



October 31, 2024

Mr. Reice Haase
North Dakota Industrial Commission
600 East Boulevard Avenue
Bismarck, ND 58505

Re: Phase IV Grant Report

Dear Mr. Haase:

I am writing to formally request the closure of grant G-047-090, awarded for the North Dakota Petroleum Foundation's project, "History of the North Dakota Oil and Natural Gas Industry." Unfortunately, due to limited staff time and resources, we were unable to fully utilize the grant funds within the allocated timeframe.

The enclosed report provides a summary of the activities completed under this grant. The Foundation does not have a reimbursement request, as all activities and expenses have been covered by the Foundation.

Please feel free to contact me should you have any questions or require additional information regarding the enclosed report.

Sincerely,

A handwritten signature in black ink that reads "Tessa". The signature is written in a cursive, flowing style.

Tessa Sandstrom
Executive Director

Enclosure

**North Dakota Petroleum Foundation
History of the North Dakota
Oil and Natural Gas Industry**

Contract number: G-047-090

Final Report: October 30, 2024

Applicant: North Dakota Petroleum Foundation

Principal investigator: Ms. Tessa Sandstrom, Executive Director

Program overview

The North Dakota Oil History Project was intended to preserve the history of the oil and gas industry in our state and honoring the men and women—both past and present—who helped build it.

Originally envisioned as a multi-year initiative, the Project aimed to document the history of North Dakota's oil and gas industry through articles and videos. However, due to the onset of COVID-19 in 2020 and several staff and priority changes at the North Dakota Petroleum Foundation, the project could not be completed as planned.

Activities

In the first year of the project (2019), significant time was dedicated to gathering information, conducting research, interviews, and capturing b-roll footage for future video production. Much of this effort involved reviewing historical documents and manuscript collections at the State Archives related to North Dakota's oil and gas industry. Twenty interviews were completed with industry employees, past and present, covering topics such as the early years of oil and gas development in North Dakota, major milestones, and personal stories within the industry.

The onset of the COVID-19 pandemic in 2020 created substantial challenges for the Project. Social distancing guidelines required a halt to live, in-person interviews, and the State Archives were closed or had limited access through much of 2021. During this period, work focused on transcribing interviews, conducting research primarily limited to publicly available books (few of which focused specifically on North Dakota's industry), and initial writing. Toward the end of 2021, the Foundation resumed and conducted six additional interviews.

Since 2022, continued staffing changes, shifting priorities, and limited staff time at the North Dakota Petroleum Council made it difficult to continue the project. The Foundation did produce a video and article commemorating North Dakota's 5 billionth barrel of oil produced from the Bakken, using modern technologies; this content was promoted at the Williston Basin Petroleum Conference in May 2024. Additionally, the Foundation collaborated with BEK Television and Scott Hennen to conduct interviews with key figures at the Conference, capturing personal histories and insights into this milestone and others within the industry and the Bakken.

Due to additional staffing and priority shifts, the North Dakota Petroleum Foundation Board of Directors ultimately decided to suspend the Project indefinitely and release the remaining grant funds.

Program Budget for Final Phase

Final Phase: November 1, 2023 – December 31, 2024

Project Associated Expense	NDIC's Share	Applicant's Share (Cash)	Applicant's Share (In-Kind)¹	Other Project Sponsor's Share	Budgeted Amount (Cash)
Editorial Management					\$ 270,000.00
Salary	\$ 0.00	\$ 0.00	\$ 2,000.00		\$ 2,000.00
Expenses	\$ 0.00	\$ 0.00	\$ 0.00		\$ 00.00
Video Production²					\$ 292,000.00
Fees ³	\$ 0.00	\$ 13,850.00			\$ 1,850.00
Marketing & Expenses					\$ 30,000.00
Website/Publication	\$ 0.00	\$ 0.00	\$ 0.00		\$ 12,000.00
Photo rights, graphics, etc. ⁴	\$ 0.00	\$ 105.00	\$ 0.00		\$ 105.00
TOTAL	\$ 0.00	\$ 13,955.00	\$ 15,955.00		\$ 15,955.00

Respectfully submitted by Tessa Sandstrom, Executive Director, North Dakota Petroleum Foundation

¹ Included 20 hours for researching, writing and producing content for the 5 Billion Bakken Barrels story. Time valued at \$100 per hour.

² Although there was some videoing completed, the labor was covered under previous years' agreements and payments.

³ Production included creation of a video commemorating the 5 Billion Bakken Barrel Production Benchmark.

⁴ Included payments for high-resolution digitizing of photos by the State Archives.

Overall Program Budget

Project Associated Expense	NDIC's Share	Applicant's Share (Cash)	Applicant's Share (In-Kind) ⁵	Other Project Sponsor's Share	Total Spent	Budgeted (Cash)
Editorial Management					\$ 33,747.09	\$270,000.00
Salary	\$ 0.00	\$ 0.00	\$ 31,536.17		\$ 31,536.17	
Expenses	\$ 0.00	\$ 2,210.92	\$0.00		\$ 2,210.92	
Video Production⁶					\$ 91,850.00	\$292,000.00
Fees ⁷	\$ 78,000.00	\$ 13,850.00			\$ 91,850.00	
Marketing & Expenses					\$ 11,601.23	\$30,000.00
Website	\$ 0.00	\$ 9,100.00	\$ 0.00		\$ 9,100.00	
Photo rights, graphics, etc. ⁸	\$ 0.00	\$ 2,501.23	\$ 0.00		\$ 2,501.23	
TOTAL	\$ 78,000.00	\$ 27,662.15	\$ 31,536.17		\$ 137,198.32	\$592,000.00

Respectfully submitted by Tessa Sandstrom, Executive Director, North Dakota Petroleum Foundation

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⁷ Production included creation of a video commemorating the 5 Billion Bakken Barrel Production Benchmark.

⁸ Included payments for high-resolution digitizing of photos by the State Archives.

Appendix:

5 Billion Bakken Barrels Video: <https://www.youtube.com/watch?v=0uoX2hfKqbM>

5 Billion Bakken Barrels Article:

More than 38 years had passed since oil was discovered in North Dakota when industry leaders, elected officials and the public gathered in Williston to celebrate a major milestone: the production of the first cumulative billionth barrel of crude oil produced in North Dakota.

This occasion, commemorated on Friday, October 27, 1989, included an oilfield tour for reporters, speeches, a banquet and a dance. Attendees received vials of oil and a card that read, "This crude oil was taken from an oil well located one mile from Clarence Iverson #1 in North Dakota's Williston Basin oilfield on October 23, 1989 at 3:15 p.m."

During the event, participants praised North Dakota's oil history and anxiously discussed its future. The state had ridden its fair share of booms and busts, but a new technique was showing some promise.

Two years prior, on July 1, 1987, Meridian (Burlington) Oil deployed horizontal drilling in the Upper Bakken Shale for the first time. It was known for years the Bakken Formation contained billions of barrels of oil, but few had managed to produce it economically. Burlington's well proved that horizontal drilling increased the success of striking oil in the Bakken Formation and it spurred new activity that continued through the early 90s.

The activity stagnated, however, as the low permeability reservoir was still not giving up enough oil to be economic. By 1996, the North Dakota Geological Survey deemed the venture unfeasible unless a way to stimulate the rock could be found. Until then, they reported, the Bakken would only be seen as a "bailout" zone.

Harold Hamm, CEO of Continental Resources, was an early adopter of horizontal drilling and had opened the Cedar Hills Field in southwest North Dakota, which was the first significant, horizontally-drilled, commercial oilfield in North Dakota in the 1990s. He had been watching the activity in the Bakken closely.

"We knew that it took more than just a horizontal wellbore [to unlock the Bakken]," he said. "We had had to figure out better ways to do it to get to the point that it was commercial."

In a turn of events, a "bailout" operation in the Bakken would lead to a significant breakthrough. In 1995, Kelly Oil and Gas drilled the Albin-FLB 2-33 targeting the Nisku formation in Montana. The well was dry, but seeing porosity in the Middle Bakken, they decided to "bail out," or tap the formation to try and get any oil they could. They decided to perf the well, and to their surprise, the well not only produced—it kept flowing.

Kelly Oil & Gas had an idea that the Middle Bakken could be drilled horizontally and began reviewing old well logs. It was then that they realized oil wasn't in the Upper Bakken as previously believed, but rather, the Middle Bakken. They were sitting on a potentially massive field that geologist Dick Fridley coined "the Sleeping Giant."

In 2000, after partnering with Lyco Energy, they drilled the Burning Tree State 36-2H well in Richland County, Montana, using both hydraulic fracturing and horizontal drilling for the first time. This innovative approach paved the way for the discovery and development of the Elm Coulee Field in Montana.

Continental Resources was a major developer in the Elm Coulee Field and soon set its sights on North Dakota. Although they had found the key to the Bakken in Montana, it would take more to unlock it in North Dakota. It would take perseverance.

“What worked in Montana did not work in North Dakota. It was something some people would probably give up on. It was hard. But we were good drillers and we felt like we knew we could do it,” said Hamm, who would lead Continental to become one of North Dakota’s biggest producers.

Meanwhile, geologist Michael S. Johnson had been searching for unleased lands with a geology similar to Elm Coulee and settled on a prospect 110 miles away near Parshall, ND, in Mountrail County. He and his partners leased a total of 44,000 acres and actively looked for months for an operator to drill it. Finally, in 2005, they drew the interest of EOG Resources, which was officially assigned the “Parshall Prospect” in early 2006.

By April 11, EOG was drilling and on June 6, 2006, they hit it big. The Bakken Boom had begun. Drilling and leasing activity took off at a frenzied pace in what was to become one of the most prolific oil fields in the United States.

The pace of development in the Bakken was rapid. When the state was celebrating its billionth barrel in 1989, the Bakken had only produced about 14 million cumulative barrels. By 2004, the Bakken production was hovering at 38 million barrels produced. By February of 2024—just 20 years after modern development technologies were deployed in North Dakota—the Bakken surpassed its 5th billionth barrel of oil.

The technological revolution that unlocked the Bakken not only led to this remarkable increase in production; it also unlocked billions of additional barrels of oil once thought to be inaccessible. Because of the ingenuity and tenacity of today’s Bakken pioneers, North Dakota can look forward to billions more in production from current wells and new drilling.