



INL Site Environmental Management

C I T I Z E N S A D V I S O R Y B O A R D

From the Board Chair

Herb Bohrer, CAB Chair



It is time again for another issue of the Idaho National Laboratory (INL) Site Environmental Management (EM) Citizens Advisory Board (CAB) newsletter. As members of the CAB, we aim to communicate our activities to you, the public, and we believe this newsletter helps achieve that mission. As we prepare for our February 17 meeting, to be held at the Hilton Garden Inn in Idaho Falls, we want to check in with you, and to share our thoughts on a few Site-related topics. I hope you find the articles here useful and informative. Our [2016 meeting schedule](#) is posted on our website, and anyone who is interested is, as always, invited to attend.

Over the last year we have monitored the progress of cleanup at INL, and we have been generally satisfied with what we've seen. We are concerned, as many of you are, about the delayed start-up of the Integrated Waste Treatment Unit (IWTU). As you know, this facility is intended to treat the last remaining liquid high-level waste at the Idaho Nuclear Technology and Energy Center (INTEC). The unit's slow startup has resulted in missed cleanup milestones and impacts to INL's research mission. I am sure many of you have been following the media reports about this project and its impacts. We will receive updated information at our next meeting, and are anxious to hear about the plant's progress and what the next steps will be.

We are also closely following the status of the Waste Isolation Pilot Plant (WIPP) in New Mexico. This facility, which receives transuranic waste processed from the Idaho site and other national laboratories, was shut down in 2014 due to a fire in the mine and a problem with a waste container. Because INL's cleanup teams cannot ship waste out, agreements with the State are not being met, and again, cleanup milestones are being missed. WIPP complications notwithstanding, waste treatment at the Advanced Mixed Waste Treatment Project (AMWTP) and waste exhumation at the Advanced Retrieval Project (ARP) continue and it is currently believed that sufficient waste storage space exists onsite so no delays are expected in these important efforts. We will continue to closely follow progress in this area.

The CAB is also very interested in the transition between cleanup contractors operating the EM programs at INL. Contract transition is obviously a time of change, and if not managed carefully can result in degraded production and, more importantly, safety performance. The CAB has expressed this concern to DOE, and we will continue to monitor the transition process as it continues to unfold in the coming months.

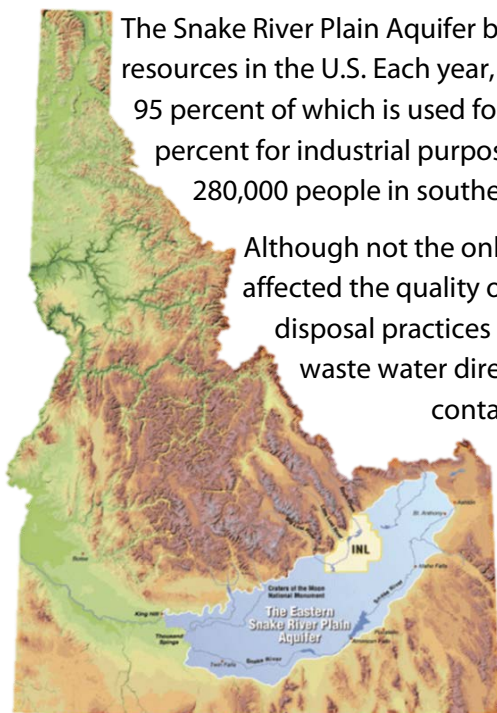
Overall, cleanup work at INL seems to be going well. Safety performance records remain strong and cleanup work is continuing. DOE recently published a [year-end report](#) on cleanup progress at INL and I encourage you to review it.

Finally, we are reviewing applications of individuals to fill vacancies on the CAB. We are always looking for potential members who can help the board represent the diversity of stakeholder interest in our state and area. No matter your background, please consider serving in the future. It is interesting, meaningful, and rewarding work.

Until next time,
Herb

Update on Groundwater at INL Complex

Bill Roberts, CAB Member



The Snake River Plain Aquifer beneath INL is one of the most productive groundwater resources in the U.S. Each year, about 2 million acre-feet of water is drawn from the aquifer, 95 percent of which is used for irrigation, three percent for domestic water, and two percent for industrial purposes. The aquifer is the primary water source for more than 280,000 people in southeastern Idaho.

Although not the only source of contamination, historic activities at INL have affected the quality of the aquifer water. In the past, INL employed industrial waste disposal practices common at the time that included injecting contaminated waste water directly into the aquifer. Some of these practices led to contamination of the groundwater below some areas of INL with heavy metals, chemicals and radioactive elements. These waste disposal practices are no longer used and are prohibited under current environmental regulations. Other waste disposal practices, including the burial of materials contaminated with radioactive and hazardous materials, also contributed to aquifer contamination in the past (id.doe.gov/news).

For more than two decades, the U.S. Department of Energy, governed by federal and state laws, has been cleaning up the aquifer below INL and taking actions to protect it from additional contamination. While some of the groundwater below INL is still contaminated, in more than 50 years of groundwater monitoring no contaminants have been detected near or outside the INL boundary in concentrations exceeding federal safe drinking water standards (id.doe.gov/news).

The U.S. Geological Survey (USGS) in conjunction with the U.S. Department of Energy and INL have released more than 30 years of water quality data.

USGS scientists analyzed data collected from 99 wells at the INL site between 1981 and 2012. The study focused on wells possibly affected by waste water disposal that occurred from the early 1950s until the late 1980s at the INL site.

Key findings include:

- Improved waste water disposal practices are helping to reduce concentrations of radionuclides such as tritium and strontium-90 in groundwater.
- Concentrations of the inorganic compounds sodium and chloride are decreasing at waste water disposal sites, but increasing farther down in the aquifer's gradient. For example, chloride disposed of at INTEC in the mid-1990s moved about 3 miles south, where it was found at the highest concentrations in wells near the Central Facilities Area.
- There is an increasing trend for carbon tetrachloride, a volatile organic compound, at the Radioactive Waste Management Complex (RWMC) Production Well for the period 1987 to 2012. However, trend analyses of data collected since 2005 show no statistically significant trend, indicating that engineering practices designed to reduce movement of volatile organic compounds to the aquifer may be working.

USGS said it plans to optimize the monitoring well network as a result of the study, which could better prioritize use of equipment and resources. "We're going to be looking at optimizing our network to determine which wells we could eliminate from our program in the future and which constituents to discontinue sampling" (usgs.gov/newsroom).

RCLA vs. CERCLA NFL-Style

Brad Christensen, CAB Member



When it comes to understanding federal regulative authorities, there's no lack of resources to help identify the entities that regulate. In fact, as you may expect, there is an abundance of verbose government documents covering every aspect of the topic. If you desired to identify the difference between RCRA and CERCLA, you might read, "A Comparison of the RCRA Corrective Action and CERCLA Remedial Action Processes" (February 1994). While it is called a "brief," it spans 175 pages.

That's precisely why it may be best to rely on analogy to comprehend the differences in structure, jurisdiction, and discipline processes of RCRA vs. CERCLA. And what better analogy could there be than football?

To ensure safety, competitiveness, time-constraints, and epic highlight reels in football, we rely on two governing entities: 1) the referees, on-field judges who watch and call rule-breaking behavior, make rule interpretations, and maintain the flow of the game, and 2) the league board of directors, post-game and post-season authorities who review behavior, official rulings, and rule structures. The board levies fines, makes determinations regarding overall rule-changes, and upholds safety and competitive standards.

The difference, then, is clearly defined by the timeframe under which each authority handles regulative duties; the referees correct actions during games, and the board remediates actions afterwards.

Although RCRA and CERCLA are federal regulations regarding hazardous waste, and have nothing at all to do with football, the way they interact is very similar. In the title of the above-mentioned brief, note that RCRA's actions are "corrective" and that CERCLA's actions are "remedial." Just as the interaction between football players and regulative authorities are divided between "during" and "after," so also are the duties of each body. Effectively, RCRA is the referee, and CERCLA is the league board.

As an example, if a facility wished to treat, store, or dispose of hazardous waste, that facility would need to obtain a RCRA permit – inviting RCRA referees onto the field in order to ensure safe control. In contrast, CERCLA conducts assessments on areas which have already been identified as having been affected by hazardous waste and its regulations govern the cleanup. As in the case at INL, a facility may be complying with one, the other, or both authorities at any given moment.

While this analogy possibly over-simplifies the many differences between the RCRA and CERCLA, it's a start at understanding why these different regulative entities exist.

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