

Miniature Pumps in the Cone Penetrometer Tip (Cone Sipper) for Groundwater and Soil Sampling (TechID 381)

The Cone Sipper is a groundwater and soil vapor sampling device designed for use with a cone penetrometer. It is advanced into the subsurface by the cone penetrometer to collect samples at multiple depths in the hole. Samples are brought to the surface via small-diameter plastic tubes; the device can be purged for reuse *in situ* by injecting distilled water, air, or inert gas. The main advantage of the Cone Sipper over other groundwater samplers is that it eliminates the need for retrieval and decontamination of the sampler between sampling intervals. Its simple construction, using just three remote-controlled valves, ensures reliable operation.



Developers:

- Savannah River Technology Center
- Applied Research Associates, Inc.

Applications:

- Demonstrated at the Savannah River Site Metallurgical Manufacturing Facility in Area M, Aiken, SC, in 1997
- Demonstrated at the Kennedy Space Center, Cape Canaveral Air Station, Hanger K, Cape Canaveral, FL, in 1998

Benefits:

- Cost and Schedule Benefits Expected

Status:

- Deployed in 1996 at Savannah River Site (Metallurgical Manufacturing Facility in Area M) in Aiken, SC
- Deployed in 1999 at Kennedy Space Center (Cape Canaveral Air Station), FL
- Commercially available in 1995 from Applied Research Associates, Inc. (www.vertek.ara.com)