# D-34 NEWS

Issue #7
July 2009


## ASTM Committee D-34, Waste Management

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## Susan Sorini

As this issue was about to go to press a tragic accident occurred on May 30, 2009 and we lost our beloved Chairman, Susan Sorini. This issue is dedicated to her, her leadership of our Committee and the untiring work she accomplished as an ASTM Standards writer.

Our first article covers her presentation of the ASTM Award of Merit, presented to her at our Committee meeting in Las Vegas, February, 2009.

The obituary from the funeral home in Laramie, Wyoming is reproduced as it adds significantly to the memorial we can share.

The article written by Susan on a revision to a Standard she authored, D4547 is also included as it presents such a memorable example of the professional work she has accomplished both for Western Research Institute, her employer and our Committee.

We will always remember Susan for the untiring work she did for us as Chairman who always gave us of her best with kindness and humour.

## D-34 Chairman Susan Sorini recognized with ASTM Award of Merit

**Susan receiving the award from Reid Tait at the Las Vegas Committee meeting, February, 2009**

Susan Sorini, lead scientist at Western Research Institute in Laramie, Wyo., has received an ASTM International Award of Merit and the accompanying title of fellow, the highest organizational recognition for individual contributions to standards activities.

Sorini was recognized "for dedicated participation in Committee D34 on Waste Management, including significant technical contributions in the development and maintenance of standards and valued leadership service as a subcommittee and main committee officer."

A member of ASTM International since 1986, Sorini is chair of Committee D34 and works on several D34 groups. She has designed and coordinated multiple validation studies for D34 and has received two awards of apprecia-

tion and two standards development awards from the committee. Sorini, who is also a member of Committees D18 on Soil and Rock and E50 on Environmental Assessment, Risk Management and Corrective Action, served on the ASTM Committee on Standards (COS) from 2003 to 2006 and was recognized with a COS Service Award in 2005.

After graduating from Montana Tech of the University of Montana (formerly the Montana College of Mineral Science and Technology), Butte, Mont., with a bachelor's degree in chemistry, Sorini joined Western Research Institute as a technician in 1983 and assumed her current role with the company in 2003. As lead scientist, she works on method and product development and validation as well as environmental consulting. She has served as a manager of projects for the U.S. Environmental Protection Agency, the U.S. Department of Energy, the American Coal Ash Association, the Electric Power Research Institute, Environment Canada and the American Mining Congress.

In addition to ASTM International, Sorini is a member of the American Chemical Society (ACS) and has been honored with two ACS Regional Industrial Innovation Awards. She has authored or co-authored more than 70 technical publications in her field.

Established in 1898, ASTM International is one of the largest international standards development and delivery systems in the world. ASTM International meets the World Trade Organization (WTO) principles for the development of international standards: coherence, consensus, development dimension, effectiveness, impartiality, openness, relevance and transparency. ASTM standards are accepted and used in research and development, product testing, quality systems and commercial transactions around the globe.

(Reprinted from the ASTM press release and published in the May/June issue of ASTM Standardization News)

## Susan Santina Sorini-Wong

Susan Santina Sorini-Wong, 50, of Laramie, died May 30, 2009, in an automobile accident on Highway 487 north of the Shirley Basin in Wyoming.

She was born February 6, 1959, in Butte, Montana, to Barnard and Faye Sorini. On August 29, 1998, she married Gregory K. Wong at the Ivinson Mansion, in Laramie.

She earned an Associate of Science degree in biology from Montana College of Mineral Science and Technology in 1982 and a Bachelor of Science degree in chemistry, also from Montana College of Mineral Science and Technology, in 1983. The college honored her with an Alumni Recognition Award in 1997.

After graduation, she joined Western Research Institute and enjoyed a successful career there for 25 years, attaining the position of Lead Scientist. At WRI, she invented or contributed to the development of many environmental technologies. A consummate professional, she pursued science with intellect, precision, curiosity and creativity. She authored or co-authored more than 70 publications and was named on four U.S. patents.

For 20 years she was a devoted member of ASTM International (originally known as the American Society for Testing and Materials), one of the largest voluntary standards development organizations in the world. At ASTM, she served as chairman of the 270-member Committee D 34 on Waste Management from 2006 until her death. She also chaired ASTM Subcommittee D 34.01 on Sampling, Monitoring, and Characterization.

From 2003 to 2005 she served as a member of the ASTM Committee on Standards, the organization's highest governing body. In February 2009, officials of ASTM International named her an ASTM Fellow and presented her with the Award of Merit, the organization's highest honor, in recognition of her exceptional leadership and technical contributions.

Those who knew her know that she lived life like a celebration. She took deep delight in every day, every holi-

day and every season. She made every occasion a joyful event that made those around her feel special and loved. She even had her own holiday, May 10, which she called her "Favorite Day." She took delight in her pets and her garden and traveling with her husband as well as camping and fishing. She also loved her hometown of Butte.

She was preceded in death by her parents; Barnard and Faye Sorini, father-in-law Charles H. Wong, and sister-in-law Gloria W. Coltrain. She is survived by Husband, Gregory K. Wong, Laramie, Brother, Robert Thurmond, Redondo Beach, CA, Niece, Lindsey Thurmond, Redondo Beach, CA, Mother-in-Law, Cynthia Wong, Laramie, Sisters-in-Law, Melody Hayden of Fort Collins, CO, Claudia Lau of Boulder, CO.

The memorial service was held Tuesday, June 9, 2009, 11:00 a.m. at Montgomery Stryker Funeral Home, with Pastor Gerry Crites officiating. A reception followed at the Hampton Inn of Laramie, WY, 3715 E. Grand Ave.

Memorial contribution may be made to the Susan S. Sorini-Wong Memorial Scholarship fund in care of UniWyo Federal Credit Union, 1610 E. Reynolds St., Laramie, WY 82072.

**Memorials posted by ASTM Members**

Greg - I was deeply saddened to learn of your tragic loss. With Susan's generous help, she and I authored an ASTM standard method that continues to be used today in the USA and Canada. Susan was one of those rare people who not only answered one's questions with professional thoroughness, but interjected her sweet spirit into the effort. She was also a brilliant and generous scientist who didn't make you feel stupid if you asked a dumb question. She was just Susan - one in a million. We will all deeply miss her. I wish you peace in the knowledge that Susan was greatly admired and respected by her colleagues.

Sincerely,
William W. White III
Heber City, UT
ASTM colleague

Greg- I am very sorry for your loss. Susan was not only a wonderful person, but also a dedicated leader of our ASTM committee. We will all miss her.

Edward Mead
Omaha, NE 68144
Friend, ASTM D-34 Member

Greg-Your tremendous loss is also felt by her friends and colleagues in our ASTM Committee. She was a constant inspiration to us all as she most effectively managed this diverse committee. We will remember Susan as one of our best friends, as well as an accomplished leader. Please take care during this difficult time.

Sincerely
Brian M. Anderson
Sauk City, Wisconsin
Fellow ASTM D-34 Member

(Reprinted from the Montgomery-Stryker Funeral Home web site- Montgomerystryker.com)

## Revision of D4547 Standard Guide for Sampling Waste and Soils for Volatile Organic Compounds, to Include Examples of Subsampling Techniques for Subsurface Samples Collected for VOC Analysis

By Susan Sorini

ASTM Method D4547, Standard Guide for Sampling Waste and Soils for Volatile Organic Compounds, describes recommended procedures designed to minimize loss of volatile organic compounds (VOCs) during sample collection, handling, and preparation of solid waste, soil, and sediment samples for subsequent analysis. VOCs include low molecular weight aromatics, hydrocarbons, halogenated hydrocarbons, ketones, acetates, nitriles, acrylates, ethers, and sulfides with boiling points below 200° Celsius (C) that are insoluble or slightly soluble in water.

One of the principal mechanisms for loss of VOCs from materials during sample collection, handling, and storage is volatilization. In general, compounds with higher vapor pressures are more susceptible to volatilization than compounds with lower vapor pressures. Loss of VOCs during sample collection, handling, and preparation results in analytical data that are not representative of VOC concentrations in the field.

There are often several steps to sampling for VOCs, particularly if it involves obtaining bulk material from the subsurface. Most of the equipment used to obtain samples from the subsurface was originally developed for the geotechnical industry; however, several devices have been developed specifically for environmental sampling by direct push methods. Single tube and dual tube sampling devices have been developed for environmental applications and are usually operated by direct push methods. The subsurface bulk sampling systems are designed to obtain intact cylindrical cores of material, ranging anywhere from 2.5 to 10.2 cm in diameter and 30.5 cm or more in length. Sample liners used in these systems are made of a variety of materials, such as stainless steel, brass, PTFE, PVC, etc. Subsurface materials retrieved for VOC characterization are obtained (sampling tubes filled and brought to the surface) as quickly as possible and remain intact and undisturbed until they are subsampled. Subsampling a bulk sample should occur as quickly as possible after it is brought to the surface. It is important for subsampling to occur quickly because for bulk sample retrieval systems where the material is exposed directly to the atmosphere for a period of time during subsampling, there is an opportunity for VOC loss to occur.

ASTM D4547 has been revised to include examples of three liner configurations and sampling techniques for bulk soil samples collected by single tube direct push methods to reduce the potential for VOC loss when these bulk samples are subsampled for VOC analysis. These techniques were developed to provide easy soil screening without violating the integrity of the soil that will be sampled for analysis. They maintain the integrity of the soil during sample collection and provide very short exposure time of the soil to the atmosphere during sampling. The three techniques are described below. For more information on these techniques, see the new revision of D4547.

Direct Subsurface Soil Sampling Technique: For this technique, the liner, which is approximately 1-mm thick polyvinyl chloride (PVC) and has a series of circular perforations along a portion of its length that alternate in diameter, is wrapped in shrink wrap (see Figure 1). The perforations are spaced 4 cm apart. The location and number of the perforations in the liner are such so that the liner will be completely filled with soil over the length having the perforations for sample screening and collection. Any portion of the liner not completely filled with soil should not be screened or sampled. The diameter of the circular perforations that will be used for screening is 6 mm. The diameter of each circular perforation that will be used for sample collection is the dimension required for easy insertion of the hand-operated coring device that will be inserted into the hole to collect a sample. When a soil core is brought to the surface and removed from the soil sampler tube, the shrink wrap is cut and removed to expose the 6-mm perforated circles for screening. The perforated circles in the liner are removed to expose the soil. The headspace above the exposed soil can be screened using a photoionization detector (PID) or other appropriate device to determine which adjacent larger perforated circles should be removed for soil collection for VOC analysis. For sample collection, the shrink wrap is removed to expose the larger perforated circle, the perforated circle is removed, and a hand-operated coring device is quickly inserted into the hole in the liner to collect the freshly exposed soil sample. If the sample is collected using a coring device designed for transferring the sample to a storage container, the sample should be immediately extruded into an appropriate container for storage and transportation to the laboratory. If the sample is collected in a coring device designed to store the sample, the open end of the device should be immediately capped after quickly ensuring that the sealing surfaces are clean.

Direct Subsurface Soil Sampling Technique Using a Cutting Tool: For this technique, the liner, which is approximately 1-mm thick PVC, is intact and is not wrapped in shrink wrap. The soil core in the liner is brought to the surface, removed from the soil sampler tube, and placed in a metal rack for sub-sampling. A cutting tool powered by a portable drill is used to cut circles in the liner (see Figure 2). Circles may be cut through the liner at the selected spacing interval defined in the project sampling plan or based on field observation and experience. Circles can be cut in the liner over the length of the liner that is completely filled with soil for sample screening and collection. Any portion of the liner not completely filled with soil should not be screened or sampled. The diameter of each circle is the dimension required for easy insertion of the hand-operated coring device to be inserted into the hole resulting when the cut liner is removed for sample collection. The cut circles in the liner can be removed to expose the soil for screening. The headspace above the exposed soil can be screened using a PID or other appropriate device to determine which adjacent cut circles should be removed for soil collection for VOC analysis. For sample collection, the cut circle is removed and a hand-operated coring device is quickly inserted into the hole in the liner to collect the freshly exposed soil sample. If the sample is collected using a coring device designed for transferring the sample to a storage container, the sample should be immediately extruded into an appropriate container for storage and transportation to the laboratory. If the sample is collected in a coring device designed to store the sample, the open end of the device should be immediately capped after quickly ensuring that the sealing surfaces are clean.

Sectioned-Subsurface Soil Sampling Technique: For this technique, a portion of the length of the liner is cut into alternating sections of suggested lengths of 8 cm and 5 cm (see Figure 3). The location and number of the sections in the liner should be such so that the sections will be completely filled with soil for sample screening and collection. Any sections not completely filled with soil should not be screened or sampled. The 8-cm sections have a centered 6-mm perforated circle to provide access for soil headspace. The liner with the cut sections and perforated circles is wrapped in clear shrink wrap. When the soil core is brought to the surface and removed from the soil sampler tube, the shrink wrap is cut and removed to expose the 6-mm perforated circles for screening. The perforated circles in the liner are removed to expose the soil. The headspace above the exposed soil is screened using a PID or other appropriate device to determine which adjacent sections of soil should be sampled for VOC analysis. For sample collection, the shrink wrap is removed to expose the selected section for sampling. The soil in the cut liner section selected is immediately cut and the liner section with the soil is removed from the remaining soil core. The section is turned on one end and a hand-operated coring tool is used to collect a freshly exposed soil sample from the other end of the section. If the sample is collected using a coring device designed for transferring the sample to a storage container, the sample should be immediately extruded into an appropriate container for storage and transportation to the laboratory. If the sample is collected in a coring device designed to store the sample, the open end of the device should be immediately capped after quickly ensuring that the sealing surfaces are clean.

(Illustrations for this article are on the next page, (6))

Next D34 Committee Meeting:
Atlanta, Georgia
October 20-21, 2009
8 am - 5 pm both days
at
October Committee Week
Hyatt Regency, Atlanta
Contact Brynn Murphy (ASTM) for details:
tel: 610-832-9640. email: bmurphy@astm.org

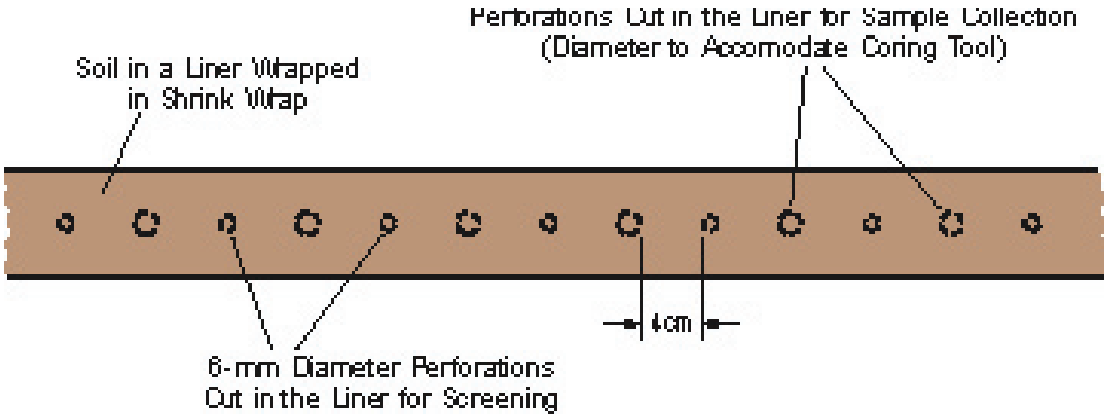


Figure 1. Partial Liner Configuration for the Direct Subsurface Soil Sampling Technique (Not to Scale)

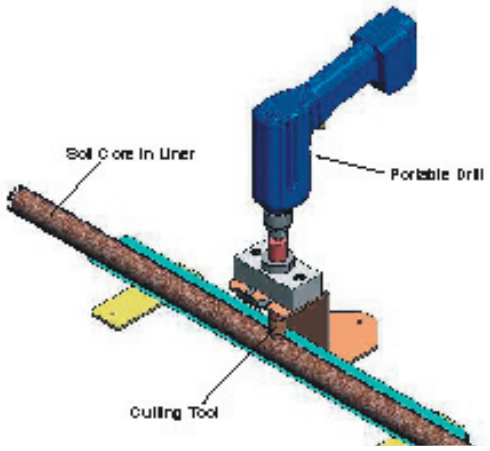


Figure 2. Direct Subsurface Soil Sampling Technique Using a Cutting Tool

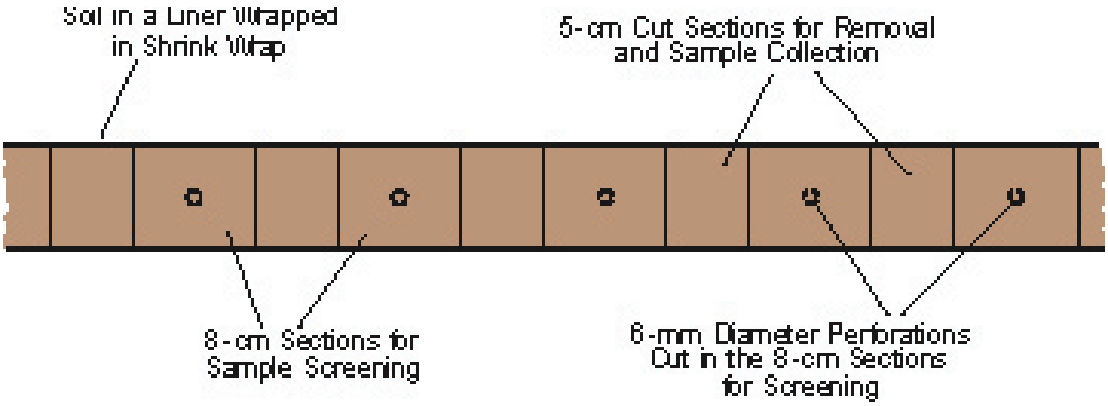


Figure 3. Partial Liner Configuration for the Sectioned Subsurface Soil Sampling Technique (Not to Scale)