

carbon source, lagoon bypass). See Section III.B for a discussion on the revised cost methodology and Section V.D for a discussion on transferring nitrogen data from poultry to red meat facilities. EPA notes that references, such as Randall, C., Barnard, J., Stensel, H., 1992. Design and retrofit of wastewater treatment plants for biological nutrient removal. Technomic Publishing Co., Inc., Lancaster, Pennsylvania, can provide guidance on how to upgrade treatment systems to perform nutrient removal (see DCN 100771 for other references).

EPA estimates that revising BPT to incorporate limits for Total Nitrogen under Option 2.5 will remove an additional 27.7 million pounds/year of nitrogen from the discharges of facilities in Subcategories A–D. In addition, as compared to the baseline (*i.e.*, pollutant loadings in 1999), Option 2.5 would also remove approximately 755,000 pounds/year of BOD₅, 1.06 million pounds/year of TSS, and 2.7 million pounds/year of ammonia (as nitrogen). However, because Option 2.5 includes the same technology as Option 2 with the addition of denitrification for Total Nitrogen removal, the reductions of BOD₅, TSS, and ammonia (as nitrogen) are the same for Option 2.5 and Option 2 (as revised in today's notice).

In balancing costs against the benefits of effluent reduction, EPA considers the volume and nature of expected discharges after application of BPT, the general environmental effects of pollutants, and the cost and economic impacts of the required level of pollution control. For the BPT cost-reasonableness (*i.e.*, BPT cost and removal comparison) calculation for this industry EPA chose to measure effluent reductions in terms of the sum of removals (in pounds) of BOD₅, Total Nitrogen, and Total Phosphorus so that it could capture the incremental changes between technology options (*e.g.*, Option 2 reduces BOD₅ but does not reduce Total Nitrogen (N), while Option 2.5 additionally reduces Total Nitrogen and Option 2.5+P additionally reduces Total Phosphorus (P)). EPA has made an effort to avoid "double-counting" pollutant reductions that would occur if, for example, EPA summed removals of COD and BOD. In past effluent limitations guidelines and standards, BPT cost and removal comparison has been as high as \$37/lb-removed in 1999 dollars. As presented in Section X, EPA estimates the BPT cost and removal comparison for Option 2.5 (incremental to the baseline) to be \$0.43/pound BOD₅, Total N, and Total P removed (1999\$). The incremental BPT cost and removal comparison for

moving from Option 2 to Option 2.5 is \$0.27 per additional pound Total N removed (1999\$) (BOD₅ and Total P would be unchanged from Option 2). Note that the only difference between these two options is the level of nitrogen removals. EPA solicits comment on the potential selection of both Option 2 and Option 2.5 for BPT for the final rule.

EPA is also considering a no further regulation option that would continue to rely on existing limitations and standards, along with any more stringent limitations required to attain and maintain water quality standards, including those derived from a wasteload allocation in a TMDL (total maximum daily load). EPA solicits comment on a no further regulation option for facilities in Subcategory A–D.

2. Subcategory K (Poultry Slaughterhouses)

This section describes the options EPA is considering for developing BPT limitations for non-small facilities in the proposed Subcategory K. As discussed in Section X.A, EPA is not presenting revised costs, pollutant reductions, and economic impacts in today's notice for small Subcategory K facilities; however, those results are presented in Section 21.1, DCNs 125803 and 126003 in the public record.

Unlike the meat subcategories discussed in Section IX.B.1, there are no existing effluent guidelines for facilities in the poultry slaughtering subcategory (Subcategory K). EPA proposed to establish the BPT level of control based on Option 3 for non-small facilities and Option 1 for small facilities in this subcategory. Option 1 consists of primary and secondary biological treatment with partial nitrification and disinfection while Option 3 includes primary and secondary biological treatment with complete nitrification, complete denitrification, and disinfection. As discussed previously in IX.A, EPA is now giving less consideration to Option 3. Based on additional review and evaluation of the data and comments, EPA is considering whether to base BPT limitations on Option 2, Option 2.5 or 2.5 + P for non-small facilities in this subcategory for the final rule. EPA is also considering a no-regulation option, in which facilities in Subcategory K would continue to be regulated based on facility-specific BPJ limitations established by the permitting authority, along with any more stringent water-quality based limitations that might be required to attain and maintain water-quality standards, including limitations based on a wasteload allocation in a TMDL.

EPA estimates that 111 of 118 non-small direct discharging facilities in this subcategory currently employ Option 2 technology or more advanced technology, while 45 employ Option 2.5 or more advanced technology, and 17 facilities employ Option 2.5 + P or more advanced technology. As noted above, many of the facilities employing these technology options do not currently achieve the target effluent concentrations that EPA is projecting and so would likely have to undertake additional upgrades, optimization, and process control measures.

EPA estimates that establishing Option 2.5 for BPT would reduce discharges of BOD₅, TSS, COD, Ammonia, and Total N by approximately pounds/year, 1.4 million pounds/year, 6.3 million pounds/year, 470,000 pounds/year, and 3.5 million pounds/year, respectively. Option 2 would remove the same amounts of all pollutants except Total N, which Option 2 is not designed to remove (*i.e.*, Option 2 removes 0 pounds/year of Total N). As discussed above, for the BPT cost and removal comparison calculation for this industry EPA chose to measure effluent reductions in terms of the sum of removals (in pounds) of BOD₅, Total Nitrogen, and Total Phosphorus in assessing effluent reduction benefits. As presented in Section X, EPA estimates the BPT cost and removal comparison for Option 2 (incremental to the baseline) to be \$12.89/pound BOD₅, Total N, and Total P removed (1999\$). The average BPT cost and removal comparison for Option 2.5 would be \$3.93/pound BOD₅, Total N, and Total P removed (1999\$). While the incremental BPT cost and removal comparison of Option 2.5 versus Option 2 would be \$2.28 per additional pound of Total N (1999\$; BOD₅ and Total P would be unchanged from Option 2).

EPA estimates that establishing Option 2.5 + P for BPT would result in the same reductions of BOD₅, TSS, COD, Ammonia, and Total N as Option 2.5 but would also reduce Total Phosphorus by 3.8 million pounds/year. As presented in Section X, EPA estimates the BPT cost and removal comparison for Option 2.5 + P (incremental to the baseline) to be \$5.70/pound BOD₅, Total N, and Total P removed (1999\$). The incremental cost and removal comparison from Option 2.5 to Option 2.5+P is \$7.61/pound Total P removed (1999\$) (Total N and BOD₅ would be the same as under Option 2.5). EPA solicits comment on the potential selection of Option 2, Option 2.5, and Option 2.5 + P for BPT for this subcategory for the final rule, and on a no-regulation option