Implementing *IAQ TfS*:
Resolving the Disconnect Between
School Districts/Administration and School Personnel
Web Conference Summary
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Tom Vasek	Bensalem (PA) School District
Felicia Venable	Detroit (MI) Public Schools, Environmental Health and Safety
Mark Warneke	Omaha (NE) Public Schools, Director of Buildings and Grounds
David Williams	Birmingham (AL) City Schools, Asbestos Inspector
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AGENDA

- Welcome and Introductions – Robin Anderson, U.S. EPA
- Presentations
    - Dr. Bill Smith, Program Director of Facilities, Okaloosa County (Florida) School District
    - Bruce Tretter, Parent and School Board member, Westborough (Massachusetts) Public Schools
    - Sarah Gibson, Attorney representing Westborough (Massachusetts) Teachers Association
    - Gregg Smith, P.E., Director of Facility Services, Salt Lake City School District
- General Questions and Answer Period – All presenters
- Closing Remarks – Robin Anderson, U.S. EPA

SUMMARY

Guest speakers for this call included representatives from several school districts, who graciously agreed to share their stories. These speakers included:

Okaloosa County (Florida) School District
Dr. Bill Smith is the Program Director of Facilitilies.at Okaloosa County School District. At one time, Okaloosa County, with 38,000 students in 38 schools, received hundreds of IAQ complaints each year. Dr. Smith led a campaign for the school district to implement *IAQ Tools for Schools.* Since that time, the district has seen a dramatic drop in IAQ problems. Its success led the school board to adopt *IAQ TfS* as policy, making it mandatory for all facilities. As a result of these efforts, Okaloosa County School District received EPA's *IAQ TfS* Excellence Award in 2000.

For his presentation during this Web conference, Dr. Smith provided an overview of the *IAQ TfS* Program and specified how Okaloosa County implemented the program. Okaloosa focused on improving IAQ during the design and construction of new facilities and during renovation projects. They also remediated existing problems and established an IAQ management plan for the district's buildings. These efforts required district-level support and buy-in before they became successful.

Westborough (Massachusetts) Public Schools
Bruce Tretter is a six-year resident of Westborough, Massachusetts and current School Committee (i.e., school board) member. He first ran for School Committee three years ago to help institute a district-wide IAQ management program. His impetus was a brief closing of one district elementary school in 1999. Since being elected to the School Committee, Mr. Tretter has chaired the district's Facilities Committee (formerly known as the IAQ Subcommittee). This committee was responsible for establishing district-wide IAQ/health

and safety protocols and teams for all six school buildings in the district. In 2003, Westborough Public Schools received EPA's *IAQ TfS* Excellence Award.

Sarah Gibson is an attorney in Boston, Massachusetts who represents teacher and teachers' unions in health and safety issues. Initially, she represented the Westborough Teachers Association for IAQ-related issues in Westborough schools. She then became part of the Teachers Association's team, working with the Facilities Committee to develop the district's IAQ/health and safety protocols.

The 1999 incident at a Westborough elementary school resulted in $250,000 in repairs to the HVAC system in addition to a push for action (i.e., establishing and implementing a management plan) by the community and involvement by the teachers union (i.e., a push to remediate problems, address employee health problems, and include IAQ language in a new collective bargaining agreement). This incident resulted in the formation of the IAQ Subcommittee (which included collective participation from many school community stakeholder groups). The subcommittee convened and created an IAQ Manual that is now implemented district-wide. By convening the IAQ Subcommittee and implementing the IAQ Manual, Westborough was able to enhance its credibility in the community.

Salt Lake City (Utah) School District

Gregg Smith, P.E., is a former consulting engineer. He has been the Director of Facility Services in the Salt Lake City School District for the past six years. He initiated involvement with *IAQ TfS* because of his awareness of IAQ issues and his desire to ensure a healthy environment for Salt Lake City's students and staff. Salt Lake City School District received EPA's *IAQ TfS* Excellence Award in 2003.

Because of Gregg Smith's involvement with the program, Salt Lake City implemented a facilities approach to IAQ management. Specific activities included school inspection and checks. To the extent possible, problems identified during inspections were corrected as they were encountered. Salt Lake City relied upon EPA's Region 8 for guidance, training, and technical support. The district developed a Design Guide for new construction and renovation projects. Overall, Salt Lake City's approach to IAQ management attempted to be proactive and to communicate openly, both internally and externally.

In hindsight, Salt Lake City's program could have been more successful by collaborating with school nurses and local *IAQ TfS* partners. In addition, the program would have benefited from early education (i.e., internal communication training) for school administrators, teachers, and staff.

See the attached PowerPoint file for additional detail about the information presented by EPA and the guest speakers (Dr. Bill Smith, Bruce Tretter, Sarah Gibson, and Gregg Smith).

Live Question and Answer Session

Following the presentations, seminar participants were able to ask questions of the presenters (via telephone and e-mail). The telephone questions were answered live, during the Web conference. On-line (i.e., e-mailed questions) are address in the next section of this summary document.

Donald Ray, Tennessee Department of Environmental Protection:
He is working with district superintendents and school principles in an IAQ workshop to educate them about *TfS* and IAQ issues. He wants to know the best way to overcome resistance, especially from teachers who are already overburdened and feel that they cannot make time for this additional demand. He would like guidance on how to convince teacers that implementing *IAQ TfS* will enhance teaching and learning.

Gregg Smith: Salt Lake City School District (SLCSD) had similar concerns while developing and implementing its program. SLCSD simply initiated its program without the involvement of a stakeholder group. Once the program produced some tangible results, SLCSD shared those results with teachers who were then willing to spend time on the program. In retrospect, Gregg suggests that the best approach would be "top-down" implementation beginning with the superintendent.

Bill Smith: Dr. Smith agrees with Gregg. Important to get buy-in from the top down. It is important to reduce or minimize the burden to teachers. To build buy-in slowly, be responsive to ***all*** complaints.

Sarah Gibson: Sarah's view differed from the others in that she advocates and open dialog that involves teachers in developing an IAQ program from the beginning. This approach allows teachers to provide input and feel that the district/school is really trying to address the problem and their health complaints. By involving the teachers union, they can also relay information to teachers. Also, Westborough held training sessions in every school to review the IAQ management plan and the tasks that the teachers were expected to complete. In addition, the training explained why these tasks were necessary for a successful program.

Bruce Tretter: Bruce agrees with Sarah that stakeholder buy-in is necessary from the beginning of the process. All interested parties must be involved in the process of developing a strategy and management plan. This is a collective process. An outside expert may assist with trainings and increase buy-in. Buy-in from the administration is an important key to the success of any IAQ program. In addition, internal communication must be established and maintained.

Felicia Venable, Detroit Public Schools, Department of Safety and Health:
Did any of the presenters, particularly Salt Lake City Schools, use grant money to fund any of their IAQ efforts? Is grant funding available for these types of projects? Also, Ms. Venable would like to have a copy of the presentation (i.e., PowerPoint slides).

Robin Anderson: An electronic version of the PowerPoint slides will be distributed to conference participants along with a summary of the conference and responses to online text questions.

Gregg Smith: Salt Lake district did not use any grant money to fund their efforts. They received implementation assistance from EPA Region 8. Because of recent budget cuts, the Region is not able to provide as much assistance currently. To keep costs down, SLCSD also tried to tailor its IAQ responses to fit within the existing maintenance budget.

Michele Guarneiri: Almost all of the EPA Regions have competitive grant money available. Contact your regional representative for more information (see http://www.epa.gov/iaq/contacts.html or the attached file for regional contact information).

Rita Thornton, New Jersey Department of Environmental Protection and Ph.D. Candidate at New Jersey Institute of Technology:
Ms. Thornton's academic work focuses on indoor pollution in pre-school classes. Can the *IAQ TfS* Kit be modified for use in a preschool environment?

Michele Guarneiri: Yes, the Kit is modifiable for use in any school. Other resources include your local American Lung Association chapter (see http://www.lungusa.org) and the Asthma and Allergy Foundation of America (see http://www.aafa.org).

Evangeline Reaves, Dekalb County (Georgia) Board of Health:
Ms. Reaves recently took part in an EPA Region 4 training session for facility personnel. She would like to know if EPA has any information or lesson plans allowing students to become involved in IAQ.

Dena Moglia: EPA Regions 1 and 9 have developed *IAQ TfS* curricula (see http://www.epa.gov/region01/eco/iaq/).

Text Questions and Answers

Antoinette Breining: Do you have any suggestions for getting school systems to acknowledge an IAQ issue and resolve it?

Acknowledgement of any detrimental health habit is always difficult. Lifestyle change is never easy. If the school population has notable allergies, high rates of asthma, high absenteeism, or overall poor performance, this can be brought to the attention of the school official. The school official can then choose one or two schools in a pilot study to implement the *IAQ TfS* Kit. The positive results from implementing the Kit will speak for themselves.

Please do not get discouraged when confronting school officials who may not want to implement the Kit. Time, patience, and perseverance are on your side. A presentation to the PTA may be helpful in gaining assistance and support for an *IAQ TfS* pilot study.

In addition, EPA offers many resources (free of charge) designed to supplement the *IAQ TfS* Program and to address many common concerns expressed by school staff when dealing with indoor air quality issues and implementing an IAQ management plan. In particular, the "*IAQ TfS* Program: Benefits of Improving Air Quality in the School Environment" document provides an overview of EPA's voluntary *IAQ TfS* Program and outlines the benefits of implementing the Program. This is just one of the many resources that EPA has made available for download in PDF or HTML format on the Program's Web site at www.epa.gov/iaq/schools. You may also call or e-mail the IAQ Information Clearinghouse (IAQ INFO) to request these materials (1-800-438-4318 or iaqinfo@aol.com).

David Peterson: How do you continually monitor CO_2 and CO?

Carbon dioxide (CO_2) is a colorless, odorless product of carbon combustion. Common sources of CO_2 include human metabolic processes and all combustion processes of carbon fuels, like those in

cars, buses, trucks, etc. Exhaled air is usually the largest source of CO_2 in classrooms. The ASHRAE Standard 62-1989 recommends 1,000 ppm as the upper limit for CO_2 in occupied classrooms. Ventilation with sufficient outdoor air controls CO_2 levels. Also, reduce vehicle and lawn and garden equipment idling and/or usage.

Carbon monoxide (CO) is a colorless and odorless gas. It results from incomplete oxidation of carbon in combustion processes. Common sources of CO in schools are improperly vented furnaces, malfunctioning gas ranges, or exhaust fumes that have been drawn back into the building. Worn or poorly adjusted and maintained combustion devices (e.g., boilers, furnaces) can be significant sources. Another common source is a flue that is improperly sized, blocked, disconnected, or leaking. Auto, truck, or bus exhaust from attached garages, nearby roads, or idling vehicles in parking areas can also be sources of CO. The Consumer Product Safety Commission recommends levels not to exceed 15 ppm for 1 hour or 25 ppm for 8 hours. Combustion equipment must be maintained to assure that there are no blockages; air and fuel mixtures must be properly adjusted to ensure more complete combustion. Vehicular use should be carefully managed adjacent to buildings and in vocational programs. Additional ventilation can be used as temporary measure when high levels of CO are expected for short periods of time.

Please refer to our website at http://www.epa.gov/iaq/co.html for additional information about CO.

In order to properly address your question regarding continuously monitoring CO and CO_2 levels, additional information is required. For example, will monitoring occur outdoors or indoors? Will monitoring occur in the science lab or in the general area of the school building? Please feel free to contact our IAQ Technical Hotline at 1-866-837-3721 or tfs_help@epa.gov to discuss your particular situation. The hotline is staffed from 8:30 a.m. to 4:30 p.m. Central time.

Vonnie Good: How exactly did you use the *TfS* kit?

Okaloosa County response: "TfS was introduced at the start of the Okaloosa County Program and was used as a guide and resource for the ongoing Indoor Air Quality Program."

Christopher Dean: Dr. Smith, could I get one of your complaint forms.

A copy of Dr. Smith's complaint form will be sent to all participants of this conference call, along with a summary of the call.

Jeffrey Moquin: In your district, how do you convey the difference between a legitimate air quality issue as opposed to a deferred maintenance issue to individual occupants?

A very fine line exists between a legitimate air quality issue and deferred maintenance issue. In some cases, the two overlap and intertwine. It is not easy to walk into a school and label issues as an air quality issue or as a deferred maintenance issue. The Tools for Schools Kit is versatile enough to immediately identify indoor air quality issues that can easily be addressed as well as create a long term maintenance plan for your school.

Dan Tranter: I would like to promote this web-based conference to my school contacts in Minnesota. Can I recommend that school officials contact the IAQTraining@cadmusgroup.com address to sign up for notification of future conferences?

To be placed on the distribution list for information about future *IAQ TfS* Web conferences, provide your name, address, affiliation, phone number, and e-mail address to IAQTraining@cadmusgroup.com.

Rita Thornton: Can the IAQ kit be modified to be used in preschool classroom environments?

Yes. The IAQ Kit can be used in any school environment that has identified a Tools for Schools coordinator and a supportive team to assist with completing the checklist and walkthrough inspection of the facility.

Claudius Carnegie: How are these different School Districts dealing with Workers Compensation issues?

Westborough County response: "I am not sure how we deal with Workers Comp. That's an administrative issue. I'm a school board member. I do believe, however, that we haven't yet had a workers comp IAQ issue."

Both Okaloosa County and Salt Lake City response: "We have not had a problem with Workman Compensation as it relates to IAQ."

Mazie Smith: Did you involve the American Lung Association in your program planning?

Westborough County response: "We (Westborough) did not involve them."

Salt Lake City response: "Our local ALA chapter was aware of our efforts but they weren't involved directly in our efforts (mainly due to our "bottom – up" approach to TfS)."

Okaloosa County response: "No."

Mazie Smith: Westborough District, how much money did you spend on implementation of *TfS*?

"Implementation itself didn't cost much – probably on the order of hundreds of dollars for copies. I believe Sarah's legal services were paid for by the state teachers union. Again, heightened awareness among all staff has probably saved us some money as we've been able to identify/remediate problems or potential problems earlier rather than later."

Mazie Smith: Westborough District: Did you hire a consultant to help you implement your plan?

"No. We didn't know of one that was available."

Mazie Smith: Salt Lake City: How large is your school system?

"We have an average daily attendance of 24,400 students in 27 elementary, 5 middle, and 3 high schools, plus 1 alternative high school (an alternative high school is for students that have dropped out of school or adults returning to school to obtain their GED)."

Vyvyan Boykin: For Sarah: What's the status of an IAQ regulation by OSHA? Anything moving on that issue? I do realize that a possible IAQ regulation is currently in the same status as a possible ergonomics regulation via OSHA. Your comments?

In 1994, OSHA had proposed an indoor air quality standard. The agency withdrew its proposal and terminated the rulemaking process in December, 2001, without enacting a standard. At this time, OSHA has not advanced any new rule on indoor air quality. OSHA's Technical Manual, Section III, Chapter 2 contains information for its field investigators about how to conduct an indoor air quality investigation, and refers to ASHRAE standards as guidance in air quality investigations. The Technical Manual can be found in its entirety at http://www.osha.gov/dts/osta/otm/otm_toc.html.

OSHA's regulations do not apply to the public sector, although some states have "state OSHA plans" that may include public sector employers and employees

Claire Barnett: For student curriculum, see www.greensquad.org

Also, EPA Region 1 has designed a curriculum for grades K to 3. This curriculum may be downloaded from www.epa.gov/region01/eco/iaq.

Dan Tranter: What success have the presenters had in hiring additional custodial staff using superior IAQ as the justification (cleaning, maintenance, housekeeping, etc.)? How were decision-makers persuaded?

Westborough County response: "Due to budget constraints, we're actually cutting back slightly on custodial staff (as well as all other staffing, including teachers). We did, however, hire a new facilities director and night custodial supervisor a few years ago, partly to ensure appropriate IAQ/maintenance that contribute to good IAQ. Awareness is the key to a good program among all staff."

Okaloosa County response: "Because of budget problems, the custodial staff of almost every school has been cut over the last 10 years."

Salt Lake City response: "To my knowledge, superior IAQ or the fact that we have a successful TfS program has not been a factor in the District's hiring practices. We've never had the public exposure that would create the perception of having poor IAQ so this doesn't seem to be a commonly asked question from parents or staff."

CLOSING REMARKS

The next *IAQ TfS* Web conference will be held in July and will focus on maintenance methods and strategies for summer months (while schools are not in session).