

TABLE VI.B.6.—NUMBER OF NON-COMMERCIAL FACILITIES THAT HAVE COSTS EXCEEDING BUDGET THRESHOLDS  
[O&M sensitivity analysis]

Budget test	O&M cost assumption	Option				
		A	B	1	2	3
1 Percent .....	Minimum .....	39	61	49	61	199
	Mean .....	39	120	112	123	223
	Maximum .....	39	134	126	134	223
3 Percent .....	Minimum .....	27	42	38	42	83
	Mean .....	27	75	59	71	108
	Maximum .....	27	112	112	112	134

EPA also examined alternative technology options for removing drugs, using activated carbon. As part of sensitivity analysis, EPA also examined the economic impacts for Options A, B, 2, and 3 with and without activated carbon costs (DCN 20443), assuming earnings based on cash flow analysis. Activated carbon could be used to treat CAAP effluent for drugs. These options include BMPs, but not treatment for drugs and chemicals. By estimating the costs for activated carbon treatment, EPA analyzed the impacts of requiring treatment as well. When activated carbon costs are added (costs for drug and chemical BMPs were subtracted to avoid double-counting costs), direct employment losses are about four times higher, and company closure and financial health impacts are roughly double. About one in four companies would have difficulty raising the capital needed to meet the activated carbon costs (e.g., six to nine companies fail the credit test with the activated carbon costs).

#### C. Cost-effectiveness and Cost-reasonableness Analysis

EPA performed a revised nutrient cost-effectiveness (CE) and cost

reasonableness (CR) analysis based on revised estimates of costs, loadings and removals (see Development Document for details). We do not expect benchmarks or thresholds for assessing CE/CR results to differ from those used in the proposed rule (that is, \$4/lb for nitrogen, \$10/lb for phosphorus cost-effectiveness and \$0.73/lb for cost-reasonableness (see 68 FR 7249–7250 for discussion of benchmarks)). Option costs include costs for BMP components that address invasive species, drugs, and chemicals that have no effect on nutrients, BOD, or TSS. That is, cost-effectiveness and cost-reasonableness values are overstated.

#### 1. Nutrient Cost-effectiveness Results

The tables in this section provide the nutrient cost-effectiveness values for nitrogen and phosphorus. Table VI.C.1 presents the results for nitrogen by production system, commercial and non-commercial sector, and option. For commercial flow-through facilities, the average cost-effectiveness for nitrogen is \$24/lb for Option A and ranges from \$11/lb to \$14/lb for the other options. Incrementally, the effects of the different BMP requirements result in Options B, 1, and 2 having the same

removals but different costs. The incremental calculations are based on the option with the lowest of the three costs (e.g., Option 1) and ranges from \$6/lb to \$12/lb. Nutrient cost-effectiveness values are higher for non-commercial facilities. The average cost-effectiveness for nitrogen is \$1,096/lb for Option A, and cost-effectiveness ranges from \$30/lb to \$49/lb for the other options. Again, we base the incremental calculations on the option with the lowest of the three costs with the same removals and ranges from \$20/lb to \$23/lb.

For commercial recirculating facilities, the table shows no average and incremental cost-effectiveness value for nitrogen because no nitrogen is removed. For non-commercial recirculating facilities, no nitrogen removals are seen for Option A. For the remaining options, average cost effectiveness ranges from \$183/lb to \$518/lb, and incremental cost-effectiveness ranges from \$112/lb to \$232/lb.

TABLE VI.C.1.—NUTRIENT COST-EFFECTIVENESS: NITROGEN

Subcategory, sector, and option	Pre-tax annualized costs (\$2001)	Nitrogen removals (lb)	Cost-effectiveness (\$2001/ pound)	
			Average	Incremental
Commercial Flow-Through				
Option A .....	\$213,030	8,970	\$24	<sup>1</sup> \$24
Option 1 .....	344,350	30,998	11	6
Option 2 .....	429,441	30,998	14	NA
Option B .....	438,443	30,998	14	NA
Option 3 .....	920,663	79,960	12	12
Non-Commercial Flow-Through				
Option A .....	\$1,492,671	1,362	\$1,096	<sup>1</sup> \$1,096
Option 1 .....	2,692,963	60,203	45	20
Option B .....	2,968,001	60,203	49	NA
Option 2 .....	2,969,498	60,203	49	NA
Option 3 .....	5,799,459	194,534	30	23