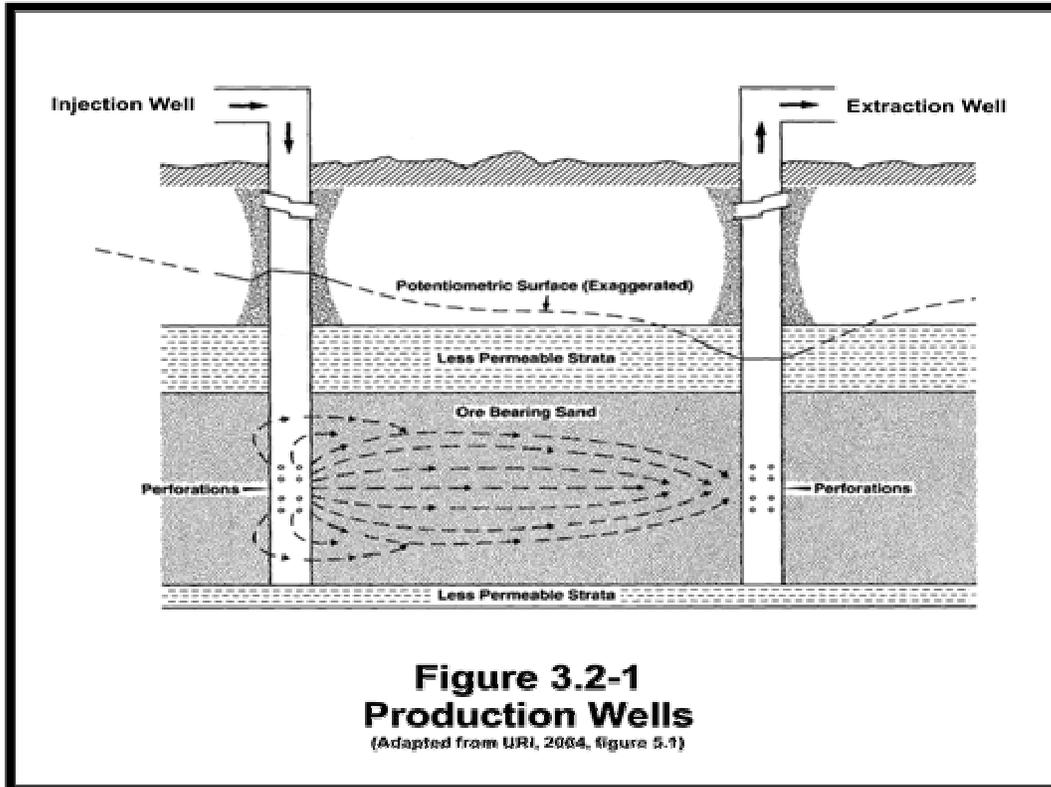


# Potential Impact to Groundwater from In Situ Leach Mining of Uranium



## PROCESS

- In-situ leach mining (ISL) is a method of uranium mining where hundreds of wells are drilled approximately 30-40 feet apart in a “grid pattern” over an ore body found in sandstone groundwater aquifers.
- ISL draws water from these aquifers, treats it with chemicals, and pumps it back into the aquifer where the solution leaches uranium from its sandstone layer resulting in a concentrated solution of uranium and other elements. The solution is brought to the surface where some of the uranium is removed and the solution is re-injected into the aquifer where the leaching cycle continues.
- Other elements such as arsenic, selenium, molybdenum, vanadium and more are concentrated into the groundwater during the leaching process.
- In an attempt to contain the concentrated solution within the mining area, large quantities of our water are pumped out of the cycle in what is called a “bleed off” and are stored in evaporation waste ponds or injected into deep underground aquifers.

## RISKS AND CONCERNS

### GROUNDWATER CONTAMINATION AND DEPLETION

- Groundwater contamination and depletion can occur at all 3 phases of In Situ leaching of uranium: Test drilling phase, In Situ leach process phase, and groundwater restoration phase
- According to a report by the National Research Council, “The primary risk associated with ISL uranium mining is the potential for contamination of adjacent groundwater”. A Nuclear Regulatory Commission (NRC) report acknowledges that ISL uranium mining “tends to contaminate the groundwater”.

- Groundwater contamination has occurred at existing ISL sites from vertical and horizontal excursions through cracks in the so-called confining layers, breaks in pipes, pond leaks, spills, and other means.
- To date, no ISL site has been able to restore the water within the mining area to pre-mining condition. Restoration has only occurred when companies were allowed to lower the restoration standards.
- During the process, millions of gallons of water are wasted in the “bleed off”. During the restoration phase, millions more are wasted in an attempt to restore the water to pre-mining standards.

## **CURRENT PLANNED CROOK COUNTY PROJECTS AND STATUS**

### **ALADDIN PROJECT:**

This project is under the Canadian based company, Powertech Inc., and covers over 18,000 acres north of Aladdin Wyoming in Crook County. Although the drilling results were considered “encouraging”, this project is currently “on hold” while they focus their resources on projects in South Dakota and Colorado.

### **ELKHORN PROJECT:**

This project is under the Canadian based company, Bayswater Uranium, and includes over 25,000 acres which extend more than 20 miles and cover an area surrounded by New Haven Road, Missouri Haul Road, and Government Canyon Road in Crook County Wyoming. Elkhorn is considered at the advanced exploration stage. The company hopes to develop this project in conjunction with the Alzada project, which will increase the overall acreage substantially. They currently plan to “advance towards feasibility and potential production along an aggressive time line”. No “intent to apply for permit” has been submitted to the Nuclear Regulatory Commission, as of the end of 2009.

### **ROSS / LANCE PROJECT:**

This project is under the Australian based company, Peninsula Minerals Ltd., and covers a 10 by 35 mile area from Moorcroft to Oshoto. Specifically, the Ross project, is an area of over 13,000 acres located near Oshoto. The company has submitted to the Nuclear Regulatory Commission, an “intent to apply for permit” for the Ross project by December 2010, with hopes of starting the Ross project up in 2012.

## **WHAT CAN WE DO TO PROTECT OUR QUALITY OF LIFE AND LIVELIHOODS?**

- Make public comments during the permitting process: Nuclear Regulatory Commission permit, State permit, EPA Underground Injection Control permit, and others
- Push for more oversight by Wyoming Department of Quality, NRC, EPA and other responsible agencies
- Push for reform of antiquated mining laws which favor the mining companies over all other land users

For further information contact Ranchers & Neighbors Protecting Our Water

Pam Viviano	307-467-9291	pamelav@vcn.com
Wilma Tope	307-896-4706	wilto@live.com