

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Science Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

SUBJECT: EMS Environmental Aspect: Chemical Resources – Target B2

FROM: EMS Chemical Resources Workgroup

TO: EMS Team

DATE: April 5, 2007

Objective: Determine opportunities for “source reduction” and “source substitution” of chemicals to meet Executive Orders.

Target B2: Determine whether opportunities exist to reduce the facility use of chemical resources (both hazardous and non-hazardous materials) by employing source reduction, substitution, recycling and reuse.

If opportunities exist, develop strategies to reduce the use of chemical resources. Strategy to include procedures to ensure least operable quantity of chemicals are kept in inventory and that all unusable/expired chemicals are disposed of in a timely manner.

Baseline Data: The inventory of chemicals developed by the first Chemical Resources Workgroup – Target B1 –was used as background information. It turned out that this was not very useful because it was static information, ie. it was just a snapshot of the inventory at one point in time.

Methodology: The Chemical Resources Workgroup initially met in January 2005. But, it soon became clear that the group would not be able to accomplish everything on their own. The EMS Team decided to set a new meeting schedule to include the workgroup. Every 3rd Wednesday of the month the core EMS Team would meet with the Workgroup to work on this task together. This turned out to be a successful fit. The first meeting as a group was in March 2005. When suggestions and ideas developed, the EMS Team was able to implement them without delay. The two groups initially came up with a brainstorming list to jumpstart the ideas (see attachment 1.) Not all ideas were acted on but, all were discussed for possibilities.

Activities and Accomplishments:

- May 2005: Earthday event. Set up a laboratory demo day to present the different capabilities of each organization, to introduce staff to different people and ideas, to showcase the solvent distillation unit used for recycling. It was a successful event increasing awareness.

- Chemical Sharing program with High Schools in place and documented
 - Researched what other EPA labs are doing
 - Asked for legal advice
 - Put together list of schools in our vicinity
 - Developed list of contacts: names, phone numbers, email
 - Developed offer letter and transfer letter
 - Researched GSA regulations regarding transfers of chemicals
 - As of Dec 1, two schools had responded positively and requested chemicals
 - Completed written procedures for the Chemical Sharing program (See attachment 2)
 - First two shipments of chemicals transferred to schools completed by March 2007.

- Wording added to OPP SOPs to encourage analysts to consider recycling of excess solvents (distillation). See attachment 3. The actual process for applying the stickers is in attachment 4.
- A message will be sent to the facility each year (thru OPM “tickler” system to remind staff about existence of ChemShare group and what it can do for them. (See attachment 5.)
- Initial efforts failed to get SHEMD HQ to fund a National Technical Assistance Contract (NTAC) consolidation of the OPP and R3 VIM inventories, so that chemical inventory information could be more easily shared by entire building to increase efficiency. A second NTAC request to SHEMD was declined, but R3 & OPP funding for the VIM consolidation is approved and pending.

Workgroup Members:

Diane Rains (OPP)

Pat Sosinski (ASQAB)

Arnold Turner (ASQAB)

Attachment 1:

Brainstorm Chemical Resource March 2005

Artificial expiration date (Are we throwing chemicals out early?)

Substitution if possible

Send useable Chemicals to schools

Miniaturization

Can't see VIM inventory for both sides to share between Labs (Funding issue)

Get methods changed nationally

Offer up chemicals prior to disposal (i.e. by tracking exp. Dates) use VIM

Recycle MeCl₂ used by OPP (ACB)

Dedicate FTE to do method development

Recycle other chemicals. Contractor could run the Still?

More ESC wide education (tour of still – example) Demos-Earth Day. PCR, min., Gene chips

Check VIM ordering

Check VIM integrity

Replace HG thermometers (need written policy from Haz Waste)

Priority TRI vs Volume (need a measurable success)

Attachment 2:

CHEMSHARE Chemical Adoption Procedure - 3/28/2007

Chemical collection:

- ESC staff will use the CHEMSHARE mail group to offer up excess or near expiration chemicals for others to use if they can, instead of considering them as waste for disposal. ESC staff will be instructed to place the chemicals in their satellite waste storage area, remove the bar codes, and label as CHEMSHARE.
- The Hazardous Waste contractor will be aware that chemicals are available since they will be a recipient of the CHEMSHARE emails. The chemicals will be collected during routine rounds and moved to the J103 R3 CHEMSHARE and D227 OPP CHEMSHARE storage areas.
- In addition, the Hazardous Waste contractor will notify the CHEMSHARE mail group when chemicals are being considered for disposal that are at least 1/3 full, in the original containers, and seem to be good candidates for donation.
- The CHEMSHARE group will then need to notify the ESC that these chemicals are available for adoption.

Inventory update:

- The Hazardous Waste contractor will update the CHEMSHARE inventory with the name and manufacturer of the chemicals, approximate volumes, condition of containers, age or expiration date, if known, and date transferred to CHEMSHARE. The inventory will be available for everyone to view at J:\Chem Share Chemical Tracking.

Adoption/Disposal process:

- If the chemicals are not claimed by ESC staff within 3 months, the EMS Team will offer local area schools any materials that the SHEM Manager approves for donation.
- An email will be sent by Facilities Management to the current email contact list of participating schools listing what we have to offer for donation. As we determine additional schools and contacts, they will be added to the list. Any positive responses from the schools will be forwarded to the CHEMSHARE mail group.
- If the chemicals are not donated within 3 months, the SHEM Manager will instruct the Hazardous Waste contractor to remove them from the CHEMSHARE inventory and dispose of them as appropriate.
- If the chemicals are chosen for donation, they will be transported to the school by the SHEM Manager and/or CHEMSHARE group members, using approved DOT shipping containers and a government vehicle. Paperwork to be provided to the school contact during the donation includes all appropriate MSDS sheets, copies of the Transfer of Ownership Certification and the GSA Standard Form 123 (signed by the SHEM Manager and the school representative).
- Copies of the original signed GSA Standard Form 123 and the Transfer Certification will be maintained by the SHEM Manager, with faxed (215-446-5116) copies sent to the GSA Supervisory Property Disposal Specialist at the GSA Regional Office in Philadelphia.

Documents:

All document templates (ie. notification for schools, list of schools, transfer certificate, SF 123) and completed forms will be kept electronically in the directory: J:\EMS -Environmental Management Systems\CHEMSHARE. The SHEM Manager will retain the original signed copies of the donation documents.

Attachment 3:

EMS Insert for OPP SOPs

Version 1.0

September 21, 2005

Any method using methylene chloride should be evaluated by the analyst to see if the methylene chloride could be recycled by the EPA Region 3 methylene chloride still. The following list is an initial guidance for consideration:

If there is acetone or hexane mixed in with the methylene chloride, the methylene chloride can NOT be recycled.

The presence of traces of water is permissible for the recycling of methylene chloride.

The most common procedures where Region 3 recycles the methylene chloride are liquid-liquid extractions and Roto-Vap or N-evap where the methylene chloride is recovered.

If the analyst determines that the method is using methylene chloride which could be recycled, contact a member of the EMS team to receive further instruction on necessary labeling and solvent handling for recycling. The successful recycling of methylene chloride is a cost saving way to reduce the environmental impact of our laboratories.

Attachment 4:

OPP Procedure for using recycling stickers on chemicals.

1. Diane Rains will print up the sheets of stickers and give them to Pat Schermerhorn to put into the folder with the VIM inventory sticker system.
2. Pat S. or Paul Golden will place the “consider recycling” stickers on all jugs of methylene chloride they place into the OPP inventory.
3. Pat S. will alert Diane R. when the sticker inventory becomes low and she will generate new sheets of stickers.

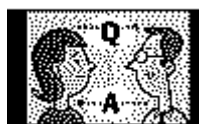
Attachment 5:

Tickler message.....



If you're trying to find a chemical or reagent that might be somewhere on the other side of the building, don't forget to ask

the [ChemShare Team](#) for help.



The ChemShare Team is available to help you find needed chemicals that might be located in labs on the other side of the building. Also, if you have chemicals that you would like to offer up before they reach expiration, the ChemShare Team can help. The process is very simple, just contact one of the members of the ChemShare Team and they will be happy to graciously assist you. The members of the ChemShare Team are ([R3 ESC-CHEMSHARE](#)):

[Paul Golden](#), OPP 2960
[Pat Schermerhorn](#), OPP 2961
[Mick Yanchulis](#), OPP 2958
[Michele Cottrill](#), OPP 2955
[Robin Costas](#), R3 2659
[Arnold Turner](#), R3 2676
[Mike Whitworth](#), OPM 2859
[Lynda Podhorniak](#), OPP 2926
[Skip Weisberg](#), OPM 2681
[Derek Brachetti](#), EMSI, 2857

The EMS Team