

Laboratory Waste Minimization: Reflections

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Since this will be our last column, at least for awhile, we are taking this opportunity to present some thoughts based on 11 years of writing on laboratory waste minimization.

First, in our opinion, the single most effective laboratory waste minimization strategy is good housekeeping. For many, this is a tough option to pursue because it is a constant need and entropy is a powerful reality. Nor is it easy to demonstrate that good housekeeping has caused a reduction in waste production or costs. Nonetheless we are convinced that continuing attention to good housekeeping is the foundation of laboratory waste minimization. Closely related to good housekeeping is the practice of planning activities before action. Waste minimization is most effective when addressed before activities begin rather than after an activity has already started.

Second, everyone likes checklists—just tell us what to do and we'll be glad to do it. Similarly, our columns on audits generated quite a bit of interest. Our feeling is that general purpose checklists, and to a less degree – audits, have limited value in laboratories because there are so many differences between settings that such tools are likely to be either much too general or much too specific to be useful. As a result, we encourage laboratory workers to periodically take time to develop their own checklists with an eye toward how their chemicals can be used most efficiently with the generation of the least amount of waste. Audits should be designed so that conceptual goals are evaluated, rather than specific ones. With few exceptions, people don't need training in laboratory waste minimization; instead, they merely need to incorporate the concepts into their thinking. The Chemical Hygiene Plan is an excellent place to incorporate waste minimization.

Third, the biggest successes come from the cumulative results of many little successes. Opportunities for cutting solvent usage in half or eliminating mercury use do not come around very often. However, maybe you can reduce chemical use in a standard analytical procedure by a few milliliters, and over time this reduction can become significant. Celebrate and share these small successes, because they are the basis for big successes. The biggest challenge to continuing waste minimization successes is to keep at it after you have had a success. Don't fall into the trap of neglecting waste minimization because you had a big success story. Use your successes, however small, to generate even more success stories.

And finally, acknowledging the fluidity of personnel over time (and in a nod to our own decision to step back from this column), is the need for each person that contributes to waste minimization to leave behind a legacy. Instill in each new person the knowledge you've gained and the changes you've seen. Encourage them to make waste minimization an integral part of their thought process so they

won't even know a time existed when it wasn't the norm. If you can accomplish this, it may one day eclipse all your greatest individual successes.

We want to give the editors of *Chemical Health and Safety* our special thanks for encouraging and supporting this column. Warren Kingsley, the Founding Editor, was especially supportive when the concept of this column was put before him. Carl Gotschall and now Harry Elston have likewise been extremely supportive of our efforts with this column. We also take this opportunity to recognize Cindy Klein-Banai, who was a coauthor on this column in its early years.

While there does seem to be more interest in laboratory waste minimization now, it would be fraudulent to say we have observed a radical shift in thinking over these past 11 years. Perhaps the biggest change has been the number of places that have made serious attempts to reduce mercury usage, something we first wrote about over ten years ago. While other concerns—particularly those related to security and biological hazards—have become the issues of the day, writing these columns has certainly helped us develop our own waste minimization programs. Hopefully, they have helped our readers as well.

Waste Minimization Recommendation #87: Establish a culture and legacy of waste minimization in your laboratory. Special initiatives can reduce wastes on a temporary basis; however, constant attention to waste minimization is necessary for continuing success.

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