TABLE 5.—TOTAL CARBAMATE PRODUCTION WASTE QUANTITIES AND TOTAL INCREMENTAL ANNUAL COST INCURRED BY EACH POST-REGULATORY WASTE MANAGEMENT CATEGORY

Post-regulatory waste management scenario	Total quantity of carbamate production waste affected (in metric tons)	Total annualized incremental cost incurred
MC 1	234,000	$25,600
MC 2	6,400	8,200
MC 3	1	700
MC 4	809,900	776,700
MC 5 and 6	2,700	200
MC 7	0	20
MC 8 and 9	240	68,100
MC 10	4,100	41,000
Total[a]	840,000	910,000

[a] Numbers may not add due to rounding.

Specific Analysis of K157 Wastewaters

EPA examined two scenarios for the post-regulatory management of K157 wastewaters that do not meet the concentration-based exemption. The first scenario assumed that K157 wastewaters would continue to be sent through NPDES-permitted discharges or to POTWs, but that (1) sludge would be managed as hazardous waste, and (2) surface impoundments would be closed and converted to tanks. The second scenario assumed that wastewaters would be treated by steam stripping before discharge into centralized wastewater treatment systems.

For the first K157 wastewater scenario, EPA reviewed the information collected as part of the RCRA section 3007 survey. The facility-specific information shows that only two facilities employ operational surface impoundments (as of 1990). EPA calculated the costs associated with the closure of the surface impoundments and conversion to tanks. The EIA technical background document contains details of these cost calculations. EPA estimated that the costs associated with the first scenario to be approximately $760,000 per year.

For the second K157 wastewater scenario, EPA explored the possibility of off-site steam stripping as well as constructing on-site steam stripping units. EPA calculated rough engineering cost estimates for the on-site systems, both for capital costs and annual operation and maintenance. For volumes generated by these facilities (approximately 400 tons), EPA estimated the total annualized cost of off-site steam stripping[6]. The total estimated annualized cost for scenario two is $6.4 million.

Because the K157 incremental annualized cost of scenario two is more than eight times that of scenario one, EPA assumed that industry would minimize its cost by adopting the lower-cost management[7]. The costs estimated for scenario one have been used in the total costs for K157 wastes reported below.

3. P and U List Wastes

EPA has obtained its estimate of the amount of P and U wastes generated annually by the carbamate producers from the 1990 RCRA Section 3007 Survey. The $10,000 cost associated with managing the 40 metric tons reported in the survey represents a lower-bound cost because it does not include wastes generated by pesticide formulators or distributors.

4. Potential Remedial Action Costs

In addition to carbamate process wastes, the carbamate hazardous waste listing could affect the management of soils, ground water, and other remedial materials. The Agency's ''contained in'' policy defines certain remediation wastes ''containing'' a listed hazardous waste as a RCRA hazardous waste (See *Chemical Waste Management* v. *EPA*, 869 F.2d 1526, D.C.C, 1989). Sites, where in newly identified hazardous wastes have been managed prior to the effective date of the new listings, may still have contaminant concentrations which exceed ''contained in'' levels. A person who actively manages such material could become a generator of RCRA hazardous waste. The likelihood of this imposing a significant additional burden is low since at least 22 of 24 carbamate production facilities are already permitted TSDFs. Releases from all solid waste management units at these TSDFs, including those that in the future would be found to contain a waste meeting the carbamate listing descriptions, are already covered by facility-wide corrective action under 40 CFR 264.101. These associated costs e.g., RCRA Facility Assessment have already been accounted for in the regulatory impact analysis of the corrective action rule.

One corrective action-related cost that should be accounted for is the possible clean up cost associated with the out-of-service surface impoundment that become solid waste management units following their replacement with tanks. In the worst-case, facilities generating K157 wastewaters will meet the concentration-based exemption and will abandon their surface impoundments following this listing. To calculate the corrective action costs, EPA has assumed clean closure in year one, with costs annualized over 20 years. To the clean closure costs, EPA has added the value of the abandoned land. Under these assumptions, annualized corrective action costs associated with this rule making total $472,000. If, however, the K157 wastewaters and all wastewaters derived from the treatment of K156 and comanaged with K157 wastes qualify for the concentration-based exemption, the corrective action costs are reduced to $12,000 annually.

5. Summary of Results

Table 6 presents a summary of estimated national incremental annualized compliance costs, by newly identified hazardous waste number, associated with this rule.

TABLE 6.—ANNUALIZED INCREMENTAL COMPLIANCE COST FOR THE LISTING OF CARBAMATE PRODUCTION WASTES LISTED BY CORRESPONDING RCRA CODES

RCRA waste code	Annual incremental compliance cost
K156	$14,000
K157	10,000–770,000
K158	37,000
K159	1,200
K160	2,100
K161	61,000
P & U	10,000
Total	140,000–900,000[a]

[a] Figures may not sum exactly because of rounding. Corrective action may add $12,000 to the lower bound costs and $472,000 to the upper bound costs.

X. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980 requires federal agencies to consider ''small entities'' throughout the regulatory process. Section 603 of the RFA requires an initial screening analysis to be performed to determine whether small entities will be affected by the regulation. If affected small entities are identified, regulatory alternatives must be considered which mitigate the potential impacts. Small entities as described in the Act are only those ''businesses, organizations and

[6] Recent vendor quotes of off-site steam-stripping showed a cost of $0.75 per gallon (approximately $200 per metric ton).

[7] EPA also considered facility specific comparisons between scenarios one and two. It should be noted that, under scenario one, given the worst possible case (conversion of three surface impoundments, one tank cover and sludge disposal) costs were still favorable to those that would be incurred by the same facility under scenario two.