

Debunking *the* Uranium "Bonanza"¹

Talk of a "\$67 billion bonanza" from new uranium mining in New Mexico grossly overstates both the extent of potential uranium production in the state and the value of any uranium that might be produced. Such "boom talk," which has been fostered by the uranium industry over the past year, distracts decision makers from two fundamental issues that are crucial for communities where uranium mining has taken place and is currently proposed:

- The urgency of addressing the pervasive health and environmental impacts of past uranium mining and milling, and
- Identifying environmentally safe and sustainable economic development alternatives.

A uranium boom of any magnitude — whether of \$67 billion, or \$36 billion² — is unlikely in New Mexico any time soon because:

- Uranium spot-market prices have dropped precipitously since they hit a record high of \$136 per pound in the summer of 2007. Spot market prices this summer have ranged from \$57 to \$65 per pound.
- As the market price of uranium falls, so does the amount of potentially recoverable uranium. According to both federal and state estimates, New Mexico has about 340 million pounds of uranium resources, *if* the market price is around \$50 per pound, and considerably less if the price is less than \$50 per pound.

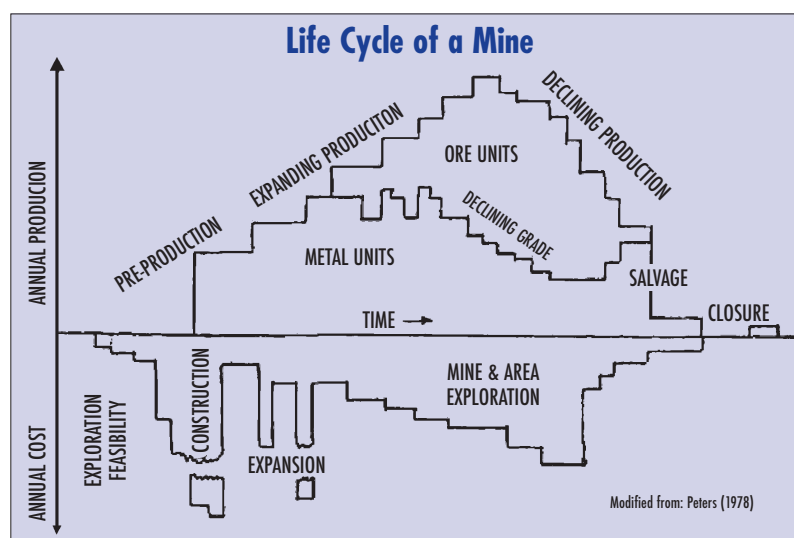
The amount of recoverable uranium in New Mexico would be reduced by at least 150 million pounds if the Navajo Nation enforces its statutory ban on uranium mining and uranium processing in "Navajo Indian Country."^{3,4}

The real "value" of New Mexico's uranium resources is only what utilities will pay for nuclear fuel, and New Mexico's resources compete poorly — they are low-grade and high-cost — in a world awash in uranium. In fact, the World Nuclear Association reports that enough uranium can be produced at existing production sites for 100 years at current usage rates.⁵

No uranium production (i.e., milling) capacity exists in New Mexico at this time. Only one proposed uranium recovery project — Hydro Resources, Inc.'s Crownpoint Solution Mining Project — has a federal license, and that license is tied up in litigation in federal appeals court. The HRI project also lacks federal, tribal or state underground injection control permits. Any new conventional mill or *in situ* leach (ISL) project would likely need five to 10 years to complete the application process, licensing and construction.

The industry's grossly exaggerated claims of a coming uranium boom are betrayed by its own behavior: exploration permit applications are down from 12 in 2007, to three this year. No company has filed a mine application with the state or a new mill or ISL license application with the U.S. Nuclear Regulatory Commission (NRC).

Uranium Resources, Inc. (URI), HRI's parent company, recently announced that it was backing out of a deal to buy the site and license of the Rio Algom LLC Ambrosia Lake uranium mill because it could not raise \$180 million in financing, even with the backing of one of the world's largest companies, Itochu Corp. As shown in the chart below of the life cycle of a mine, enormous up-front construction costs are incurred before revenues from mineral production start flowing.



The cleanup of abandoned uranium mines such as the Mesa Top Mine/Ambrosia Lake (left) and the Floyd Collins Mine (right) continues to be of concern to New Mexicans.

The economies of Grants and Gallup have diversified since the collapse of the uranium industry in the early 1980s, creating more than 17,000 new jobs to replace the 6,400 lost in the uranium sector.⁶ Tourism, recreation, gaming and construction account for many of these new jobs, and are contingent on a clean, healthy environment.

Even in the unlikely event of a new uranium mining boom, the environmental and social costs would prove significant. If uranium development occurs at the pace predicted by industry last year, another 175 million tons of radioactive mill tailings would be created,⁷ nearly doubling the volume of 90 million to 100 million tons now present at seven abandoned mill sites.

Enormous costs have already been incurred, or are expected, from previous mining and milling:

Nearly \$1.5 billion in federal funds were spent nationally through 1999 to reclaim 24 "inactive" or abandoned uranium mills and tailings facilities that produced uranium for the federal government's nuclear weapons program through 1970. By 2003, the total had topped \$2 billion. In addition, the U.S. Department of Energy expects to spend nearly \$100 million in long-term surveillance and maintenance costs at these sites until

2070, and \$50 million in groundwater remediation costs at only three of the 24 sites — Tuba City and Monument Valley, Arizona, and Shiprock, New Mexico.

Through July 28, 2008, the federal government had paid about \$625 million to former uranium workers or their families for cancers and other serious diseases that resulted from their exposure to radiation during employment in underground and open-pit uranium mines and uranium mills, and hauling uranium ore.⁸ Pursuant to the


Radiation Exposure Compensation Act (RECA), as amended, people who worked in the uranium industry between 1942 and 1971 are eligible for compensation awards of up to \$100,000 each. Uranium workers employed after 1971 are not eligible for compensation benefits. This latter group potentially includes tens of thousands of former uranium workers in the U.S., including about 7,000 who worked in the New Mexico uranium industry in 1980.

The Navajo Nation has spent more than \$23 million to correct safety hazards and perform limited reclamation at nearly 1,000 abandoned uranium mines, and Navajo Nation officials estimate that at least one-half billion dollars are needed just to initiate full reclamation and environmental

restoration at more than 500 abandoned uranium mines.⁹

Federal agencies have spent more than \$161 million over the past decade on the Navajo Nation alone, remediating uranium mill sites, assessing abandoned mines, conducting emergency soil removals, replacing homes made with mine waste, testing and treating water supplies, and screening former uranium workers.¹⁰

The New Mexico Bureau of Geology identified nearly 600 abandoned uranium mines in McKinley, Cibola and Sandoval counties alone, and the Mining and Minerals Division (MMD) recently reported that more than 50 percent of abandoned uranium mines (137 of 259) the agency inventoried have no record of any reclamation having occurred or currently required by a government agency. Clean-up costs for millions of acre-feet of groundwater contaminated from historic mining and milling discharges in the Ambrosia Lake area have not been calculated, but promise to be substantial.

The tax revenue generated by the industry between 1965 and 1995 — about \$100 million — pales in comparison with both the uranium revenues accrued by industry — about \$3 billion — during the same period, and the liability left for taxpayers in public health costs and natural resource damages. An accounting of these costs is needed to understand the full economic impact of the previous uranium "boom." 

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¹ This term first appeared in an April 15, 2007, article in *The New Mexican* (p.A-7), headlined "New Mexico's \$67 billion bonanza."

² The \$36 billion figure was reported in the "Statement of the Uranium Producers of New Mexico Before the Legislative Finance Committee," presented by Jon Indall, attorney, July 10, 2008. It is derived by multiplying 600 million pounds of "known [uranium] reserves" remaining in New Mexico by the early-July spot market price of \$60 per pound.

³ The Navajo uranium ban (the "Diné Natural Resources Protection Act of 2005") is codified at Navajo Nation Code, Title 18, §§1301-1303.

⁴ The Navajo Nation's intent to enforce the ban was set forth in letters sent by Navajo Attorney General Louis Denetsosie to Uranium Resources, Inc. (June 27, 2006) and to Strathmore Minerals Corp. (June 30, 2006).

⁵ WNA's source is "Uranium 2007: Resources, Production and Demand," a joint publication of the OECD Nuclear Energy Agency and International Atomic Energy Agency (commonly referred to as the "Red Book"), NEA No. 6345, 2008 (available at www.oecdbookshop.org/oecd/display.asp?sf1=identifiers&sf1=9789264047662).

⁶ This finding and many others are based on a report, "An Economic Evaluation of a Renewed Uranium Mining Boom in New Mexico," by Dr. Thomas Power, professor emeritus of mineral economics at the University of Montana, and commissioned by the New Mexico Environmental Law Center (September 2008).

⁷ Two 8,000-ton-per-day (tpd) uranium mills or four 4,000 tpd mills would generate 175.2 million tons of tailings assuming a 24/7 operating schedule over a 30-year period.

⁸ U.S. Department of Justice, Civil Division. Radiation Exposure Compensation System Claims to Date: Summary 07/28/2008. (www.usdoj.gov/civil/omp/omi/Trs_SysClaimsToDateSum.pdf)

⁹ Arthur, George. Testimony before the U.S. House of Representatives, Committee on Oversight and Government Reform, Hearing on the Health and Environmental Impacts of Uranium Contamination on the Navajo Nation, October 23, 2007. (<http://oversight.house.gov/documents/20071023103424.pdf>)

¹⁰ U.S. Environmental Protection Agency. Health and Environmental Impacts of Uranium Contamination on the Navajo Nation: Five-Year Plan, as requested by the House Committee on Oversight and Government Reform, June 9, 2008. (www.epa.gov/region09/waste/sfund/navajo-nation/pdf/NV-5-Year-Plan-June-12.pdf)