

## **A.1 Technology Name:** Dual Membrane Passive Diffusion Bag (DMPDB)

### **A.1.1 Source:**

Results of a Field Study comparing the DMPDB to Low-Flow sampling for PFAS at a DoD site.

Prepared by:

EA Engineering Science and Technology

Paul Caprio,

**Media:** Groundwater

**Study Type:** Side-by-Side

**Technology:** Dual Membrane Passive Diffusion Sampler (DMPDB) Passive Grab-Sampler

**Peer Reviewed:** No

**Publication Date:** July-August 2021, The Military Engineer, Vol. 113, No.734

### **A.1.3 Site Description:**

This study was conducted at a DoD site to compare the results from groundwater samples collected for PFAS analysis using a Dual Membrane Passive Diffusion Bag (DMPDB) to results from low-flow pumping. The study was undertaken to validate a sampling technology that would reduce sampling cost, lower the chance for cross-contamination, allow for depth specific profiling, and generate less investigation derived waste.

Ten wells were sampled with the DMPDB and with low-flow purge using HDPE tubing and a submersible pump. Eight wells employed one DMPDB sampler set in the center of the screen and two wells were completed with tandem DMPDBs at different depths. All samples were packed in ice and shipped to a DoD accredited analytical laboratory in accordance with Quality Systems Manual Version 5.3 Table B-15 for 24 PFAS.

126 pairs (one DMPDB result paired with one LF result) of results reported PFAS and the results were plotted on a 1:1 regression plot. Results that were more than five times the reporting detection limits were also evaluated using relative percent difference.

### **A.1.4 Phase:** Long Term Monitoring

### **A.1.5 Outcome:**

The slope of a 1:1 correspondence plot was 1.01 and the  $R^2$  value was greater than 0.99, demonstrating that the results from sampling with the DMPDBs for PFAS correlated well with the field study samples and did not produce any results that affected comparisons to screening levels. Results appeared to be consistent for both long and short-chain PFAS, indicating the DMPDB may be suitable for sampling on future projects.

#### **A.1.6 References:**