

### 16.2 Other Models for Estimating Air and Water Loadings

The Agency also welcomes suggestions regarding the use of other computer models for estimating air and water loadings at pharmaceutical plants.

#### 17.1 Alternative Technologies to Steam Stripping or Steam Stripping With Distillation Technology

For volatile organic pollutants, EPA is proposing to base its BAT limitations for facilities with subcategory A and/or C operations and PSES limitations for all manufacturing subcategories on steam stripping technology. EPA also proposed to base NSPS and PSNS regulations for all manufacturing subcategories for those pollutants on in-plant steam stripping with distillation technology. The Agency believes that steam stripping technology is the best available technology and that steam stripping with distillation technology is the best demonstrated technology for removing volatile pollutants from wastewater that also offer the opportunity for recovery and recycle of solvents.

EPA solicits comments accompanied by data regarding other technologies designed to remove volatile organic pollutants from wastewater. Information on alternative technologies should be accompanied by influent and effluent data that demonstrate removal.

### 18.0 Materials of Construction for Steam Stripper and Distillation Columns

EPA has used stainless steel as its construction material in steam stripper and distillation column capital cost estimates. Nonetheless, the Agency recognizes that certain corrosive (low pH) streams may require the use of construction materials made of corrosion resistant alloys such as Hastalloy to allow long-term operation of steam strippers and distillation columns.

#### 18.1 Process Wastewater Characteristics Requiring Special Alloys

The Agency solicits comments and data on the characteristics of any process wastewater streams that may require that steam strippers and/or distillation columns be constructed of highly specialized alloys such as Hastalloy.

#### 18.2 Existing Materials of Construction

The Agency requests information regarding the construction materials used to build all the steam strippers and distillation units currently in-place within the industry.

### 19.0 Streams Containing Volatile Organic Pollutants That Also Contain Significant Amounts of Dissolved Solids

EPA wants to ensure that the final limitations and standards for volatile organics based on steam stripping or steam stripping with distillation technology adequately reflect the dissolved solids content of representative industry wastestreams. The Agency is aware that certain waste streams that contain large concentrations of certain inorganic salts may cause scaling problems within packed columns that may reduce column performance. Consequently, EPA solicits comments supported by data concerning the strippability of wastestreams containing high concentrations of inorganic salts (dissolved solids).

### 20.0 COD Removal Through Steam Stripping and Steam Stripping With Distillation

As indicated earlier in this preamble, the Agency does not have removal data for COD achievable through steam stripping and steam stripping with distillation technology.

#### 20.1 COD Removal Data

EPA solicits any influent and effluent COD data across a steam stripper and/or distillation unit for any available time period. The COD influent and effluent data should also include influent stream characteristics data (i.e., organic constituent concentrations) if possible. EPA also solicits COD data for any facilities that also have a biological treatment system following a steam stripper or distillation unit for which COD data are available or may be gathered.

#### 20.2 COD Regulation Beyond BPT

EPA is proposing BAT limitations and NSPS for COD for all manufacturing subcategories based on advanced biological treatment (the BPT-level technology). EPA is not proposing COD limitations and standards based on steam stripping or steam stripping with distillation because EPA is unable at this time to quantify the COD loading reductions attainable through those technologies in addition to advanced biological treatment. EPA solicits comments and data concerning whether BAT limitations and NSPS for COD based on in-plant steam stripping or steam stripping with distillation in addition to advanced biological treatment are necessary or appropriate for facilities with subcategory A and/or C operations. EPA also solicits comments and data on the advisability of adding granular activated carbon

adsorption technology to the steam stripping-based technologies for additional removal of COD. EPA also solicits comments and data concerning BAT limitations and NSPS for COD for facilities with subcategory B and D operations.

### 21.0 Clean Up of Steam Stripping and Distillation Overheads, i.e., Condensates

#### 21.1 Additional Treatment Required for Clean Up

EPA is aware that the overhead materials recovered from steam stripping and distillation may need to be "cleaned up" prior to reuse. EPA solicits information on the technologies that are currently being used to purify overheads from steam stripping and distillation.

#### 21.2 Costs of Overhead Recovery for Reuse

EPA solicits information and data regarding the costs of cleaning up or purifying overheads for reuse in manufacturing operations along with information on the cost of virgin solvent materials.

#### 22.0 Clean Fuels

EPA is aware that some facilities use distillation/steam stripping overheads as boiler feed. The Agency solicits data and comment concerning the use of such overheads as "clean fuels" from plants which are using overheads as boiler feed and from plants which plan to do so in the future.

### 23.0 Regulation of Ammonia at BAT and PSES

EPA is proposing effluent limitations and standards controlling the discharge of the pollutant ammonia for facilities with subcategory A and/or C operations because it is a pollutant of concern and is discharged at treatable concentration levels. Data are available demonstrating that ammonia passes through POTWs, and that ammonia is not adequately treated at direct dischargers. The control technology basis for BAT ammonia limitations is incidental removal through in-plant steam stripping and advanced biological treatment upgraded for nitrification. The control technology basis for PSES ammonia limitations is removal through in-plant steam stripping. Industry representatives have commented that ammonia discharges from direct dischargers should be controlled through water quality standards. Industry representatives have also commented that the adoption of technology-based limitations and standards for ammonia would result in