location of wellfields and associated buildings, disturbed and undisturbed areas within the license area boundary, the extent of the disturbance, and the landscape of the site and surrounding area. As described during the May 13, 2021, pre-site visit information session and as shown during the May 18 site visit, the area where ISR operations occur has been significantly disturbed (e.g., by installation of injection, production, and monitoring wells, construction of underground pipe systems supporting the wellfields, header houses, ponds, and buildings).

The group drove on county roads and the two-track roads within the CBR ISR site and stopped near each of the nine Native American sites identified in the 1987 Bozell & Pepperl cultural resources study report. The site tour provided the opportunity to view the CBR ISR site, wellfields, buildings, and landscape from different vantage points. Each time the group stopped to view the area where a Native American site is located, Mr. Walter Nelson of CBR provided context by reading CBR's summary description of each site based on the 1987 Bozell & Pepperl report and showing its location on a map.⁶

⁵ At the request of the Tribe's counsel, Mr. Reid, a second site visit was held June 2, 2021. The participants included Mr. Tim Mentz, Sr. and Mr. Tim Mentz, Jr. of Makoche Wowapi, and Mr. Thomas Brings from the Oglala Sioux Tribe. Consistent with Mr. Reid's request, the site tour was limited to visiting the Native American sites identified in the 1987 Bozell & Pepperl report.

⁶ On May 24, 2021, the NRC staff provided a similar map to the Tribe. The NRC staff's map is not publicly available.



Figure 2. View of CBR ISR wellfields and Crow Butte (leftmost butte).

The group first visited isolated finds FN-1 and FN-2. Isolated find FN-1 is described in the 1987 Bozell & Pepperl report as “surface; 1 chipped stone flake; unassigned Native American.” Isolated find FN-2 is described as “buried; bone, charcoal; unknown cultural association.” Both isolated finds are located along Squaw Creek. While viewing the area where isolated find FN-2 is located, the representatives of the Tribe observed part of the berm constructed along Squaw Creek, which Mr. Nelson clarified was constructed by CBR. A couple of tribal participants suggested that FN-2 might be of importance based on the charcoal deposit.



Figure 3. View of the area where isolated find FN-2 is located.

In response to a question from a Tribal representative, Mr. Spangler discussed the difference between an isolated find and a site. He said that an isolated find typically consists of a few artifacts that provide minimal information on culture or time period, while a site consists of a physical location containing remains of past human activities with more than a few artifacts. Additionally, in response to a question about Section 106 eligibility determinations, Mr. Spangler and Ms. Diaz-Toro explained that new information resulting from the identification efforts would

be used to evaluate the eligibility of the sites for listing on the National Register of Historic Places.

The group also visited sites 25DW114 and 25DW116. Site 25DW114, located in a broad terrace, is described in the 1987 Bozell & Pepperl report as follows: “surface; chipped stone tools, flaking debris, trade tools, bone, primary component is Middle Archaic, although Paleo-Indian, Late Archaic, Late Pre-historic and Historic components are also present.” The site covers an area of 150,000 m². Site 25DW116 is described as “surface; chipped stone flaking debris, unassigned Native American” and covers a much smaller area (2 m²) compared to site 25DW114.



Figure 4. View of the areas where sites 25DW114 (top) and 25DW116 (bottom) are located.

The group then visited sites 25DW194 and 25DW196. Site 25DW194 is described in the 1987 Bozell & Pepperl report as “surface/buried; chipped stone flaking debris, bone; unassigned and possible historic Native American components.” CBR mentioned that the 1987 Bozell and Pepperl report further described the site as a Native American burial that was exposed and removed. This statement by CBR generated significant interest among the Tribal

representatives.⁷ Representatives of the Tribe asked for additional information about the removal of the burial. CBR referred the Tribe to the 1987 Bozell & Pepperl report for details.



Figure 5. View of the area where site 25DW194 is located (top). Group discussion (bottom).

⁷ The description in the 1987 Bozell & Pepperl report is as follows:

Site 25DW194 consists of a very sparse scatter of chipped stone debris and bone fragments exposed on the surface of a cultivated field (winter wheat). Surface materials were observed within a 1600 meter area. An historic Native American burial was exposed and removed on a high ridge immediately north of the site in the 1950s during gravelling operations (L. Stetson, personal communication).

The report also states that “no evidence of burials was obtained during the current study.” ([ADAMS Accession No. ML15128A685](#) at page 47). An NRC trip report from 2012 documents further investigation of the reported burial site by Dr. Paul Nickens, the NRC contractor at the time. (ADAMS Accession No. [ML15131A102](#) at pages 20-21).

Site 25DW196 is described in the 1987 Bozell & Pepperl report as “surface; chipped stone tool, flaking debris, bone; unassigned Native American.” It consists of a long and narrow ridge and covers an area of approximately 80,000 m².



Figure 6. View of a portion of site 25DW196 is located.

Site 25DW197 is described in the 1987 Bozell & Pepperl report as “surface; chipped stone tool, flaking debris, bone; unassigned Native American.” The site covers an area of approximately 150,000 m² and is located on a ridge. The group noted the large areas that sites 25DW196 and 25DW197 cover.



Figure 7. View of a portion of site 25DW197 (ridge seen in the distance).



Figure 8. Group discussions.

The group also visited site 25DW198, which is described in the 1987 Bozell & Pepperl report as “surface/buried; chipped stone tools and flaking debris; unassigned Native American.” The site covers an area of approximately 30,000 m² and is located at the top of a hill. CBR noted to the group that additional testing and evaluation of this site had been conducted.



Figure 9. View of the area where site 25DW198 is located.

The final stop was to view site 25DW195. This site is described in the 1987 Bozell & Pepperl report as “surface; chipped stone tool, flaking debris, bone; unassigned Native American.” While visiting this site, representatives of the Tribe shared tribal stories about Crow Butte, which is considered to be culturally significant by several Lakota and Crow Tribes.



Figure 10. View of the area where site 25DW195 is located (top) and group discussions (bottom).



Figure 11. Another view of wellfields and Crow Butte (leftmost butte).

At the end of the site tour, representatives of the Tribe led a prayer to conclude the site visit.

3.2 NRC Visit to Nearby Historic Sites and Museums

The trip also afforded an opportunity for the NRC staff and contractor to visit nearby Federal and State historic sites and museums to meet with local historians and gather additional information about the history of the region, including relevant documents (e.g., reports on tribal cultural resources studies conducted in the region). On May 19, 2021, the NRC staff and contractor visited (i) the Museum of the Fur Trade; (ii) Agate Fossil Beds National Monument; and (iii) Fort Robinson National Historic Landmark and the Fort Robinson Museum.

Museum of the Fur Trade

The NRC staff and contractor visited the Museum of the Fur Trade, which is located in Chadron, Nebraska. The NRC staff and contractor had the opportunity to meet with Dr. James A. Hanson, a recognized expert historian for the region. Based on Dr. Hanson's suggestions, Mr. Spangler bought the following literature to augment the historical context of the Lakota in the White River region, Lakota interactions with other Tribes, and the Red Cloud Agency and Spotted Tail Agency periods:

- Hanson, Charles E. Jr. (editor). *The David Adams Journals*. Museum of the Fur Trade, Chadron, Nebraska. 1994.
- Hanson, James A. (editor). *Spotted Tail: Renaissance Man of the Lakotas, A Collection of Essays in Honor of a Great Leader*. Museum of the Fur Trade, Chadron, Nebraska. 2020.
- Hanson, James A. *When Skins Were Money: A History of the Fur Trade*. Museum of the Fur Trade, Chadron, Nebraska. 2017.
- Hanson, James A., and LaRee Wyatt. *The Battle of Crow Butte*. Museum of the Fur Trade Quarterly Vol. 45 Nos. 3-4. Chadron, Nebraska. 2009
- Paul, R. Eli. *Blue Water Creek and the First Sioux War, 1854-1856*. University of Oklahoma Press, Norman. 2004
- Potter, James E. (editor). *From Our Special Correspondent: Dispatches from the 1875 Black Hills Council at Red Cloud Agency, Nebraska*. Nebraska State Historical Society, Lincoln. 2016
- Wood, W. Raymond, and Thomas D. Thiessen. *Early Fur Trade on the Northern Plains: Canadian Traders among the Mandan and Hidatsa Indians, 1738-1818*. University of Oklahoma Press, Norman. 1985



Figure 12. View of Crow Butte.

Agate Fossil Beds National Monument

During the trip, the NRC staff and contractor visited the Agate Fossil Beds National Monument in Harrison, Nebraska, approximately 40 km (25 mi) southwest of the CBR ISR site. Previous NRC trip reports indicate that tribal cultural resource studies and surveys have been conducted in the Agate Fossil Beds area. The cultural resources program manager was not present on the day of the visit, so the NRC staff left a message explaining the reason for the visit and providing contact information. The NRC staff followed up via e-mail inquiring about the possibility of obtaining copies of the following documents:⁸

- Hughes, David T., *Cultural Affiliations of Native Americans to the Region Encompassing Scotts Bluff National Monument and Agate Fossil Beds National Monument in Northwestern Nebraska*. 1998.
- White, David M., *Mako Washte: An Ethnographic Overview and Oral History of the Badlands National Park*. Applied Cultural Dynamics, Santa Fe, New Mexico. 2002.
- Albers, Patricia C., *The Home of the Bison: An Ethnographic Study of Traditional Cultural Affiliation: Wind Cave National Park, South Dakota*. Department of American Indian Studies, University of Minnesota, Minneapolis, Minnesota. 2003.
- LeBeau, Sebastian C., *Wico'Cajeyate: Traditional Cultural Property Evaluation, Agate Fossil Beds National Monument*. 2003.
- National Park Service, *Cultural Landscapes Inventory: Red Cloud Campsite, Agate Fossil Beds National Monument*. 1988 (revised 2003).
- Bozell, John R., *An Archaeological Overview and Assessment of Agate Fossil Beds National Monument, Sioux County, Nebraska*. 2004.
- National Park Service, *Cultural Landscapes Inventory: Inventory Overview, Agate Fossil Beds National Monument*. 2010.

⁸ These documents appear to only be available at the Agate Fossil Beds National Monument.

- National Park Service, *Cultural Landscapes Inventory: Red Cloud Campsite, Agate Fossil Beds National Monument*. 2010.

Fort Robinson National Historic Landmark, and Fort Robinson Museum

The NRC staff and contractor also visited the Fort Robinson National Historic Landmark and the Fort Robinson Museum, located west of Crawford, Nebraska, and approximately 12 km (6 mi) from the CBR ISR site. Fort Robinson and the Red Cloud Agency were designated as a National Historic Landmark in 1963. The museum's exhibits include, among other things, the history of the Red Cloud Agency and the Sioux War of 1876. After a short discussion with the site manager about literature related to the history of Indian tribes in the region and tribal cultural resource studies, the site manager referred the NRC staff and contractor to the Nebraska State Archeologist, John R. ("Rob") Bozell.

**Crow Butte Resources, Inc. In Situ Uranium Recover Facility
Crawford, Nebraska**

May 18, 2021 Site Visit

List of Participants

Oglala Sioux Tribe

Harold Salway, Director, Natural Resources Regulatory Agency (NRRA)
Thomas Brings, Tribal Historic Preservation Officer, Cultural Affairs and Historic Preservation Office
Reno L. Red Cloud, Administrator, Water Resources Department, NRRA
Jeffrey Not Help Him, Manager, 5th Member Office
Carl Eagle Elk, Natural Resource Specialist
Benedict Good Buffalo, Spiritual Leader
Leola L. One Feather, Tribal Historic Preservation Office
Andrew Reid, Counsel for the Oglala Sioux Tribe
Hannan E. LaGarry, Geologist

Crow Butte Resources, Inc.

Doug Pavlick, General Manager, US Operations
Walter Nelson, Safety, Health, and Environmental Quality (SHEQ) Coordinator

U.S. Nuclear Regulatory Commission (NRC)

Diana Diaz-Toro, Project Manager
Jerry Spangler, NRC Contractor, SC&A, Inc.