

Re-evaluation of the Applicability of Agency Sample Holding Times

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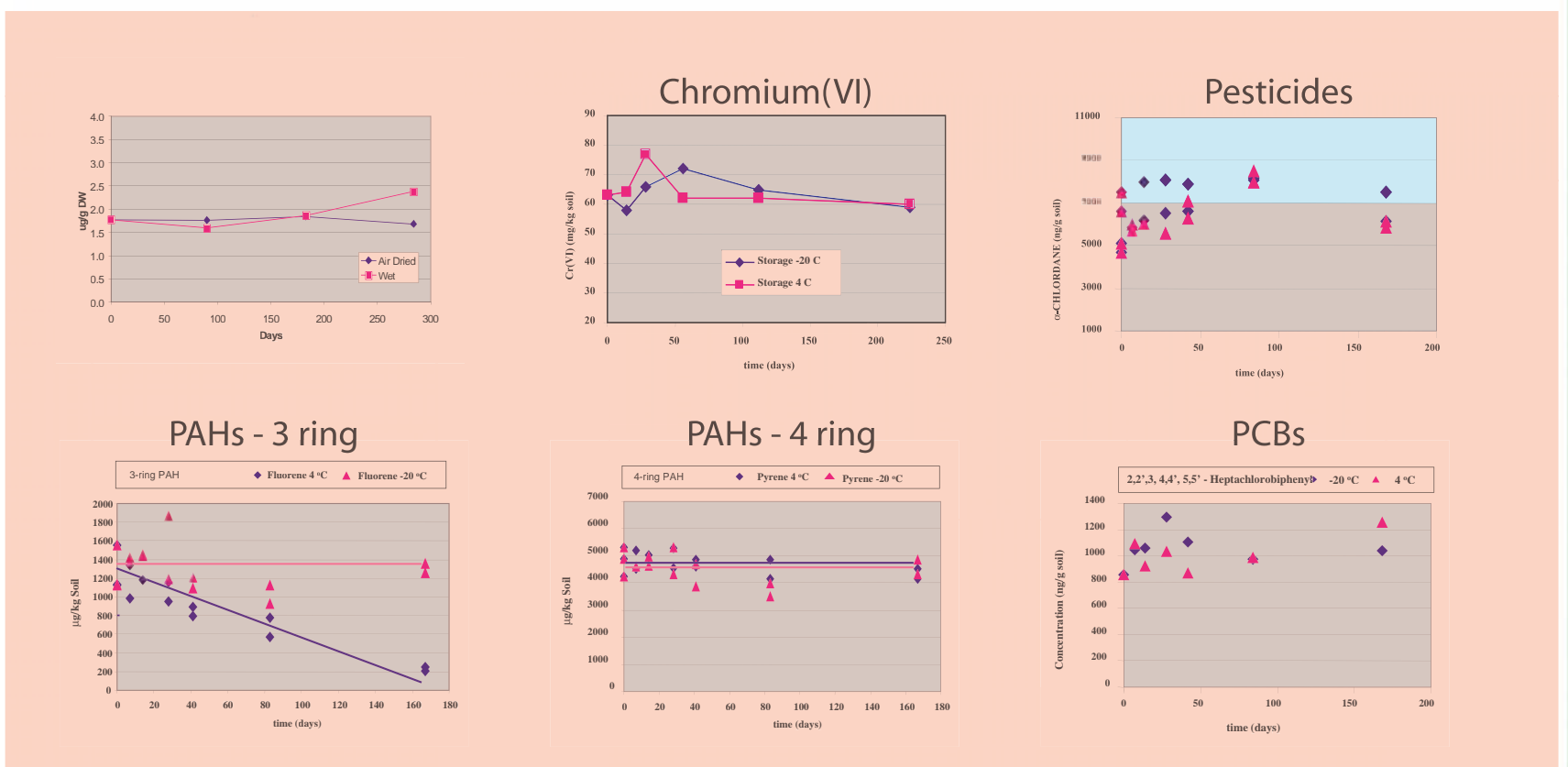
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Background: Holding times are the length of time a sample can be stored after collection and prior to analysis without significantly affecting the analytical results. Maximum holding times (MHTs) have been established by the U.S. Environmental Protection Agency (U.S. EPA) and have been presented in the Code of Federal Regulations and SW-846 methods manual.

How We Did It: Contaminated soils and sediment samples were collected from across the U.S. via our Regional partners and other supporting Regional personnel. Samples were homogenized and preserved at either 4° or -20° C. Analyses were performed following standard SW-846 methods. Samples were analyzed at times 0, 0.5 MHT, 1 MHT, 2 MHT, and up to 12 MHT depending upon the contaminant being investigated.

What We Found:



Summary:

Heavy metal concentrations (MHT=6 months) were not significantly affected by a holding time of 364 days.

Chromium(VI) concentrations for soil/sediments stored at either 4° C or -20° C are stable far beyond the required 30-day MHT.

Pesticide concentrations remained steady through 4 MHTs (MHT=14 days to extraction and 40 days after extraction), regardless of storage temperature.

PAH concentrations remained steady through 4 MHTs (MHT=14 days to extraction and 40 days after extraction), except in one sediment where the concentrations of the lighter (3-ring) PAHs decreased significantly after 2 MHTs when stored at 4° C.

PCB (aroclor and congeners) concentrations remained steady through 4 MHTs (MHT=14 days to extraction and 40 days after extraction), regardless of storage temperature.

Our Partners:

Our partners included - U.S. EPA Regions 1 and 10, U.S. EPA ORD, and many Superfund Remedial Project Managers.

Notice: Although this work was reviewed by EPA and approved for publication, it may not necessarily reflect official Agency policy.



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