



# Rigid Porous Polyethylene (RPP) Samplers

According to the Interstate Technical Regulatory Council's (ITRC) Passive Diffusion Team, passive sampling of groundwater refers to collecting a representative sample of the aquifer immediately adjacent to a specific position in a well without active media transport induced by pumping or purging techniques.

Passive sampling significantly reduces the field costs and time associated with groundwater well monitoring, reduces field sampling variability, can provide vertical profiling of contaminate concentrations, and has no known depth limit. Passive samplers are easy to deploy and retrieve and may be used in conjunction with one another.

ALS manufactures the RPP Samplers which may be used to collect samples for inorganic constituents and water-soluble organic compounds.

RPPs were invented by Don Vroblesky, Ph.D., of the United States Geological Survey (USGS). ALS manufactures a prototype that will soon be licensed with the USGS for production under the US Patent Application Serial #10/767,496, entitled "Porous Polyethylene Diffusion Sampler for Groundwater."

RPPs are made of thin sheets of foam-like porous polyethylene with pore sizes of 6-20 microns. When completely filled with water the pores allow a water-water interface, facilitating the equilibrium of water-soluble analytes in the aquifer adjacent to the well screen with the deionized water of the RPP. Like the majority of passive samplers, it is recommended that they remain deployed for a minimum of 14 days, though the analytes of interest may equilibrate sooner.

The RPPs are deployed with the plug end down and are kept in this position until the contents are placed into sample bottles for transport to the laboratory. This is to avoid leakage from the pores of the sampler.

## Primary Applications

1. Long-term groundwater monitoring situations, especially when purged water must be collected and disposed of off-site.
2. Well fields in porous/permeable formations with good groundwater recovery.
3. All water soluble analytes, like inorganic anions and cations, metals, MEE parameters, 1,4-dioxane, MTBE, hexavalent chromium, explosives, perchlorate and dissolved gases.
4. Very useful in deep wells where submersible pumps may not function.

## SERVICE

- On-time data delivery and rapid TAT
- Experienced staff with expertise
- Available after-hours and weekends

## VALUE

- Instant access to data with Webtrieve™ and Webtrieve™ Mobile App
- Custom bottle kits with pre-printed labels and COCs

## RELIABILITY

- Technical experts that can answer your most difficult questions
- A real focus on quality and process control with a rigorous QA/QC program

## Get Connected!

Visit our website for more information about ALS.



Scan the QR Code with your smartphone or search for "ALS Environmental" on YouTube.

*Continued on reverse side...*





... continued from reverse side

## RPP Pricing

RPP, each	Price
RPP Sampler (6" length, 1.5" diameter, 100ML)	\$65.00
Hanging Assemblies and Supplies, each	
Hanging assembly (custom sized to order)	Call for quote; reusable
Weights, 8 oz. (5/8" diameter x 7" long)	\$16.00; reusable

Please allow one week for RPP delivery.



## Minimum Equilibration Times

Common Analytes	Equilibration Times (Days)
Dissolved gases: Methane, ethane, ethene	14
Perchlorate, chloride, hexavalent chromium, nitrate, sulfate	14
Water soluble VOAs (i.e. MTBE, MEK, Acetone, 1,4-Dioxane)	14
Water soluble SVOCs (i.e. NDMA, phenols)	14
Dissolved metals	21*
Explosives (i.e. HMX, TNB, RDX and TNT)	21

\* Copper and Silver may need more time.



## RPP Benefits

Samples all water soluble analytes, such as:

- Perchlorate
- 1,4-dioxane
- Inorganic anions and cations
- Metals
- MEE parameters
- MTBE
- Hexavalent chromium
- Explosives
- Dissolved gases

The RPP is 5-6 inches long and 2 mm thick, capped at one end and a Delrin® plug at the other. Each RPP holds approximately 110 mL of certified, laboratory grade deionized water. They come in a protective mesh cover that allows attachment to the deployment line with simple cable ties. They are prepackaged in a heat-sealed polyethylene sleeve filled with certified, laboratory-grade, analyte-free, deionized water to ensure that the pores of the RPP do not become air-filled thereby blocking the water-water interface and preventing diffusion. The RPPs may be stacked if additional sample volume is desired. Contact ALS for small volume capabilities.

ALS is a leader in passive diffusion sampler technology and has been since March 2000 when it began manufacturing and distributing samplers for Volatile Organic Compounds (VOCs). Wide acceptance of these samplers has spurred ALS to partner with USGS to develop passive diffusion samplers for common LTM inorganic parameters. Both laboratory and field demonstration studies are ongoing for the use of RPPs for various analytes. We actively participate in the ITRC and have been instrumental in technological and regulatory advancements in this field.

