

## **Pollution Prevention Measures for Hospitals**

### **Reasons to implement waste reduction programs.**

1. Reduce operation cost.
2. Reduce waste disposal cost.
3. Reduce long-term liability.
4. Help sustain environmental quality.
5. Improve workplace safety and employee health.
6. Project a positive public image.

### **These are measures that may help you reach these benefits.**

#### **Waste Minimization Methods**

1. Use environmentally safe and substitute chemicals, including cleaning agents that are less harsh whenever possible. (ex. Substitute special detergents for chromic acid to wash glassware in the labs.)
2. Reduce the volume of chemicals used within the different departments.
3. Recycle used chemicals, film & paper and mercury wastes when possible to reduce the quantity being purchased and disposed. Always use the proper safety controls.
4. Require manufacturer to pickup damage, off spec or outdated materials.
5. Minimize strength of solutions when possible (ex. formaldehyde).
6. Use the appropriate treatment process for the type of waste you are generating. (ex. Reverse osmosis for cleaning demands of dialysis)
7. Recover silver efficiently.
8. Use countercurrent washing for the photographic chemicals.
9. Utilize pre-mixed kits for tests involving solvent fixation.
10. Utilize calibrated solvent dispensers for routine tests.
11. Substitute electronic sensing devices for mercury-containing devices, when possible.
12. Purchase low-leakage equipment especially for Anesthetic gases.
13. Neutralize acid waste with basic waste.
14. Properly dispose of all prescriptive and non-prescriptive drugs, chemicals and hazardous waste. These materials are considered non-permitted waste and should not be disposed of to the POTW.

## **Training of Personnel**

1. Train personnel in pollution prevention and waste management practices.
2. Train personnel to consistently follow proper operations and maintenance practices.
3. Re-train personnel periodically.
4. Provide operating instructions that are readily available.

## **Housekeeping**

1. Reduce the disposal of chemicals that are outdated by utilizing the FIFO Method (First-In, First-Out) and ordering less quantity.
2. Keep storage and work areas clean and all containers properly labeled.
3. Segregate all waste.
4. Keep accurate records of material usage.
5. Have all containers covered to prevent evaporation and spillage.
6. Try to find environmentally friendly and multipurpose solvents.
7. Keep spill cleanup kits available for all types of materials available within the different departments (ex. Solvents, mercury, etc.).
8. Emphasize dry cleanup to reduce amount of wastewater discharge.
9. Minimize waste generated from maintenance and cleaning of equipment.
10. Utilize secondary containments, including splashboards and drip pans to minimize the release of chemicals.
11. Maintain anesthetic gases properly to avoid leaks.

## **OPERATING PROCEDURES**

- A. Grease traps shall be maintained on a regular basis, minimum every THREE MONTHS as per Chapter 94, Article VI, of the Lafayette City-Parish Consolidated Government's Code of Ordinances.
- B. Acid Neutralization Basin shall be inspected and maintained on a regular basis.
- C. Formaldehyde should be minimized or eliminated in areas where possible and neutralized prior to disposal to the POTW.
- D. Waste from a STERIS auto sterilizer contains molybdenum. These wastes should be minimized and or eliminated from entering the POTW.
- E. The use of Phenolics for disinfection should be minimized or eliminated in non-critical areas. Prepare the solution utilizing the appropriate dose and the minimum amount of solution prepared for the disinfectant task.
- F. Avoid the use of products containing tributyl tin also referred to as tributyltin chloride, tributyl tin neodeconate, bis tributyltin oxide, and tributyl tin benzoate as an active ingredient. This product is normally found in mildew controlling carpet shampoos, toilet cleaner and germicidal surface cleaner.
- G. Cooling Towers treatment chemicals should be environmentally friendly and not contain copper, zinc, molybdenum or tributyl tin.
- H. Recycle any and all materials when possible (ex. Oil, mercury, non-hazardous waste, etc.).
- I. All activities performed within the different areas of the hospitals that produce hazardous waste, metal containing solutions and solvents are to be stored in secondary containments, segregated and every precaution shall be taken to prevent these materials from entering the POTW.
  - Liquid sterilants, such as glutaraldehyde, and phenols should be minimized or eliminated in areas including Central Sterilization, Dialysis, Facility Maintenance / Housekeeping, etc. where possible.
  - The tissue fixatives, Zanker's solution and B5 solution, utilized primarily in the Laboratory of the hospital are extremely hazardous and should be used in the smallest possible volumes with the excess being rinsed to a waste container and disposed of according to local, state and federal regulations. Rinsing to the sink should be avoided.

- Stains normally prepared within the Laboratory of a hospital contain mercury. Therefore, stains are to be disposed according to local, state and federal regulations, and never washed in the sink.
  - Solutions containing silver must be collected and properly disposed of according to local, state and federal regulations.
  - All chemicals and materials associated with radiation or radioactive therapy shall be collected and disposed of according to all local, state and federal regulations. No chemical or material associated with these processes is allowed to enter the POTW.
- J. The Grease Trap must be designed, installed and maintained according to the conditions set-forth in the Ordinance.

Avoid connecting dishwasher(s) to grease trap.

Verify the maintenance of grease trap is being performed every 90 days by supervising and inspecting the following:

1. All solids and sludge are removed.
  2. Once clean, verify the trap is filled past the discharge lines with clean water.
  3. Screw caps are to be in tact and present on the inlet and outlet discharge lines of the grease traps in order to prevent slugs of grease and debris from entering the sewer system.
- K. Choose test systems, instruments and methods throughout the hospital that reduce or eliminate waste problems.
- L. All specimens that are collected in Pathology and Morgue are to be disposed of according to all local, state and federal regulations and neither the storage container nor the slides containing the stains are to be washed in the sink.
- M. Chemicals or waste products located above or next to a sink or floor drain shall be properly labeled, located within secondary containment or the drain shall be elevated to reduce the risk of accidental spillage into the POTW.
- N. Recommended that absorbent material is centrally located for easy accessibility.
- O. Processing and holding tanks for silver-rich solutions and the silver recovery or management system must be maintained in a manner that protects the material from accidental release to the POTW.

- P. The facility must have a spill plan to ensure spills of silver-rich solutions are not accidentally released to the POTW.
- Q. All medical drugs both prescriptive and non-prescriptive shall be disposed of according to local, state and federal regulations. All medical drugs prescribed and/or over the counter, should not be discharged to the POTW.
- R. Verify all sinks located in the laboratory are routed to the Neutralization Basin.

Replace limestones in the Neutralization basin when stones have deteriorated to pebble size.