The preservation and holding time information presented in Table 4-1 does not represent EPA requirements, but rather is intended solely as guidance. Selection of preservation techniques and applicable holding times should be based on all available information, including the properties of the analytes of interest for the project, their anticipated concentration levels, the composition of the sample matrix itself, and the stated project-specific data quality objectives. A shorter holding time may be appropriate if the analytes of interest are reactive (*e.g.*, 2-chloroethyl vinyl ether, acrylamide) or the sample matrix is complex (*e.g.*, wastewater). Conversely, a longer holding time may be appropriate if it can be demonstrated that the analytes of interest are not adversely affected from preservation, storage and analyses performed outside the recommended holding times. Prior to collecting samples for analysis, the project team may consider existing information and data regarding analyte stability or conduct field screening for the samples to be collected in order to determine how best to preserve sample integrity for the analytes of interest. The use of site-specific performance evaluation material is a high confidence mechanism to ensure reliability of project data. The references in Sec. 4.6 provide examples of study designs that may be useful for this purpose.

4.1.3 Sample Handling and Preservation for Volatile Organics

4.1.3.1 VOC Sample Containers

The containers used for collecting VOC samples are frequently volatile organics analysis (VOA) vials that are directly compatible with the equipment used for sample preparation and analysis in the laboratory. Use of these containers for sampling helps minimize loss of VOCs resulting from opening sample containers and/or transferring materials from one container to another. Certified pre-cleaned VOA vials are commonly used as sample containers for VOCs and are commercially available from a number of vendors. The vials should be absent of burrs around the caps that might prevent the vial from sealing, and septa should be lined with a PTFE layer of sufficient thickness to limit diffusion of VOCs out of the vials during storage. PTFE thicknesses of 0.13 to 0.25 mm have been shown to be effective. See reference # 18 in Sec. 4.6 below and Sec. A.8 in Method 5035A for more detail. If they are suspected of being a source of interferences, VOA vials and unpunctured septa should be washed with soap and water and rinsed with distilled de-ionized water. After thoroughly cleaning the vials and septa, they should be placed in an oven and dried at 100 °C for approximately one hour.

NOTE: Heating the septa for extended periods of time (*i.e.*, more than one hour) or at higher temperatures should be avoided, because the silicone begins to slowly degrade at 105 °C). Also, punctured silicone backed PTFE lined septa should generally not be reused, because some VOCs have high affinity for the silicone material, and puncturing the PTFE septum face exposes the gas phase vial contents to the silicone backing material, causing loss of certain VOCs depending on length of exposure time and vial temperature.

Air-tight, sealable coring devices (e.g., En Core™, Core N' One™ or equivalent) may also be useful for collection and storage of cohesive soil samples for VOC analysis. These devices are designed to limit loss of VOCs from samples during cold storage and shipping over a limited time frame and for quantitative transfer of solids and associated VOCs into VOA vials for immediate analysis or further preservation. Their use during field sampling of solids helps reduce or eliminate the need to handle solvents or chemical preservatives in the field and eliminates some shipping restrictions on field samples that may otherwise contain