

**Environmental Assessment for a Marketing Order for One
New Waterpipe Tobacco Product
By Fumari, Inc.**

**Prepared by Center for Tobacco Products
U.S. Food and Drug Administration**

July 27, 2022

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1. Applicant and Manufacturer Information

Applicant Name:	Fumari, Inc.
Applicant Address:	675 Gateway Center Drive, Suite A San Diego, CA 92102
Manufacturer Name:	Fumari, Inc.
Product Manufacturing Location:	675 Gateway Center Drive, Suite A San Diego, CA 92102

2. Product Information

New Product (STN), New Product's Name, and Original Product's Name

New Product STN	New Product Name	Original Product Name
EX0002340	Fumari Watermelon and Mint Hookah Tobacco – 1 kilo	Fumari Watermelon Hookah Tobacco – 1 kilo

Product Identification

Product Category:	Waterpipe Tobacco
Product Subcategory:	Waterpipe Tobacco Filler
Product Quantity per Retail Unit:	1 kg per Pouch, 6 pouches per box
Product Package:	The product is packed in a polyethylene terephthalate and polyethylene pouch with an outer cardboard box

3. The Need for the Proposed Action

The proposed action, requested by the applicant, is for the Food and Drug Administration (FDA) to issue an exemption from substantial equivalence (SE) reporting for a marketing order under section 905(j)(3) of the Federal Food, Drug, and Cosmetic Act (FD&C Act) for a waterpipe tobacco filler product. A tobacco product that is modified by adding or deleting a tobacco additive, or increasing or decreasing the quantity of an existing tobacco additive, may be considered for exemption from demonstrating substantial equivalence if (1) the product is a modification of another tobacco product and the modification is minor, (2) the modifications are to a tobacco product that may be legally marketed under the FD&C Act, (3) an SE Report is not necessary to ensure that permitting the tobacco product to be marketed would be appropriate for the protection of public health, (4) the modified tobacco product is marketed by the same organization as the original product, and (5) an exemption is otherwise appropriate.

The applicant wishes to introduce the new product into interstate commerce for commercial distribution in the United States. The applicant must obtain written notification that FDA has granted the product an exemption from demonstrating substantial equivalence under section 905(j)(3) before submitting an abbreviated report. Ninety days after FDA receipt of the abbreviated report, the applicant may introduce or deliver for introduction into interstate commerce for commercial distribution the new product for which the applicant has obtained an exemption from demonstrating substantial equivalence.

The new product differs from the original product by a decrease in the quantity of an existing flavoring additive and the addition of a new flavoring additive (Confidential Appendix 1).

4. Alternatives to the Proposed Action

The no-action alternative is FDA does not issue a marketing order for the new product in the United States.

5. Potential Environmental Impacts of the Proposed Action and Alternatives - Manufacturing the New Product

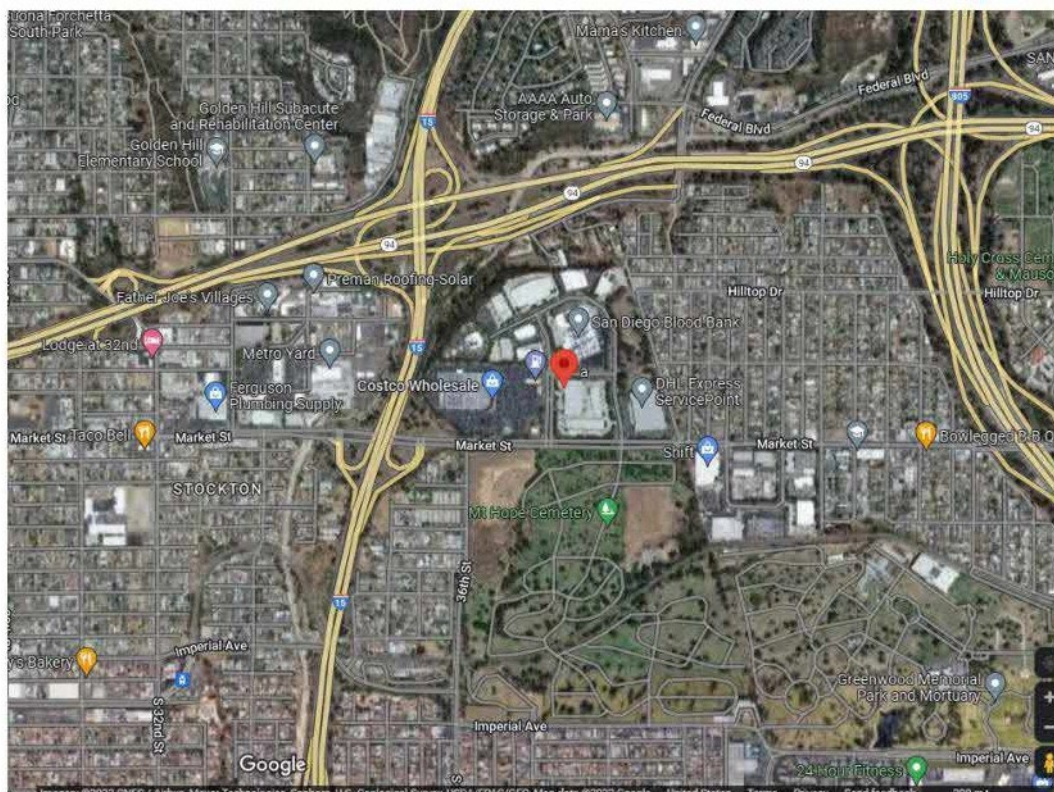
The Agency considered potential impacts to resources in the environment that may be affected by manufacturing the new product and found no significant impacts based on the Agency-gathered information and the following applicant-submitted information:

- No facility expansion is expected due to manufacturing the new product.
- No new or additional environmental controls are needed due to manufacturing the new product.
- The new product will compete with similar waterpipe products already on the market.
- Projected market volumes for the new and original product (Confidential Appendix 2).

5.1 Affected Environment

The affected environment includes human and natural environments surrounding the facility. The new product will be manufactured at the address listed in section 1 of this document (Figure 1).

Figure 1. Location of the Manufacturing Facility ¹



The manufacturing facility is located in a mixed-use residential, industrial, and commercial area just south of the SR 20, east of the San Diego Bay, and north of National City, CA. Fumari, Inc. is located in the Chollas Creek watershed (180703041201).²

5.2 Air Quality

The Agency does not anticipate that any new chemicals will be released into the environment due to manufacturing the new product. The applicant stated that manufacturing the new product is not expected to result in changes in the type of air emissions and therefore, additional environmental controls for air emissions or a new air permit will not be required.

5.3 Water Resources

The Agency does not anticipate that manufacturing the new product will cause the discharge of any new chemicals into water. The applicant stated that manufacturing the new product is not expected to result in changes in wastewater discharges. Therefore, no additional environmental controls or a new water discharge permit will be needed.

5.4 Soil, Land Use, and Zoning

The Agency does not anticipate that manufacturing the new product will lead to changes in soil, land use, or zoning. The applicant stated that there will be no expected facility expansion due to manufacturing the new product. Therefore, there will be no zone change or land conversion of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use.

5.5 Biological Resources

The Agency reviewed the U.S. Fish and Wildlife Service's (U.S. FWS)³ critical habitat and endangered species maps. According to the maps, 16 threatened species and 39 endangered species are listed in San Diego, California. However, because the proposed action does not require expansion of the manufacturing facility, and the listed species are not found in the immediate vicinity of the facility, there will be no impacts to the protected species or their potential habitat.

5.6 Regulatory Compliance

The applicant stated that the manufacturing facility complies with all applicable environmental regulations. The applicant also stated that the facility complies with the Endangered Species Act (ESA).

5.7 Socioeconomics and Environmental Justice

No changes on socioeconomics or environmental justice are anticipated due to manufacturing the new product. The Agency does not anticipate any impacts on employment, revenue, or taxes because the applicant stated that manufacturing the new product will lead to only an incremental increase in production at the manufacturing facility.

No changes in impacts on environmental justice are anticipated. The applicant stated that no new or increased compounds will be emitted, and no facility expansion will occur due to manufacturing the new product. Thus, no disproportionate impacts to environmental justice populations will occur as a result of manufacturing the new product.

5.8 Solid Waste and Hazardous Materials

The Agency does not foresee that the introduction of the new product will notably affect the current manufacturing waste generated from the facility production of all waterpipe tobacco. The Agency anticipates that the waste generated due to manufacturing the new product will be released to the environment and disposed of in landfills in the same manner as any other waste generated from any other products manufactured in the same facility. The applicant stated that manufacturing the new product will not require any additional environmental controls for waste disposal. Therefore, no new or revised waste permit or an expansion of a waste management facility is expected.

5.9 Floodplains, Wetlands, and Coastal Zones

There will be no facility expansion due to manufacturing the new product and the applicant did not propose any land disturbance; therefore, there will be no effects on floodplains, wetlands, or coastal zones.

5.10 Impacts of the No-Action Alternative

The environmental impacts of the no-action alternative will not change the existing condition of manufacturing waterpipe tobacco at the listed facility, as many similar tobacco products will continue to be manufactured.

6. Potential Environmental Impacts of the Proposed Action and Alternatives – Use of the New Product

The Agency considered potential impacts to resources in the environment that could be affected by use of the new product and found no significant impacts based on Agency-gathered information and the applicant's submitted information. Included in the information the Agency considered were the current and projected market volume for the first- and fifth-years of marketing the new product in the United States (Confidential Appendix 2).

6.1. Affected Environment

The affected environment includes human and natural environments in the United States because the marketing order will allow for the new product to be sold to consumers in the United States.

6.2. Air Quality

The Agency does not anticipate that new chemicals will be released into the environment as a result of use of the new product, relative to chemicals released into the environment due to use of other waterpipe tobacco products already on the market because (1) the emissions from the new product will be released in the same manner as the emissions of the original product and other marketed waterpipe tobacco products; (2) the new product is expected to compete with, or replace, other currently marketed waterpipe tobacco; and (3) the ingredients in the new product are used in other currently marketed tobacco products.

The impacts from use of waterpipe tobacco products include exposure to secondhand smoke (SHS) produced from smoking at homes, hookah bars, lounges, or anywhere else they are used. Particles emitted by smoking may remain on surfaces, be re-emitted back into the gas phase, or react with oxidants and other compounds in the environment to yield secondary pollutants, thirdhand smoke

(THS). These pollutants coexist in mixtures in the environment alongside SHS.^{4, 5} While these studies focus on SHS from cigarette smoking, research suggests that SHS from waterpipe smoking may be worse due to higher concentrations of carcinogens, carbon monoxide, and other chemicals.^{6, 7, 8} Carbon monoxide poisoning has been reported for users of waterpipe tobacco products as well as non-users in environments where waterpipe tobacco was being consumed,⁸ raising concerns for employees and non-smoking patrons of establishments where waterpipe tobacco is consumed.

There is no safe level of exposure to SHS.^{9, 10} Even low levels of SHS can harm children and adults in many ways, including the following:

- The U.S. Surgeon General estimates that living with a smoker increases a nonsmoker's chances of developing lung cancer by 20 to 30%.¹¹
- Exposure to SHS increases school children's risk for ear infections, lower respiratory illnesses, more frequent and more severe asthma attacks, and slowed lung growth. It can cause coughing, wheezing, phlegm, and breathlessness.^{9, 10}
- SHS causes more than 40,000 deaths a year.¹¹

Use of waterpipe tobacco by youth and young adults is increasing¹² and researchers believe this increase is due to the false belief that waterpipe tobacco smoking is less addictive and harmful than cigarette smoking.¹³ Waterpipe tobacco smoking exposes users to nicotine, carbon monoxide, polycyclic aromatic hydrocarbons, volatile aldehydes, phenols, heavy metals and other constituents.¹⁴ Comparisons between cigarette smoking and waterpipe tobacco smoking suggests that users of waterpipe inhale as much as 120 times the tobacco smoke than cigarette users in a single session with increased concentrations of many components found in cigarette smoke. Waterpipe tobacco smoking is associated with various respiratory diseases, cancer, low birthweight, cardiovascular disease, and other health related issues.¹⁵ This is especially concerning considering the prevalence of youth use.¹⁴ However, because marketing this product is not expected to increase overall consumption of waterpipe tobacco and waterpipe tobacco imports do not appear to be increasing, no cumulative environmental impacts from use are expected.

As of December 2020, 28 states and the District of Columbia have implemented comprehensive smoke-free laws.¹⁶ Such laws are expected to reduce the levels of non-user exposure to SHS and THS.

6.3. Environmental Justice

No new emissions are expected due to use of the new product. Therefore, there will be no disproportionate impacts on minority or low-income populations.

6.4. Impacts of the No-Action Alternative

The environmental impacts of the no-action alternative will not change the existing condition of use of waterpipe tobacco, as many similar tobacco products will continue to be used in the United States.

7. Potential Environmental Impacts of the Proposed Action and Alternatives – Disposal of the New Product

The Agency considered potential impacts to resources in the environment that may be affected by disposal of the new product. Based on the applicant's submitted information, including market volume projections for the new product, the Agency found no significant impacts.

7.1. Affected Environment

The affected environment includes human and natural environments in the United States because the marketing orders will allow for the new product to be sold to consumers in the United States.

7.2. Air Quality

The Agency does not anticipate the disposal of the new product, or the packaging material will lead to the release of new or increased chemicals into the air.

The chemicals in the new product are commonly used in other currently marketed waterpipe tobacco. Because the new product is anticipated to compete with or replace other currently marketed waterpipe tobacco, the waste generated from the new product will replace the same type of waste. Therefore, the fate and effects of any materials emitted into the air from disposal of the new product are anticipated to be the same as any materials from other waterpipe tobacco disposed of in the United States.

No changes in air quality from disposal of the new product's packaging materials will be expected because (1) the packaging materials are commonly used in the United States, and (2) the waste generated due to disposal of the new product's packaging is a minuscule portion of the municipal solid waste per FDA's experience in evaluating the packaging waste generated from tobacco products.

7.3. Biological Resources

The proposed action is not expected to change the continued existence of any endangered species or result in the destruction or adverse modification of the habitat of any such species, as prohibited under the U.S. ESA. The new product is not expected to change disposal conditions as (1) the disposal of the new product will be the same as the disposal of other waterpipe tobacco products that are currently marketed in the United States, and (2) there will be no anticipated increase in amount of waterpipe tobacco being disposed of as the new product are anticipated to replace similar marketed waterpipe tobacco.

7.4. Water Resources

No changes in any impacts on water resources are expected due to disposal of the waterpipe tobacco and packaging from the new product because the chemicals in the new product are used in other currently marketed waterpipe tobacco products. Furthermore, the new product will compete with or replace other waterpipe tobacco currently on the market.

Information on environmental impacts of disposal of water from waterpipe smoking is scarce. However, users who smoke waterpipe tobacco at home discard the water waste in various places including down the drain, backyard soil, and in storm drains.¹⁷ This is concerning considering the various compounds that may leach out of the discarded water after disposal including remaining heavy metals.^{18, 19}

Waterpipe tobacco contains ingredients similar to those used in cigarettes. While waterpipe products are mainly heated but not combusted during use as the case of cigarette smoking, similar types of toxic chemicals of discarded waterpipe water may leach out to the environment, potentially threatening human health and the environment, especially marine ecosystems.¹⁹ Individually, marketing this product is not expected to increase overall consumption of waterpipe (Confidential Appendix 2).

7.5. Solid Waste

Like cigarette butts, the environmental toxicity of discarded waterpipe tobacco is not well studied, but it is likely that discarded waterpipe tobacco may leech out into water, potentially affecting human health and the environment, especially marine ecosystems.²⁰ The chemicals in discarded tobacco can be the original chemicals in the unsmoked tobacco or the pyrolysis and distillation products produced during use. Airborne emissions from used tobacco after disposal depend on the environmental conditions and the chemicals in the used tobacco. These emissions can be influenced by several factors, such as the brand, flavorings and other ingredients in the tobacco filler, types of tobacco, and extent of use. Emissions from disposal of the charcoal are unlikely to be of concern since the majority of charcoal will be used up in the smoking process. Additionally, air emissions from the disposed waterpipe water seem unlikely as those chemicals will likely remain in the water.

The Agency does not foresee the introduction of the new product will notably affect the current waterpipe tobacco and packaging waste generated from all waterpipe tobacco products. The waste generated due to disposal of the new product will be disposed of in the same manner as any other waste generated from any other waterpipe tobacco products marketed in the United States. The amount of waterpipe tobacco waste generated will be equivalent to the market projections (Confidential Appendix 2) and a portion of that will be littered.

7.6. Socioeconomics and Environmental Justice

The Agency does not anticipate changes in impacts on socioeconomic conditions or environmental justice from disposal of the new product. The waste generated due to disposal of the new product will be handled in the same manner as the waste generated from disposal of other waterpipe tobacco products in the United States. No new emissions are expected due to disposal of the new product; therefore, there will be no disproportionate impacts on minority or low-income populations.

7.7. Impacts of the No-Action Alternative

The environmental impacts of the no-action alternative will not change the existing condition of disposal of waterpipe tobacco and packaging, as many other similar tobacco products will continue to be disposed of in the United States.

8. List of Preparers

The following individuals were primarily responsible for preparing and reviewing this environmental assessment:

Preparer:

Carla Figueroa, M.S., Center for Tobacco Products

Education: M.S. in Biotechnology

Experience: Six years in various scientific activities

Expertise: Water quality, wastewater treatment, regulatory compliance

Reviewer:

Shannon K. Hanna, Ph.D., Center for Tobacco Products

Education: Ph.D. in Environmental Science and Management

Experience: Six years in environmental science, three years in toxicology
 Expertise: Ecotoxicology of new substances and materials, bioaccumulation of chemicals including heavy metals, soil/sediment, and water quality

9. A Listing of Agencies and Persons Consulted

Not applicable.

10. References

1. Google. Map of 10802 N. 23rd Ave., Phoenix, AZ 85029. *Google Maps*. Available at: www.google.com/maps. Accessed July 14, 2022.
2. United States Environmental Protection Agency. How's My Waterway?. Available at: <https://mywaterway.epa.gov/community/675%20Gateway%20Center%20Dr,%20San%20Diego,%20CA,%2092102,%20USA/overview>. Accessed July 14, 2022.
3. U.S. Fish & Wildlife Service. Threatened & endangered species. *Environmental Conservation Online System*. n.d.. Available at: <https://ecos.fws.gov/ecp/>. Accessed July 14, 2022.
4. Burton A. Does the smoke ever really clear? Thirdhand smoke exposure raises new concerns. *Environmental Health Perspect*. 2011;119(2):A70-A74.
5. Matt GE, Quintana PJE, Destailats H, et al. Thirdhand tobacco smoke: emerging evidence and arguments for a multidisciplinary research agenda. *Environ Health Perspect*. 2011;119(9):1218-1226.
6. Daher N, Saleh R, Jaroudi E, et al. Comparison of carcinogen, carbon monoxide, and ultrafine particle emissions from narghile waterpipe and cigarette smoking: sidestream smoke measurements and assessment of second-hand smoke emission factors. *Atmos Environ (1994)*. 2010;44(1):8-14.
7. Weitzman M, Yusufali AH, Bali F, et al. Effects of hookah smoking on indoor air quality in homes. *Tob Control*. 2016;26(5):586-591.
8. Kocak AO, Akbas I, Cakir Z. Carbon Monoxide Poisoning Due to Water Pipe Smoking: Case Series. *Journal of Emergency Medicine Case Reports*. 2016;8(2).
9. U.S. Department of Health and Human Services. *The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General*. Atlanta (GA): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2006.
10. U.S. Department of Health and Human Services. *The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General: secondhand smoke, what it means to you*.

Atlanta (GA): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion; 2006.

11. U.S. Department of Health and Human Services. *The health consequences of smoking—50 years of progress: a report of the surgeon general*. Atlanta (GA): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014.
12. Grinberg A. Subjective well-being and hookah use among adults in the United States: a nationally-representative sample. *Drug and Alcohol Dependence*. 2015;153:242-249.
13. Primack BA, Sidani J, Agarwal AA, Shadel WG, Donny EC, Eissenberg TE. Prevalence of and associations with waterpipe tobacco smoking among U.S. university students. *Ann Behav Med*. 2008;36(1):81–86.
14. Primack BA, Carroll MV, Weiss PM, et al. Systematic review and meta-analysis of inhaled toxicants from waterpipe and cigarette smoking. *Public Health Rep*. 2016;131(1):76-85.
15. Waziry R, Jawad M, Ballout RA, Al Akel M, Akl EA. The effects of waterpipe tobacco smoking on health outcomes: an updated systematic review and meta-analysis. *Int J Epidemiol*. 2017;46(1):32-43.
16. American Lung Association. Smokefree air laws. 2020. www.lung.org/our-initiatives/tobacco/smokefree-environments/smokefree-air-laws.html. Accessed February 15, 2022.
17. Kassem NO, Kassem NO, Liles S, et al. Waterpipe device cleaning practices and disposal of waste associated with waterpipe tobacco smoking in homes in the USA. *Tob Control*. 2020;29(Suppl 2):s123-s130.
18. Al-Kazwini AT, Said AJ, Sdepanian S. Compartmental analysis of metals in waterpipe smoking technique. *BMC Public Health*. 2015;15, 153.
19. Edwards RL, Venugopal PD, Hsieh JR. Aquatic toxicity of waterpipe wastewater chemicals. *Environ Res*. 2021;197:111206.
20. Kadir AA, Sarani NA. Cigarette butts pollution and environmental impact - a review. *Applied Mechanics and Materials*. 2015;773-774:1106-1110.

Confidential Appendix 1. Changes in the New Product Compared with the Original Product

STN	Modifications
EX0002340	<ul style="list-style-type: none"><li data-bbox="415 304 1323 367">• Decrease in <u>quantity of</u> (b) (4) (b) (4)<li data-bbox="415 367 1398 411">• Addition of (b) (4)

Confidential Appendix 2. Current Market Volume for the Original Product and First- and Fifth-Year Market Volume Projections for the New and Original Product

STN	Market Volume					
	Units	Current	Projected			
			First-Year		Fifth-Year	
		Original Product	New Product	Original Product	New Product	Original Product
EX0002340	Pouches	(b) (4)				
	Metric Tons					