

## WHAT IS LABORATORY WASTE?

Any waste chemical generated by the Freeport-McMoRan Morenci Inc (Morenci) laboratories or waste that has been contaminated by the analytical process.

## WHO DOES THIS APPLY TO?

This BMP applies to all the laboratories on Morenci property, including the labs at the Solvent Extraction and Electrowinning Plants, the Concentrator, the Concentrate Leach Plant, RCM, and any other lab type settings.

## HOW SHOULD LABORATORY WASTES BE MANAGED?

### Hazardous Wastes

- Chemicals known to be used at Morenci laboratories that are subject to hazardous waste regulations when disposed of including but not limited to:
  - acetone,
  - ammonium bifluoride
  - hydrofluoric acid solution,
  - methyl alcohol,
  - ~~nitric acid~~, perchloric acid,
  - sodium hydroxide solution,
  - crucibles and cupels, and
  - toluene
- These chemicals should neither be disposed of in sinks that drain to the wastewater treatment plant, industrial drain or to a process system (i.e. raffinate pond) nor should they be mixed with process solutions that will be returned to the system.
- Rags used to wipe or clean up solutions, glassware, or spills of the above mentioned chemicals must be managed according to the hazardous waste regulations.
- These waste chemicals and/or contaminated materials must be managed as a hazardous waste and collected near the point of generation, at a satellite accumulation point.
- The hazardous waste accumulation container must be a DOT approved drum compatible with the material being stored in the container. DOT approved containers are available from the Environmental Services Department. **A used container from salvage is not an approved container and should never be used to accumulate hazardous waste.**
- The container used to accumulate the waste laboratory chemicals must be clearly marked with both the words "Hazardous Waste" and the name of the waste chemical being collected.
- Not more than 55 gallons of one type of hazardous waste may be accumulated at any satellite accumulation point.
- The waste at a satellite accumulation point must be under the control of the operator of the process generating the waste. If a drum of hazardous waste is stored outdoors, it is not considered under the control of the operator unless it is locked inside a containment system.
- Waste chemicals must be poured into the container using a funnel. This funnel must attach securely to the container or be taken out after adding or removing the material. (A container with a funnel in the opening is not closed).
- Empty drums/containers that once contained material other than a petroleum product should be triple rinsed by the user, with a material capable of removing the product. Fluids used to rinse the drums/containers should, if possible, be collected and placed into the process for

which it was intended. If rinse fluids cannot be placed back into the process, Environmental Services should be contacted to determine the best means of handling them. Empty drums/containers should then be transported to the **Environmental Yard** for recycling and/or disposal. All drums/containers delivered without being emptied and rinsed properly will be picked up by the user and returned to their origin until they are properly rinsed.

- Spilled hazardous chemicals should be immediately clean up and placed in the appropriate satellite accumulation container. Additionally, Environmental Services should be notified of the spill pursuant to Environmental **BMP No. 400 – Spill Notification**.
- When the 55 gallon limit is reached at the satellite accumulation point, the container must be marked with the date the container was filled and then moved to the Morenci Hazardous Waste Accumulation Facility within 3 days.

### **Process Solutions**

- Spent samples of process solution (i.e. PLS, raffinate, electrolyte, sulfuric acid, etc.) can be returned to the SX/EW process. Chemicals that are not beneficial to the SX/EW process should not be disposed of in the SX/EW process; this includes minute quantities of chemical that due to its insignificant quantity would not have an effect on the process.

### **Assay Lab Treatment System (CLP Lab)**

- Only chemical waste approved by the Environmental Services shall be placed in the sinks attached to the treatment system. To date the approved chemicals include:
  - Nitric Acid
  - Sulfuric Acid
- Solutions accumulating in the treatment tank should be neutralized with sodium hydroxide.
- Solutions in the treatment system must be kept at a near neutral pH.
- If the solutions are not near neutral, they should not be discharged to the industrial drain.

### **Crucibles, Cupels, and Slag**

- LECO Crucibles and cupels must be collected in DOT approved containers and managed as a hazardous waste.

### **Ore Samples from Central Analytical Services Center**

- Ore samples will be collected in a roll-off container at the lab.
- Once a roll-off container is full, the lab personnel must contact the carrier to transport the full bin to Morenci and notify Morenci Environmental Services personnel.
- Morenci Environmental Services will contact the Leach Stockpile Division to obtain guidance where to unload the container for recycling the copper content.
- Lab personnel will develop necessary paperwork for transporting the container and provide the paperwork to the carrier.
- Upon arrival at Morenci, the carrier will contact Environmental Services personnel for guidance and possibly escort to delivery location on an active stockpile.
- Carrier will weigh in upon arrival and weigh out. The scale ticket and a copy of the paperwork must be forwarded to Environmental Services.

**WHAT OTHER BEST MANAGEMENT PRACTICES APPLY TO LABORATORY CHEMICAL WASTE MANAGEMENT?**

- BMP No. 306 – Solid Waste Management
- BMP No. 313 – Drum/Container Management
- BMP No. 316 – Used Absorbent and Used Rags
- BMP No. 318 – Housekeeping
- BMP No. 321 – Secondary Containment Containers
- BMP No. 328 – Satellite Accumulation Points
- BMP No. 400 – Spill Notification

**EMPLOYEE TRAINING**

- All personnel shall receive training or at the least have access to this BMP when dealing with laboratory waste management and disposal on Morenci property.
- Training will be provided by Supervisor and/or Team Environmental Representative.
- All personnel handling any hazardous waste should receive hazardous waste management training annually, which is provided by the Environmental Services.

**QUESTIONS OR NEED HELP? CONTACT:**

**Your Division Representatives**

**Enviro Representatives Phone Ext:**

**Cynthia Christenson (Mine)..... 865-6512**  
**Shanna Holguin (Townsite) ..... 865-6225**  
**Jorge Loya (Asbestos Sampling)..... 865-7014**  
**Bryan Taylor..... 865-6697**  
**Bruce Wright (Enviro yard)..... 865-7817**

**Enviro Representatives Cell Phones:**

**Cynthia Christenson (Mine)..... 965-1030**  
**Shanna Holguin (Townsite) ..... 965-0245**  
**Jorge Loya (Asbestos Sampling)..... 965-1317**  
**Bryan Taylor..... 965-2777**  
**Bruce Wright (Enviro yard)..... 965-0028**

**Environmental Service Office:**

**865-6000**