



# ITRC Passive Diffusion Sampler Guidance

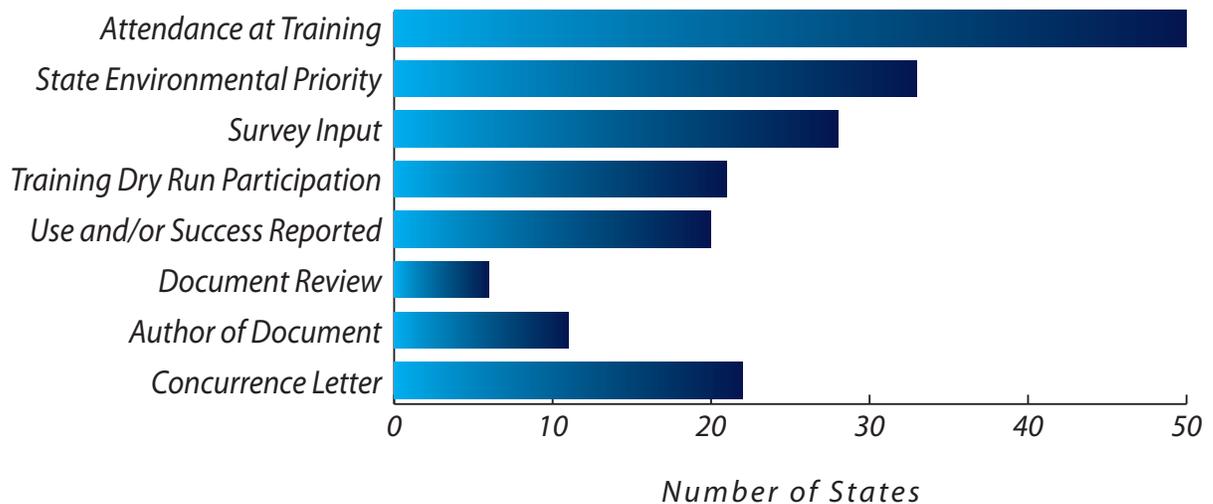
A passive sampler is installed in a well to collect groundwater samples by equilibrating with groundwater over time. The sample represents an integration of contaminant concentrations that have most recently moved through the well. No purging or disposal of water is needed, which can reduce field sampling costs by 25-70%. ITRC developed guidance and overview documents to enable environmental professionals to more easily choose to use passive samplers under appropriate circumstances. ITRC's Diffusion/Passive Sampler Team—composed of experts from state and federal agencies, environmental consultants, and industry leaders—developed the following guidance documents and training courses:

- *User's Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells (March 2001)*
- *ITRC Diffusion Sampler Resource CD, Version 3 (July 2004)*
- *Technical and Regulatory Guidance for Using Polyethylene Diffusion Bag Samplers to Monitor Volatile Organic Compounds in Groundwater (February 2004)*
- *Technology Overview of Passive Sampler Technologies (March 2006)*
- *Protocol for Use of Five Passive Samplers to Sample for a Variety of Contaminants in Groundwater (February 2007)*
- *Passive Samplers – Protocol for Use of Five Passive Samplers Internet Based Training (IBT)*

The documents and training courses provide an overview of the use of passive groundwater samplers, particularly for long-term monitoring. Please see [www.itrcweb.org](http://www.itrcweb.org) for more information or to download free copies of the documents.

## **State Ownership: Building, Accepting and Using ITRC's Passive Diffusion Sampler Products**

A high number of states showing ownership of ITRC products indicates that ITRC effectively educated on passive samplers across the nation.



### **Highlights**

- **More than 20 states** report using ITRC's Passive Diffusion Sampler guidance documents as a tool to directly assist with site activities or as a resource for state staff and consultants/contractors
- ITRC has trained **more than 1,700 people** from across the nation on passive diffusion samplers (33% are state regulators)

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## Measures of Success



Missouri used passive samplers at four federal facilities sites in accordance with ITRC guidance. In each case, the passive samplers were used to monitor for volatile organic compounds (VOCs).

The Virginia Department of Environmental Quality received a request from a consultant to perform passive sampling at a new landfill. The consultant included portions of the ITRC passive diffusion sampling documents as supporting data.



The Florida Hazardous Waste Cleanup Section has used passive diffusion bag samplers at four state funded VOC cleanup sites. Although the state cannot close a site based on passive diffusion bag sampling, Florida uses them for long-term monitoring when applicable.

Frequent sampling of many deep and high volume producing wells resulted in a high cost of monitoring for a U.S. Air Force site in Arizona. With the assistance of ITRC passive diffusion sampler resources, the U.S. Air Force achieved regulatory acceptance of using passive sampling, resulting in tens of thousands of dollars per event in cost savings, primarily due to the significant time savings.



Alabama has used the ITRC passive diffusion sampler guidance at three national priority listing (NPL) sites. The use of ITRC resources greatly reduced the amount of investigation-derived waste and better defined impacted zones.

The Tennessee Department of Environment and Conservation used the ITRC documents to help select a passive diffusion sampler to sample a 300 foot well. The diffusion samplers worked as designed and reduced field sampling costs due to the elimination of purging and the disposal of purge water.



By using ITRC's guidance and switching from traditional sampling methods to passive diffusion samplers, the Oregon Department of Environmental Quality reduced labor costs by over fifty percent at the East Multnomah County cleanup project.