

# Hanford Advisory Board Ecology Update

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# National Remedy Review Board

- Ecology and Yakama Nation presented to board Jan. 27 on 100 D/H Proposed Plan
- NRRRB is EPA board, but Ecology is lead regulatory agency on this project
- NRRRB comments expected in about 6 weeks
- Ecology will review comments & determine potential impacts to proposed plan
- Public comment period on proposed plan could be ready to start June 2015



# Updated Hanford groundwater info

- Copies on back table
- Posted on ECY website



## Tracking Groundwater Contamination

### Groundwater Monitoring

Groundwater at Hanford generally flows from northwest to southeast, or toward the Columbia River.

During production years, so much water was discharged to Hanford that groundwater rose and sometimes "mounded" or built up in places causing surface water ponds to develop.

At Hanford, about 3,000 samples from 1,000 monitoring wells are taken each year to detect the extent and type of groundwater contamination. Monitoring data shows about 170 square miles of groundwater contamination. About 65 square miles of groundwater at Hanford is contaminated beyond safe drinking water levels.

Since plutonium production stopped in 1989 water tables across the site have dropped, changing groundwater flow in some places and leaving monitoring wells dry. Some wells have been replaced with deeper wells. More wells need to be installed for contaminant detection and assessment, and to meet the required regulations.

Wells that no longer work must be properly filled and capped to prevent them from becoming conduits to groundwater. The agencies are working to meet this goal.



The red dots represent monitoring wells at Hanford as well as offsite in Richland and across the river in Franklin County.

### Vadose Zone Monitoring

## Groundwater Treatment Methods

In 2009 Ecology and EPA agreed to make groundwater cleanup a priority. Groundwater cleanup methods vary across Hanford depending on available technology, the effectiveness of a method v. cost, and whether it will protect human health and the environment. In the end, we hope the USDOE is able to meet a 2024 target for all Hanford groundwater to meet drinking water standards.

### Reducing Recharge

One way to reduce the spread of contamination is to control water leaks by removing unneeded water lines. Another method involves testing active lines to make sure they don't leak. Preventing water from ponding over areas known to have contamination in the soil also reduces recharge. For example, in the T-Farms, a temporary cover is being tested over an area where a large tank leak occurred. The cover is intended to prevent rain or snowmelt from driving soil contamination deeper into the vadose zone and into groundwater.

### Natural Attenuation

Natural attenuation is a wait and watch approach. Some chemicals and radionuclides will degrade or stabilize on their own over time, but we will require USDOE to continue monitoring when contamination is gone. If a technology is currently unavailable to treat contamination, we will encourage USDOE to seek new treatment technologies.

### Soil Vapor Extraction

Soil vapor extraction (SVE) removes harmful chemicals from the soil above the water table. Vapors are the gases that form when the chemicals evaporate. SVE extracts vapors from the soil above the water table by applying a vacuum to pull the vapors out.

### Source Removal

Removing contaminated soils from near the Columbia River prevents that contamination from reaching the river. When appropriate, contaminated soil is dug up and disposed of in the Environmental Restoration Disposal Facility (ERDF), Hanford's modern clean landfill. More than 15 million tons of debris and soil have been disposed there so far.



Soil removal is ongoing statewide as a way to prevent contamination from spreading.



Above: Ecology joins USDOE and their contractors in celebrating the opening of a new pump and treat facility in 2012. The facility can treat seven major contaminants and more than double the volume of water treated at the site.



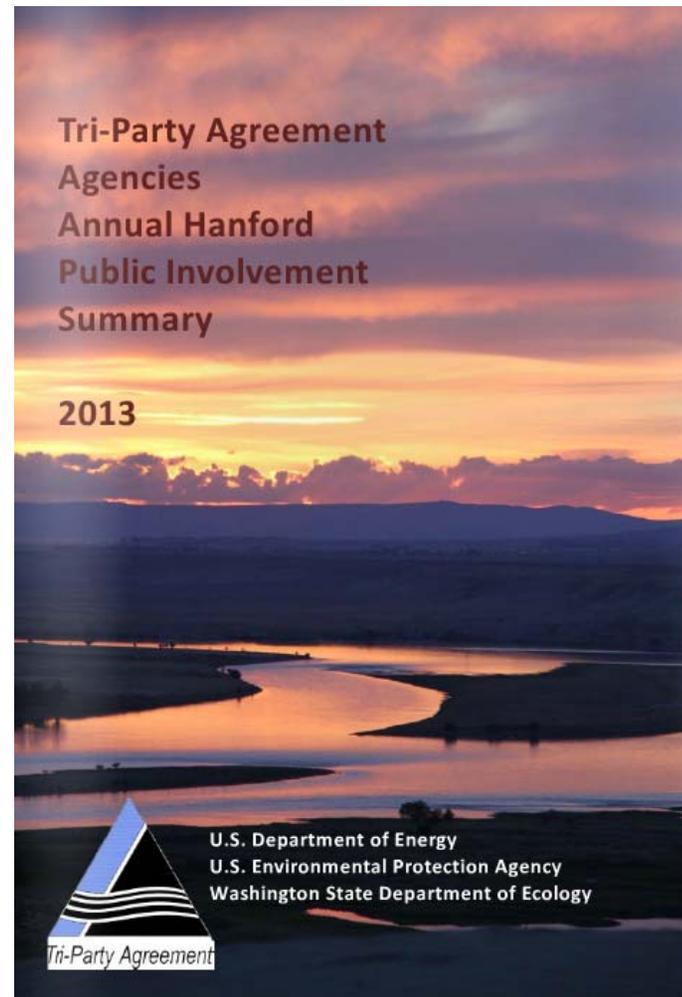
# Groundwater success story

Ecology tours  
100-D big dig



# TPA Public Involvement Survey

Open through  
Friday, February 6



# Tri-Cities Sportsmen Show



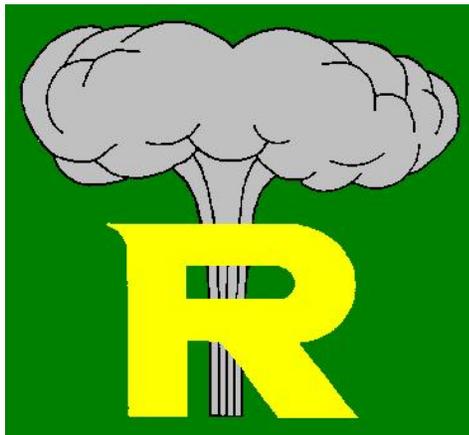
- Marshawn Fox's debut
- Shared space with HanfordLearning.org



# Now Showing ...

Traveling  
exhibit at  
Hanford High

Coming next  
month to ...



# Ecology job openings

- Senior Waste Mgmt Permit Specialist
- Waste Mgmt Chemist
- DST/242-A Lead Engineer

More info: [careers.wa.gov](https://careers.wa.gov)



# Rick Bond is retiring!

Sendoff set  
3:30-5, March 5  
at Ecology





# Questions?

Web: [ecy.wa.gov/programs/nwp](http://ecy.wa.gov/programs/nwp)

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