Potential Mining in the Black Hills and Climate Change – What Could Possibly Go Wrong?

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October 2019
Overview

- Uranium Mining History and Current Situation in the Black Hills
- Gold Mining History and Current Situation in the Black Hills
- How Does Climate Change Tie Into The Situation?
Uranium Mining History and Current Issues in the Black Hills
Uranium Mining

What is uranium for?
- Radioactive and toxic
  - Radioactivity is “forever”
  - Mining uranium has unique risks
    - Cancer
    - Kidney problems
Historical Uranium Mining

- 1951 - 1972
- Public unaware of dangers
- No regulation
Lasting Impacts

- 1962 Tailings Spill into Cheyenne River
- Its fate?

- 169 abandoned mines and prospects
More Recently

- 11 Uranium companies have expressed an interest in the Black Hills
- In situ leaching newer mining method
In Situ Leach Mining

Extraction solution in

Surface

Water + Base + Oxygen

Uranium ore

Ground water Aquifer

Extraction liquid + Uranium and other metals out
Kingsville Dome ISL, TX
Common Types of Water Contamination

- Wastewater ponds
  - Dam breaks
  - Leaking
- Underground water movement out of mining area ("excursion")
- Failure of piping or pump
- ISL mines commonly have dozens of "reportable incidents"
- May contaminate surface and ground water
Proposed Mine -- Azarga Uranium (Powertech)

- Dewey-Burdock project in Black Hills
- Over 10,000 acres
- In situ leach mining
- Along southwestern edge of Hills

Chairman
Alexander Molyneux
Mining Plan

- 4,000 mining wells in Inyan Kara aquifer
- 9,000 gpm of water
  - Enough for 864,000 cows
- Pump wastes into Minnelusa aquifer
- 8 – 18 years
- 3 drinking water aquifers impacted
Permit Process

- 10 permits needed
- Trying to get permits from federal EPA, NRC, BLM, and state DENR
- State processes on hold until federal decisions made
March 2017 EPA issued draft water permits

- Hearings April – May 2017
- 700 people attended
- 92% of comments anti-mining
Environmental Protection Agency

- New draft permits and hearing Oct. 5
  - About 80 comments
  - 100% were against the mining
- Written Comments due Dec. 9
Nuclear Regulatory Commission

- Governs nuclear materials and power plants
- Powertech filed nuclear materials application in 2009

United States Nuclear Regulatory Commission

Protecting People and the Environment
Nuclear Regulatory Commission

- Oglala Sioux Tribe is key part of process
  - Tribal government objected to cultural site survey process
  - Protect cultural and historical resources
- NRC issued license in April 2014
- NRC administrative Board held hearing on license in August 2014
OST appealed to federal court

- Court told NRC to do a proper cultural survey
- Left license in place

- Long process
- Hearing Aug. 28-30
- Expect next decision in November
Gold Mining History and Current Issues in Black Hills
What is the Situation Now?

- 5 recent applications to explore for gold on lands controlled by Forest Service in the Black Hills
- One was withdrawn
- 2 of the others are known (more in a minute) and are in Rapid Creek watershed
- 2 are unknown
  - US Forest Service said in central Hills
  - Won’t tell us who or exactly where
Rapid Creek Watershed Activity

- If there was a toxic spill from gold exploration or mining in the central Black Hills, it could go into Rapid Creek, Pactola Lake, and Rapid City’s water supply.
Rapid Creek and the Connecting Aquifers
If there was a toxic spill in the central Black Hills, all 3 sources of Rapid City water – Rapid Creek, the Madison Aquifer, and the Minnelusa Aquifer -- could become contaminated at the same time and in a short period of time.
Why Are We Concerned?

- Cultural resources and practices threatened by open pit mining, 24-hour noise, traffic
- Modern gold mining uses cyanide, which leaches gold and heavy metals (arsenic, lead, etc.) out of the rock
- Many mines have created permanent acid water flowage
- Mining creates waste rock, which is often stored with water behind a dam
Problems in the Black Hills

- Gold mining started in the 1870s, at which time the Black Hills were taken from Lakota control.
- The Homestake Mine, Lead --
  - Contaminated soil, surface and ground water
  - Killed 18 miles of Creek and was a Superfund Site
  - Left a large hole
Problems in the Black Hills

- The Gilt Edge Mine in the northern Hills, which stopped operations in 1999, is a Superfund site.
  - The state and EPA cannot stop acid mine drainage.
Recent Accidents

- Gold King Mine, CO – 2015
  - Acid mine drainage spill
    - Impacts for 150 miles

- Brumadinho Mine, Brazil – 2019
  - Tailings dam broke
  - 134 people killed and 252 unaccounted for
Mineral Mountain Resources

- 7500 acres of claims near Pe’ Sla and Rochford
- Wants to dig open pit mine
- Drilled 9 holes and left late last winter
- Has just returned to re-start drilling
F3 Gold (Big Rock Exploration)

- Almost 2500 mining claims in central Black Hills
- 1872 Mining Law
  - Asked to drill near Silver City and inlet to Pactola Lake
  - Says it’s only exploring
  - But if they find mineable gold, someone will want to mine it.
How Does Climate Change Tie Into the Situation?
Climate Change in Western SD Means --

- More moisture comes in the form of snow
- More runoff in the Spring
- More intense weather events
- More flooding
So --

- More difficulty mining
- More possibility of runoff and spills from leaching and waste piles
- Runoff and spills go farther downstream
- More negative impacts on wildlife, cultural sites, humans, livestock, communities, economy
- It all goes into the creeks and rivers
Issues for EAs/EISs

- Assessment of new projects is based on historical information
  - 100-year floods
  - Past high temperatures
- With climate change, this data is outdated
  - Will be larger floods, higher temperatures
- So planning is based on outdated information
  - Tendency to “under plan”
What You Can Do

• Find out more at bhcleanwateralliance.org
• Do written comments on uranium mining EPA water permits by Dec. 9
• Mobilize others to make comments/resolutions
• Join our e-mail list/events
• Talk to everyone you see
Pilamayaye!

Questions?