

Office of Regulatory Management  
Economic Review Form

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-60-18 9VAC20-60-260 9VAC20-60-261 9VAC20-60-262 9VAC20-60-263 9VAC20-60-264 9VAC20-60-265 9VAC20-60-266 9VAC20-60-268 9VAC20-60-270 9VAC20-60-273 9VAC20-60-279
<b>VAC Chapter title(s)</b>	Applicability of incorporated references based on the dates on which they became effective Hazardous Waste Management System: General; Identification and Listing of Hazardous Waste; Standards Applicable to Generators of Hazardous Waste; Standards Applicable to Transporters of Hazardous Waste; Standards for Owners and Operators of Hazardous Waste; Treatment, Storage and Disposal Facilities; Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities; Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities; Land Disposal Restrictions; EPA Administered Permit Programs: the Hazardous Waste Permit Program; Standards for Universal Waste Management; Standards for the Management of Used Oil
<b>Action title</b>	<b>Virginia Hazardous Waste Management Regulations Annual Update 2022</b>
<b>Date this document prepared</b>	SEPTEMBER 7, 2022

### **Cost Benefit Analysis**

Table 1a must be completed for all actions. Tables 1b and 1c must be completed for actions (or portions thereof) where the agency is exercising discretion, including those where some of the changes are mandated by state or federal law or regulation. Tables 1b and 1c are not needed if **all** changes are mandated, and the agency is not exercising any discretion. In that case, enter a statement to that effect.

- (1) Direct Costs & Benefits: Identify all specific, direct economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (A direct impact is one that affects entities regulated by the agency and which directly results from the regulatory change itself, without any intervening steps or effects. For example, the direct impact of a regulatory fee change is the change in costs for these regulated entities.) When describing a particular economic impact, specify which new requirement or change in requirement creates the anticipated economic impact. Keep in mind that this is the proposed change versus the status quo. One bullet has been provided, add additional bullets as needed.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
  - (c) Enter the present value of the direct costs based on the worksheet.
  - (d) Enter the present value of the direct benefits based on the worksheet.
- (3) Benefits-Costs Ratio: Calculate d divided by c OR enter it from the worksheet.
- (4) Net Benefit: Calculate d minus c OR enter it from the worksheet.
- (5) Indirect Costs & Benefits: Identify all specific, indirect economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (An indirect impact is one that results from responses to the regulatory change, but which are not directly required by the regulation. Indirect impacts of a regulatory fee change on regulated entities could include a change in the prices they charge, changes in their operating procedures or employment levels, or decisions to enter or exit the regulated profession or market. Indirect impacts also include responses by other entities that have close economic ties to the regulated entities, such as suppliers or partners.) If there are no indirect costs or benefits, include a specific statement to that effect.
- (6) Information Sources: Describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (7) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

### **Introduction:**

Annual Regulatory Update 2022 of the Virginia Hazardous Waste Management Regulations adds by reference the [EPA Rule, "Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations."](#) The Aerosol Can Universal Waste proposed rule regulatory update may potentially affect both large quantity generators (LQGs) and small quantity generators (SQGs) that currently generate, transport, treat, recycle, or dispose of hazardous waste aerosol cans. The proposed rule is unlikely to affect Very Small Quantity Generators (VSQGs) as VSQGs are already operating under streamlined requirements and are likely to continue operating as VSQGs in the post-rule environment. This Economic Impact Form estimates the cost savings of the proposed regulatory update as the difference between affected

facilities' baseline and waste management cost estimates if the rule was in place versus the current costs without the rule in place. This approach, taken by EPA in the document used to create this form ([EPA Document "Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule", February 2018](#)), was designed specifically to estimate the cost impacts associated with changes in generator status that may occur as a result of the rule. Aerosol cans managed as universal waste do not count toward a facility's generator status. As a result, a number of facilities may drop in generator status (e.g., from LQG to SQG, or from SQG to VSQG) under the proposed rule. This change in status may lead to cost savings for affected facilities.

**EPA performed a national cost benefit analysis when this rule was proposed by EPA in 2017. DEQ is proposing to adopt the rule by reference. Therefore, we are using the EPA cost benefit analysis to complete this Economic Impact Form using Virginia hazardous waste generator numbers.**

For both the baseline and the post-regulation adoption case, this Economic impact form estimates three broad categories of RCRA Subtitle C costs:

- 1. One-time costs:** For newly regulated hazardous waste generators, these costs include: (1) notifying EPA of their hazardous waste activity (LQGs and SQGs only), (2) developing a closure plan (LQGs only), (3) creating a contingency plan (LQGs only), and (4) rule familiarization. Under the proposed rule, new facilities that enter the universe may avoid or reduce these costs if their generator status changes relative to baseline, but universal waste handlers must still notify EPA of their waste generation activity (large quantity handlers or LQHs only) and familiarize themselves with the rule.
- 2. Fixed annual costs:** Fixed annual costs are incurred for activities that remain relatively constant from year to year for an LQG or SQG regardless of the quantity of waste generated. These include reviewing the relevant regulations, RCRA Subtitle C compliance recordkeeping, personnel safety training, manifest training, hazardous waste labelling, and inspections of hazardous waste storage areas. This category also includes costs that are incurred every other year (e.g. biennial reporting costs) or every third year (manifest training) that have been annualized to reflect a consistent value. For universal waste handlers (that are not LQGs or SQGs under RCRA), fixed annual costs are more limited and include only annual review of the regulations and personnel safety training.
- 3. Variable Costs:** Variable costs change with the quantity of hazardous waste generated, quantity of hazardous waste shipped, and the number of hazardous waste shipments made by each facility. Under RCRA Subtitle C, the three categories of variable costs are (1) the cost of properly filling out a manifest and land disposal restriction notification for each shipment, (2) the cost of shipping hazardous waste using a certified hazardous waste transporter, and (3) the cost of disposal for hazardous waste. For aerosol cans managed as universal waste, however, variable costs include basic recordkeeping for waste shipments (LQHs only) and universal waste transportation costs, both of which are less costly than the corresponding costs for hazardous waste. Additionally, disposal costs are the same for hazardous wastes and universal wastes.

**Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)**

<p>(1) Direct Costs &amp; Benefits</p>	<p><b>The incorporation by reference of Title 40 of the Code of Federal Regulations includes the provisions of <a href="#">EPA Rule, “Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations.” (84 FR 67202 12/9/2019)</a>. This rule allows generators to manage waste under the Universal Waste Rule as specified under the Code of Federal Regulations, specifically 40 CFR 273, as an alternative to managing as a hazardous waste. Aerosol cans managed as universal waste are not subject to the full hazardous waste requirements, and are exempt from 40 CFR parts 260 through 268 if managed to the conditions of this exemption. Nationally, adding aerosol cans to the Universal Waste Rule simplifies handling and disposal for generators, while ensuring proper management of aerosol cans and transportation to appropriate destination facilities. This rule is less stringent than existing federal rules. Therefore, authorized state adoption is optional.</b></p> <p>Direct Costs:</p> <ul style="list-style-type: none"> <li>• <b>None. The change in regulatory status of aerosol cans does not require any change by existing hazardous waste generators that will incur any new direct costs by these facilities. Hazardous waste generators are anticipated to benefit by saving money through this regulatory update. Generators are eagerly anticipating Virginia’s adoption of the rule.</b></li> </ul> <p>Direct Benefits:</p> <ul style="list-style-type: none"> <li>• <b>Possible reduction in hazardous waste management costs and management/paperwork requirements by hazardous waste generators as a result of smaller generator status and longer waste accumulation timeframe/reduced waste requirements for aerosol cans and/or recycling aerosol cans in lieu of disposal;</b></li> <li>• <b>Adoption of the changes allows Virginia to be consistent with the federal regulations and with other states who adopt federal regulations, and provides more flexibility to the regulatory community with regard to management of these wastes.</b></li> <li>• <b>Promoting recycling of aerosol cans should divert many aerosol cans that are still being disposed (incorrectly) by businesses in landfills as regular solid waste.</b></li> </ul> <p>EPA has calculated that for any generators that are able to drop in generator status as a result of no longer having to count aerosol cans as part of their hazardous waste generation, there will be a cost savings. Based on the information in the following tables, a facility that drops from a Large Quantity Generator to a Small Quantity Generator will have fixed annual cost savings of \$3400/year. A facility that drops from a Large Quantity Generator to a Very Small Quantity Generator will save approximately \$6300 to \$7220 in fixed</p>
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annual costs each year. A facility that starts as a Small Quantity Generator and goes to a Very Small Quantity Generator as a result of the new regulation can expect to see a reduction in fixed costs of \$2900 to \$3820/year.

**Table 1A-1 EPA CALCULATED PERCENTAGES OF FACILITIES GENERATING AEROSOL CANS IN MINNESOTA, WASHINGTON AND MASSACHUSETTS (STATES WITH BIENNIAL REPORTING BY ALL LEVELS OF GENERATOR)**

STATUS	GENERATOR COUNT	MINNESOTA PERCENT	GENERATOR COUNT	WASHINGTON PERCENT	GENERATOR COUNT	MASSACHUSETTS PERCENT	TOTAL	
							COUNT	PERCENT
LQG	530	15.3%	323	19.9%	371	23.6%	1,224	18.4%
SQG	691	20.0%	1,039	64.1%	714	45.5%	2,444	36.8%
VSQG	2,240	64.7%	258	15.9%	484	30.8%	2,982	44.8%

**TABLE 1A-2 VIRGINIA ESTIMATED POTENTIALLY IMPACTED UNIVERSE (GENERATORS THAT GENERATE SPENT AEROSOL CANS)**

GENERATOR STATUS	TOTAL NUMBER OF GENERATORS IN VIRGINIA UNIVERSE	ESTIMATED TOTAL NUMBER OF AEROSOL CAN GENERATING FACILITIES IN VIRGINIA USING % FROM TABLE 1A-1	ANNUAL ESTIMATED AEROSOL CAN GENERATION PER GENERATOR*	ANNUAL ESTIMATED AEROSOL CAN GENERATION IN CURRENT UNIVERSE (TONS)
LQGs	325	18.4% (325) = 60	1.765 TONS/LQG	106
SQGs	2,071	36.8% (2,071) = 762	0.468 TONS/SQG	356
TOTAL	2,396	822	2.23 TONS/GEN	462

\*Generation rate sourced from EPA's Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule, Feb 2018, Table ES-1

**TABLE 1A-3 BASELINE GENERATOR UNIT COSTS (2017\$)**

COST FEATURE	UNIT COSTS			
	LQG		SQG	
	HIGH ESTIMATE	LOW ESTIMATE	HIGH ESTIMATE	LOW ESTIMATE
<b>One-Time Costs (New Facilities Only)</b>				
Notification of Hazardous Waste Activity	\$62	\$62	\$62	\$62
Rule Familiarization	\$1,739	\$424	\$1,739	\$155
Closure (create closure plan)	\$8,509	\$8,509	\$0	\$0
Contingency Planning	\$731	\$731	\$0	\$0
<b>TOTALS</b>	<b>\$11,041</b>	<b>\$9,726</b>	<b>\$1,801</b>	<b>\$217</b>
<b>Fixed Annual Costs</b>				
Annual Review of Regulations	\$93	\$93	\$61	\$61
Subtitle C Recordkeeping	\$41	\$41	\$41	\$41
Biennial Reporting (annualized cost)*	\$463	\$463	\$0	\$0
Personnel Safety Training (annualized cost)	\$4,192	\$4,192	\$1,341	\$1,341
Manifest Training	\$296	\$296	\$296	\$296
Labeling	\$74	\$74	\$25	\$25
Inspections	\$2,560	\$2,560	\$2,560	\$2,560
<b>TOTALS</b>	<b>\$7,719</b>	<b>\$7,719</b>	<b>\$4,324</b>	<b>\$4,324</b>

Variable Costs				
Manifesting and Land Disposal Restriction Notification per shipment	\$58	\$58	\$56	\$56
Hazardous Waste Transportation (per shipment) 6 & 4 tons/truck and 200 miles/shipment for LQG and SQG	\$215 + \$0.216/ton-mile			
Hazardous Waste Disposal (Incineration, 12 tons-SQG; 16 tons-LQG)	\$4,573/ton			
Source: EPA's Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule, Feb 2018, Table 7: Baseline Unit Costs *The Biennial Reporting cost assumes that each facility has 20 waste streams, based on the average number of waste streams observed in the BR for baseline LQGs.				

**TABLE 1A-4 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR UNDER EXISTING REQUIREMENTS**

COST CATEGORY	LQG COSTS		SQG COSTS	
	HIGH	LOW	HIGH	LOW
One-Time Costs	\$11,041	\$9,726	\$1,801	\$217
Annual Costs	\$7,719	\$7,719	\$4,324	\$4,324
Variable Costs	\$74,433	\$74,432	\$55,504	\$55,504
<b>Total Costs</b>	<b>\$93,193</b>	<b>\$91,914</b>	<b>\$61,629</b>	<b>\$60,045</b>

Since aerosol cans are currently managed as hazardous waste, aerosol cans are included in this total  
LQG Variable Costs assumes 4 shipments per year and 4 tons per shipment  
SQG Variable Costs assumes 2 shipments per year and 6 tons per shipment

**TABLE 1A-5-POST-RULE GENERATOR UNIT COSTS**

REQUIRED COSTS	UNIT COSTS			
	LQHUW		SQHUW	
	HIGH ESTIMATE	LOW ESTIMATE	HIGH ESTIMATE	LOW ESTIMATE
<b>One-Time Costs</b>				
Notification of Hazardous Waste Activity	\$62	\$62	\$0	\$0
Rule Familiarization	\$268	\$268	\$188	\$188
<b>TOTALS</b>	<b>\$330</b>	<b>\$330</b>	<b>\$188</b>	<b>\$188</b>
<b>Annual Costs</b>				
Annual Review of Regulations	\$93	\$93	\$61	\$61
Personnel Safety Training (annualized cost)	\$1,326	\$1,326	\$652	\$440
<b>TOTALS</b>	<b>\$1,419</b>	<b>\$1,419</b>	<b>\$713</b>	<b>\$501</b>
<b>Variable Costs</b>				
Shipping Recordkeeping (per shipment)	\$4	\$4	\$0	\$0
Universal Waste Transportation (per shipment)	\$143 + \$0.162/ton-mile			
Hazardous Waste Disposal (Incineration)	\$4,573.11/ton			
Universal Waste Disposal (Incineration)	\$4,573.11/ton			
Universal Waste Recycling	\$0/ton			
Source: EPA's Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule, Feb 2018, Table 10: Post-Rule Unit Costs				

**TABLE 1A-6 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR TO MANAGE AEROSOL CANS AS UNIVERSAL WASTE**

COST CATEGORY	LQG DISPOSAL HIGH	LQG DISPOSAL LOW	LQG RECYCLE HIGH	SQG DISPOSAL HIGH	SQG DISPOSAL LOW	SQG RECYCLE HIGH
One Time Cost	\$330	\$330	\$330	\$188	\$188	\$188
Annual Cost	\$1,419	\$1,419	\$1,419	\$713	\$501	\$713
Variable Cost	\$8,253	\$8,253	\$204	\$2,308	\$2,308	\$158
<b>TOTAL COSTS FOR AEROSOL CANS AS UW</b>	<b>\$10,002</b>	<b>\$10,002</b>	<b>1,953</b>	<b>\$3,209</b>	<b>\$2,997</b>	<b>\$1,059</b>

Variable Costs assume 1 shipment/year of Aerosol Cans as Universal Wastes, travel distance of 200 miles  
From Table 1A-2, an LQG generates 1.76 tons & an SQG generates 0.47 tons of aerosol cans

**TABLE 1A-7 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR AFTER THE REGULATORY UPDATE (HIGH)**

GENERATOR STATUS	TOTAL WASTE GENERATED	AEROSOL CANS GENERATED	HW GENERATED	COST HW DISPOSAL	COST UW WITH RECYCLING (TABLE 1A-6)	TOTAL COST
LQG	16 TONS/YEAR MINIMUM	1.76 TONS	14.24 TONS	\$85,144	\$1,953	\$87,097
SQG	12 TONS/YEAR MAXIMUM	0.47 TONS	11.53 TONS	\$61,629	\$1,059	\$60,539

**TABLE 1A-8 COMPARISON OF COSTS – MANAGING ALL AS HW VERSUS MANAGING HW AS HW AND RECYCLING UNIVERSAL WASTE (2017 DOLLARS)**

GENERATOR STATUS	TOTAL COST TO MANAGE AS HW (TABLE 1A-4)	TOTAL COST TO MANAGE HW AS HW AND RECYCLE UW (TABLE 1A-7)	TOTAL SAVINGS PER GENERATOR TO MANAGE AEROSOL CANS AS UW ANNUALLY	TOTAL SQG AND LQG GENERATING AEROSOL CANS IN VIRGINIA (TABLE 1A-2)	TOTAL ESTIMATED SAVINGS ACROSS LQG AND SQG UNIVERSES ANNUALLY IN VA
LQG	\$93,193	\$87,097	\$6,095	762	\$4,644,737
SQG	\$61,629	\$60,539	\$1,090	60	\$65,405

Total savings across existing LQG and SQG universe is \$4.71 million.

(2) Quantitative Factors	Estimated Dollar Amount	Present Value
Direct Costs	(a) None. \$0	(c) None. \$0
Direct Benefits	(b) \$1,090/year for SQG \$6,095/year for LQG Annual total from table 1A-8 above for LQG and SQG generators in VA- \$4.71M	(d) 2018: 1.018 – \$4.79M 2019: 1.023 – \$4.90M 2020: 1.017 – \$4.99M 2021: 1.012 – \$5.05M 2022: 1.046 – \$5.28M
(3) Benefits-Costs Ratio	None.	(4) Net Benefit \$5.28 million dollars for LQG and SQG
		None.

		generators of aerosol cans in VA annually	
(5) Indirect Costs & Benefits	<p><b>There are no indirect costs. The primary indirect benefit will be that generators of spent aerosol cans that were formerly required to manage these cans as hazardous waste now no longer have to count these wastes toward their hazardous waste total which can lower their generator status and decrease their requirements; generators can accumulate these wastes longer on site (up to one year) and manage them as universal wastes which has less stringent and potentially less expensive regulatory requirements.</b></p>		
(6) Information Sources	<p><a href="#">EPA Document "Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule", February 2018</a></p>		
(7) Optional	<p><b>The proposed regulatory change would not impose any new requirements on regulated entities; rather, it allows a generator to manage aerosol cans under a different, less expensive and less burdensome set of requirements as a Universal Waste rather than a hazardous waste.</b></p> <p><b>For both the baseline and the policy case, the EPA document used estimates in three broad categories of RCRA Subtitle C costs:</b></p> <ol style="list-style-type: none"> <li><b>1. <u>One-time costs:</u></b> For facilities becoming new hazardous waste generators, these costs include: (1) notifying EPA of their hazardous waste activity (LQGs and SQGs only), (2) developing a closure plan (LQGs only), (3) creating a contingency plan (LQGs only), and (4) rule familiarization. Under the proposed rule, new facilities that enter the universe may avoid or reduce these costs if their generator status changes relative to baseline, but universal waste handlers must still notify EPA of their waste generation activity (large quantity handlers only) and familiarize themselves with the rule.</li> <li><b>2. <u>Fixed annual costs:</u></b> Fixed annual costs are incurred for activities that remain relatively constant from year to year for an LQG or SQG regardless of the quantity of waste generated. These include reviewing the relevant regulations, RCRA Subtitle C compliance recordkeeping, personnel safety training, manifest training, hazardous waste labelling, and inspections of hazardous waste storage areas. This category also includes costs that are incurred every other year (e.g. biennial reporting costs) or every third year (manifest training) that have been annualized to reflect a consistent value. For universal waste handlers (that are not LQGs or SQGs under RCRA), fixed annual costs are more limited and include only annual review of the regulations and personnel safety training.</li> <li><b>3. <u>Variable Costs:</u></b> Variable costs change with the quantity of hazardous waste generated, quantity of hazardous waste shipped, and the number of hazardous waste shipments made by each facility. Under RCRA Subtitle C,</li> </ol>		



	<p>the three categories of variable costs are (1) the cost of properly filling out a manifest and land disposal restriction notification for each shipment, (2) the cost of shipping hazardous waste using a certified hazardous waste transporter, and (3) the cost of disposal for hazardous waste. For aerosol cans managed as universal waste, however, variable costs include basic recordkeeping for waste shipments (LQHs only) and universal waste transportation costs, both of which are less costly than the corresponding costs for hazardous waste. Additionally, disposal costs are the same for hazardous wastes and universal wastes.</p>
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**Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)**

Currently, hazardous waste generators are required to count aerosol cans toward their hazardous waste generation total, and to manage these aerosol cans as hazardous waste. The higher the generator’s hazardous waste total, the more stringent and expensive the requirements are for the generator. Also, hazardous waste generators currently have a hazardous waste accumulation time limit which can result in smaller, more frequent shipments of hazardous waste to a treatment, storage or disposal facility, transported by a hazardous waste transporter. Smaller, more frequent shipments by a HW generator can cost a generator more than less frequent shipments.

Agency Note: This is a new regulation that allows an existing hazardous waste stream to be managed under an existing lesser set of requirements that will to reduce the regulatory burden for the regulated community. The costs provided below indicate the approximate costs to facilities of continued management of aerosol cans as hazardous wastes, and continued compliance with hazardous waste requirements under a generator’s current hazardous waste generator status.

<p>(1) Direct Costs &amp; Benefits</p>	<p>See <a href="#">Baseline Costs</a> in Table 1A on page 5.</p> <ul style="list-style-type: none"> <li>• Direct Costs: Notification of HW Activity</li> <li>• Direct Costs: Rule Familiarization</li> <li>• Direct Costs: Closure (Create Closure Plans)</li> <li>• Direct Costs: Contingency Planning</li> <li>• Direct Costs: Annual Review of Regulations</li> <li>• Direct Costs: Subtitle C Recordkeeping</li> <li>• Direct Costs: Biennial Report Annualized Cost</li> <li>• Direct Costs: Personnel Safety training (annualized cost)</li> <li>• Direct Costs: Manifest Training</li> <li>• Direct Costs: Labeling</li> <li>• Direct Costs: Inspections</li> <li>• Direct Costs: Manifesting and Land Disposal Restriction Notification (per shipment)</li> <li>• Direct Costs: Hazardous Waste Transportation (per shipment)</li> </ul>
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<ul style="list-style-type: none"> <li>Direct Costs: Hazardous Waste Disposal (incineration)</li> </ul> <p>Direct Benefits – Compliance with the Virginia Hazardous Waste Management Regulations; Avoidance of penalties for non-compliance</p> <p><b>TABLE 1A-4 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR UNDER EXISTING REQUIREMENTS</b></p> <table border="1"> <thead> <tr> <th rowspan="2">COST CATEGORY</th> <th colspan="2">LQG Costs</th> <th colspan="2">SQG Costs</th> </tr> <tr> <th>HIGH</th> <th>LOW</th> <th>HIGH</th> <th>LOW</th> </tr> </thead> <tbody> <tr> <td>One-Time Costs</td> <td>\$11,041</td> <td>\$9,726</td> <td>\$1,801</td> <td>\$217</td> </tr> <tr> <td>Annual Costs</td> <td>\$7,719</td> <td>\$7,719</td> <td>\$4,324</td> <td>\$4,324</td> </tr> <tr> <td>Variable Costs</td> <td>\$74,433</td> <td>\$74,432</td> <td>\$55,504</td> <td>\$55,504</td> </tr> <tr> <td><b>Total Costs</b></td> <td><b>\$93,193</b></td> <td><b>\$91,914</b></td> <td><b>\$61,629</b></td> <td><b>\$60,045</b></td> </tr> </tbody> </table> <p>Since aerosol cans are currently managed as hazardous waste, aerosol cans are included in this total LQG Variable Costs assumes 4 shipments per year and 4 tons per shipment SQG Variable Costs assumes 2 shipments per year and 6 tons per shipment</p>		COST CATEGORY	LQG Costs		SQG Costs		HIGH	LOW	HIGH	LOW	One-Time Costs	\$11,041	\$9,726	\$1,801	\$217	Annual Costs	\$7,719	\$7,719	\$4,324	\$4,324	Variable Costs	\$74,433	\$74,432	\$55,504	\$55,504	<b>Total Costs</b>	<b>\$93,193</b>	<b>\$91,914</b>	<b>\$61,629</b>	<b>\$60,045</b>
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(2) Quantitative Factors	Estimated Dollar Amount	Present Value																												
Direct Costs	(a) \$52.55M [LQGs (\$93,193 x 60 = \$5.6M) + SQGs (\$61,629 x 762 = \$47M) Total disposal costs for all generators who generate aerosol cans to manage all HW under current regulations	(c) 2018: 1.018 – \$53.5M 2019: 1.023 – \$54.7M 2020: 1.017 – \$55.7M 2021: 1.012 – \$56.3M 2022: 1.046 – \$58.9M																												
Direct Benefits	(b) Hazardous Waste Compliance – dollar value is in no penalties	(d) N/A																												
(3) Benefits-Costs Ratio	0	(4) Net Benefit																												
(5) Indirect Costs & Benefits	No benefit in complying with the existing HW regulations over complying with the regulations if the update is adopted.																													
(6) Information Sources	<a href="#">EPA Document “Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule”, February 2018</a>																													
(7) Optional	None																													

**Table 1c: Costs and Benefits under an Alternative Approach – Not evaluated**

DEQ can: 1) Retain existing regulatory language that requires generators of spent aerosol cans to comply with full hazardous waste requirements; 2) Adopt EPA’s rule to increase the recycling of aerosol cans by allowing management of these wastes as universal wastes; or 3) Propose to adopt the Aerosol Cans as Universal waste rule with some additional changes to the waste regulations that result in more stringent management of spent aerosol cans. Option 2, to adopt the Regulatory Update as written, results in fewer requirements and lower costs for generators of spent aerosol cans and possible savings in the management of these wastes. Option 3 is not being evaluated under the current regulatory update.

**Statement:** DEQ will either retain the current language as written which requires that generators continue to manage aerosol cans as hazardous waste, or will adopt EPA’s Aerosol Cans as Universal Waste rule as incorporated into EPA’s regulations at 40 CFR Parts 260 – 279 in its totality. A third scenario has not been proposed and is not being proposed for adoption by DEQ.

**Impact on Local Partners**

- (1) Describe the direct costs and benefits (as defined on page 1) for local partners in terms of real monetary costs and FTEs. Local partners include local or tribal governments, school divisions, or other local or regional authorities, boards, or commissions. If local partners are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
- (3) Indirect Costs & Benefits: Describe any indirect benefits and costs (as defined on page 1) for local partners that are associated with all significant changes. If there are no indirect costs or benefits, include a specific statement to that effect.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (5) Assistance: Identify the amount and source of assistance provided for compliance in both funding and training or other technical implementation assistance.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 2: Impact on Local Partners**

(1) Direct Costs & Benefits	Direct Costs: There are no <u>new</u> costs to local partners associated with the proposed regulatory changes.
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	<p>Direct Benefits: The regulated community, including local partners who are hazardous waste generators, will benefit from the regulatory changes. The regulatory changes are written to encourage recycling of spent aerosol cans to reduce the number of cans being thrown away in lieu of being properly managed. Currently, aerosol cans must be managed as hazardous wastes under the full set of hazardous waste requirements including waste status determination, waste counting to determine generator status, containerization, labeling, accumulation time, transportation by a hazardous waste transporter and management at a permitted hazardous waste treatment, storage or disposal facility. Under the proposed regulatory update, generators would:</p> <ul style="list-style-type: none"> <li>• Be able to ship universal wastes without a RCRA Subtitle C manifest and without using RCRA-regulated hazardous waste transporters.</li> <li>• Have the potential for lower generator status which could remove the necessity to file biennial reports, prepare contingency plans, and comply with Land Disposal Restriction notifications.</li> <li>• Allow for simpler training of employees.</li> <li>• Increase the time over which generators can accumulate aerosol cans which should result in fewer shipments of wastes and associated reduced costs.</li> </ul> <p>Impact on local partners' direct costs and indirect costs can be found in Tables 1A and 1B.</p>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None. \$0
Direct Benefits	(b) None. \$0
(3) Indirect Costs & Benefits	There are no identified indirect costs.
(4) Information Sources	<a href="#">EPA Document "Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule", February 2018</a>
(5) Assistance	None.

(6) Optional	none
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**Economic Impacts on Families**

- (1) Describe the direct costs and benefits (as defined on page 1) to a typical family of three (average family size in Virginia according to the U. S. Census) arising from any proposed regulatory changes that would affect the costs of food, energy, housing, transportation, healthcare, and education. If families are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe any indirect costs and benefits (as defined on page 1) to a typical family of three that are most likely to result from the proposed changes.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (5) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 3: Impact on Families**

(1) Direct Costs & Benefits	<p>Direct Costs: There are no costs to families associated with these regulatory changes. Changes impact generators of hazardous waste, and households are exempt from having to manage their wastes as hazardous wastes.</p> <p>Direct Benefits: Under current RCRA regulations, aerosol cans are categorized as hazardous waste and must be managed by a permitted RCRA hazardous waste treatment, storage, and disposal facility (TSDF). Because the contents and/or propellant within aerosol cans may be flammable, these cans may adversely impact human health and the environment if not properly disposed. In the absence of government intervention, facilities that generate aerosol cans (“generators”) would likely send them to municipal solid waste landfills (MSWLFs), which generally are less protective of human health and the environment than disposal at TSDFs.</p> <p>While the RCRA Subtitle C requirements, when followed, reduce the risks associated with aerosol cans, facilities that generate aerosol cans do not</p>
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	always manage these wastes in compliance with RCRA regulations. Many generators may not realize that aerosol cans are hazardous or may be unaware of the proper method of disposing of these wastes. The proposed designation of aerosol cans as Universal Waste (UW) will address this issue by simplifying the process of managing aerosol cans as hazardous waste. The UW designation will reduce the regulatory burden and cost of properly disposing of aerosol cans, creating an incentive for generators to dispose of them appropriately.
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None. \$0
Direct Benefits	(b) None. \$0
(3) Indirect Costs & Benefits	There are no indirect costs to families.
(4) Information Sources	<a href="#">EPA Document “Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule”, February 2018</a>
(5) Optional	None

**Impacts on Small Businesses**

- (1) Describe the direct costs and benefits (as defined on page 1) for small businesses. For purposes of this analysis, “small business” means the same as that term is defined in § 2.2-4007.1. If small businesses are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe the indirect benefits and costs (as defined on page 1) for small businesses that are most likely to result from the proposed changes.
- (4) Alternatives: Add a qualitative discussion of any equally effective alternatives that would make the regulatory burden on small business more equitable compared to other affected business sectors, and how those alternatives were identified.

- (5) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 4: Impact on Small Businesses**

(1) Direct Costs & Benefits	<p>Direct Costs: None.</p> <p>Direct Benefits: The regulated community will benefit from the regulatory changes. Small businesses may be a positively impacted group as a result of the proposed regulatory update, assuming that some small businesses are small quantity generators of hazardous waste.</p> <p>These regulatory changes are being made to conform to the requirements of federal regulations. While the aerosol can regulatory update is less stringent than the existing requirements to manage aerosol cans as hazardous waste, the proposed change to allow the generators to manage spent aerosol cans as universal waste will have a positive impact on small businesses in that small businesses will no longer have to count spent aerosol can toward their hazardous waste generation rate, can accumulate these wastes longer on site than previously allowed, have fewer on-site requirements if their generator status drops down a level, and will not have to use a hazardous waste manifest or hazardous waste transporter to ship these wastes off site.</p>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None. \$0
Direct Benefits	(b) See benefits calculated in Table 1A under SQG headings.
(3) Indirect Costs & Benefits	There are no indirect costs.
(4) Alternatives	None.
(5) Information Sources	<a href="#">EPA Document “Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule”, February 2018</a>

(6) Optional	None
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**Changes to Number of Regulatory Requirements**

*For each individual VAC Chapter amended, repealed, or promulgated by this regulatory action, list (a) the initial requirement count, (b) the count of requirements that this regulatory package is adding, (c) the count of requirements that this regulatory package is reducing, (d) the net change in the number of requirements. This count should be based upon the text as written when this stage was presented for executive branch review. Five rows have been provided, add or delete rows as needed.*

**Table 5: Total Number of Requirements**

This regulatory amendment does not place any additional regulatory requirements on the regulated community; rather, it offers an alternative, less burdensome management option for spent aerosol cans that are currently required to be managed as hazardous waste. The Universal Waste Regulations already exist in the regulations; this regulatory update simply adds another waste to the list of wastes that can be managed as Universal Waste rather than hazardous waste. Sections 2.2-4006 A 4 (c) of the Code of Virginia allow the Board to adopt this regulatory amendment to 9VAC20-60 as a final exempt action as the changes are necessary to conform to changes in the federal regulations.