
From: Hayes, Miriam (Nicole) <mnhayes@blm.gov>
Sent: Wednesday, March 13, 2019 4:31 PM
To: coastalplainAR; Sean Cottle
Subject: Fwd: [EXTERNAL] Comment on ANWR DEIS

Nicole Hayes
Project Coordinator
Bureau of Land Management
222 W. 7th Avenue #13
Anchorage, Alaska 99513
Desk: (907) 271-4354
Cell: (907) 290-0179

----- Forwarded message -----

From: **Donna Manders** <donnabmanders@gmail.com>
Date: Wed, Mar 13, 2019 at 3:05 PM
Subject: [EXTERNAL] Comment on ANWR DEIS
To: <mnhayes@blm.gov>

Dear Ms. Hayes,

Here is my comment on the ANWR DEIS regarding feasibility of rehabilitating gravel pads on



In 1985-86, an exploratory well was drilled 14 miles east of Kaktovik on private lands in the Arctic National Wildlife Refuge.

All equipment was transported during winter months on an ice road or flown in to an ice airstrip. All drilling was done in winter. The rig was operated on an insulated timber pad that was removed when work was completed.

Following exploration, government regulatory authorities concluded that there was no significant impact to the tundra or wildlife populations.

AOGA
ALASKA OIL AND GAS ASSOCIATION
THINKING AHEAD

tundra:

Ad in Alaska Magazine, August 1991. With photo of the same well site, claiming 'it's almost like nothing was ever here'.

Link to New York Times story copied below:

<https://www.nytimes.com/2017/12/15/climate/arctic-drilling-anwr.html>

Here's What Oil Drilling Looks Like in the Arctic Refuge, 30 Years Later

By [Henry Fountain](#)

· · · These satellite images of a small part of the Arctic National Wildlife Refuge show the site of what, so far, is the only oil well ever drilled in the refuge, an exploratory well known as KIC-1 that was completed in the mid-1980s. The well was plugged and abandoned, and the drilling equipment and a special timber pad it sat on have long since been removed.

A false-color infrared satellite image from this year (in closer detail at right) shows natural tundra in pink. The yellow area shows the footprint of the old well. (Credit U.S. Fish and Wildlife Service)



But as these infrared images show, **even after three decades, the well's footprint — about 600 feet long on its longest side — is easily distinguishable from the undisturbed tundra around it.**

The arctic refuge is a vast region of tundra: mosses, sedges and shrubs underlain by permafrost. But the area is also believed to contain large petroleum reserves. Since the current boundaries of the refuge were established by an act of Congress in 1980, there has been a [debate](#) over whether oil and gas exploration should be allowed in a portion of the area, 1.5 million acres on the coastal plain. The issue has been revived in recent months, and through the budget-making process Republicans in Congress are perhaps [closer than ever](#) to opening the area to drilling.

Here's the site in 1988, a couple of years after operations at the well ceased, when most of the vegetation was dead:



An infrared photo taken in 1988 shows the area of damaged tundra not long after the drilling site was cleared out. Credit U.S. Fish and Wildlife Service

“It’s easy to do something on the tundra but it’s very difficult to restore,” said Francis Mauer, a retired biologist for the United States Fish and Wildlife Service who worked in the refuge for decades, including the years when the well was in place.

The drillers took care to protect the tundra, creating an ice runway to fly in huge timbers to serve as the pad, instead of a potentially more destructive gravel base. The pad was insulated from the ground as well, and the operators also dug two pits next to it to hold the mud and rock that was drilling waste.

While the timber pad offered some advantages, it effectively killed the vegetation beneath it, said Janet C. Jorgenson, a Fish and Wildlife botanist who has worked in the refuge since 1988 and observed the site for many years. **That initiated changes which continued over the years, despite efforts to reseed the area with grasses.**

Without the vegetative cover to keep the permafrost cold, it began to thaw.



The former well site in 1988. The polygonal patterns in the undisturbed tundra are signs of ice wedges, which in the disturbed area have melted, leading to the pooled water. Credit U.S. Fish and Wildlife Service

Vertical wedges of solid ice melted, creating pools of water. The two pits, which were initially covered with soil, subsided over the years, leading to more pooling. They were topped with gravel a decade ago and now have very little vegetation. Given all the thawing and melting, Ms. Jorgenson said, **about 17 percent of the site is covered in water now, compared with about 2 percent of the surrounding tundra.**

KIC-1 was allowed as part of the 1980 legislation, and was drilled on private native lands within the refuge, east of the village of Kaktovik. Chevron, BP and other companies ran the project, which cost \$40 million. The results of the drilling, whether it revealed the presence of significant oil or not, have not been made public.

These photos of the well site show the pad with drilling equipment and without. It was in place for about a year and a half, from 1985 to 1986, including two winters.

Drilling equipment, left, and the platform it was built on. Credit U.S. Fish and Wildlife Service



Drilling equipment, left, and the platform it was built on.CreditU.S. Fish and Wildlife Service

In the 30 years since KIC-1 was drilled, techniques have changed somewhat. For one thing, directional drilling now allows operators to drill many wells from one pad.

Yet KIC-1 shows how even when care is taken, the delicate landscape of northern Alaska can be damaged by drilling activities, and that the damage can persist.

“Once you start disturbing the tundra vegetation, it takes sometimes nearly forever for the mark to go away,” Mr. Mauer said.

Henry Fountain covers climate change, with a focus on the innovations that will be needed to overcome it. He is the author of "The Great Quake," a book on the 1964 Alaskan earthquake.

A version of this article appears in print on Dec. 16, 2017, on Page A26 of the New York edition with the headline: Even After 3 Decades, Footprint of Oil Well Remains in the Arctic Wildlife Refuge.

In summary, studies show that tundra once disturbed, takes a very, very long time to recover.

Thank you very much for your considerate review of my comments.

Sincerely,

Donna Manders

7727 12th Ave NW

Seattle, WA 98117

PH: 206-735-0503