



Oregon

Kate Brown, Governor

Department of Environmental Quality

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August 7, 2020

Congressman Earl Blumenauer
1111 Longworth House Office Building
Washington, DC 20515

Representative Karin Power
Oregon State Capitol
900 Court Street, NE, H-274
Salem, OR 97301

Dear Congressman Blumenauer and Representative Power,

Thank you for your letter concerning the potential environmental and public health impacts of repeated and extensive use of tear gas in downtown Portland. The Oregon Department of Environmental Quality (ODEQ) shares your concerns. ODEQ has reviewed the questions in your letter carefully with staff in our laboratory and other programs. Where we have information, we are providing it in our responses below. In many cases, however, and particularly in terms of operations by the federal Department of Homeland Security (DHS), we do not have information about specific products and quantities that have been used. Questions about those operations should be answered in the first instance by DHS and the U.S. Environmental Protection Agency (EPA).

- 1. What chemicals and/or gases have been deployed or utilized in the course of law enforcement activity in response to protests in Portland? Please include the number of grenades or cartridges attributable to each type of gas that has been discharged so that we can understand the volume of gases discharged.*

The Oregon Department of Environmental Quality (DEQ) reached out to the City of Portland for more information about the chemicals that have been used for crowd control purposes. On July 28, the city provided the following information to DEQ about the products being used by the Portland Police Bureau in recent months:

- FN303 Pava/OC Powder 40MM
- Combined Systems OC-CS Vapor Grenade Model 6343
- Defense Technology Triple Chaser OC Model 1020
- Defense Technology Triple Chaser CS Model 1026
- Defense Technology Triple Chaser Saf-Smoke Model 1027
- Defense Technology Flameless Tri-Chamber CS Model 1032
- Defense Technology Skat Shell 40MM CS Model 6172
- Defense Technology Skat Shell 40MM OC Model 6170
- Defense Technology Han-ball Grenade OC Model 1099

DEQ has requested the volume of material used, but has not yet received that information at the time of this letter.

- 2. What measures are being taken to comply with material data sheets and applicable usage guidelines for these chemicals?*

DEQ does not have information about measures the city or DHS have taken to assure compliance with usage guidelines for the products being used during the recent protests.

- 3. Are any grenades or cartridges expired? If so, what are the health, safety, and environmental risks from using expired gases?*

DEQ does not have information about whether any of the products used by the city or DHS during recent protests were expired, and can only provide general information on the implications of the use of such products past any expiration date. Typically, the risk associated with expired cartridges is similar to that of other expired items with propellants or combustible components, such as fireworks: namely, the possibility that the propellant will have degraded to the point that the required reaction, i.e., explosion does not react properly or at all. The effect of this for CS gas would be that gas may not disperse as intended.

Without knowing specific information, such as which chemicals were expired, how long they were expired, and how the canisters were stored during that time, we cannot offer more information about the potential risks associated with a chemical's use. The Oregon Health Authority may have more information on the toxicology and its impacts on public health. However, the manufacturers of the products used would be the best source of information for the risks relating the expiration date of a product.

- 4. What environmental review and risk assessments for environmental and public health has EPA conducted regarding these chemicals and/or gases?*

Please contact EPA for this information.

- 5. What air and water quality monitoring has been conducted in the area of these discharges, and what are the results to date?*

Water Quality

Some of the products used by the city can be detrimental to water quality, and may be particularly toxic to aquatic life. Due to the large amount of CS products used within the downtown Portland area, DEQ sent a letter to the city on July 30, 2020, requiring additional water quality monitoring as provided for in the city's NPDES MS4 Permit from DEQ. In its letter, DEQ asked the city to provide a supplemental monitoring plan that:

- Identifies outfalls where any untreated stormwater may enter the Willamette River in and around locations where tear gas products have been used;
- Monitors water quality at the identified outfall(s) during the first major flushes (i.e., rain storms large enough to generate a discharge) that discharge into the Willamette River;
- Monitors water quality at the closest upstream and downstream outfalls that do not collect stormwater from the downtown area during the first flush, but do discharge stormwater; and,
- Analyzes the samples for the following pollutants:
 - Total Chromium
 - Hexavalent Chromium
 - Total Lead
 - Total Zinc
 - Total Copper
 - Total Barium
 - Perchlorate

We understand that the city cleaned storm drains in the area of tear gas usage before the rain storm yesterday in order to minimize any potential water quality impacts, but we have not yet heard whether the city was able to mobilize stormwater monitoring in advance of completing its monitoring plan (nor are we sure whether the storm was large enough to generate any stormwater discharge to the river). In any event, the city will be submitting its monitoring plan and sampling results (including recent monitoring, if taken) to DEQ within the coming weeks. Full sampling results may take longer – in connection with the first large storm sufficient to generate a stormwater discharge.

Once sampling results are obtained, DEQ will determine whether and if so, what remedial action the city may be required to conduct to protect water quality in the Willamette River.

Air Quality

DEQ maintains a statewide network of ambient air quality monitors. The network is made up of fixed-site monitors, located to conform with EPA's National Monitoring Strategy, as well as state and local needs. Ambient monitoring is used primarily to evaluate long-term air quality trends for the EPA's six federally-regulated criteria air pollutants. These monitors also provide real-time data about community-scale events, such as wildfire smoke. The closest fixed monitoring stations DEQ has to downtown Portland are more than a mile away at 5824 SE Lafayette St. and the Humboldt School in North Portland. The agency monitors for six EPA designated criteria pollutants at SE Lafayette, and for 109 air toxics at the Humboldt School.

DEQ has not conducted air quality monitoring in the vicinity of the tear gas releases using mobile monitors. There are a number of challenges to air quality sampling or monitoring for these chemicals. First, the active ingredients contained in the types of products used in downtown Portland by the city are not common in ambient air. As such, DEQ does not monitor for them at the fixed monitoring stations.

In addition, to quantify the hazardous constituents in these products, DEQ would need to revise existing laboratory analytical methods and determine applicable standards for each chemical tested before a monitor could be used. CS gas disperses quickly. Due to the quick dispersal nature of these products, DEQ expects any air quality impacts would be localized and not long-term. As a result, any detection would only confirm that the contaminants were, in fact, present, which is already known. At this time, no standards exist to determine what persistent levels of tear gas-related hazardous contaminants are dangerous to the environment or public health.

Finally, there can be more common *inactive* ingredients in tear gas, such as particulate matter, but there are numerous sources for these types of pollutants and existing monitoring stations are too far away to detect any differences related to tear gas use in downtown Portland.

Despite the localized use of tear gas, overall air quality in the Portland Metro area has generally remained in the healthy range over the last few weeks. Exceptions have been due to a recent wildfire at Sauvie Island and increases in ozone related to seasonal high temperatures. Both wildfire smoke (as measured by particulate), and ozone or smog impacts on air quality are common in the summer months.

You may review data from our monitors at DEQ's interactive monitoring webpage¹ or by downloading the OregonAIR app on your smartphone.

6. What plans exist to clean up chemicals that have already been used? What protocols will guide this clean-up, how will this work be funded, and on what timeline?

Currently, DEQ has no plans for an agency-led cleanup related to CS gas and other crowd control products already used in Portland. If the city's sampling of its stormwater system indicates that there is a high concentration of contaminants in the area where these products have been used, DEQ may require additional mitigation (beyond street cleaning) for the site in order to protect water quality. Any required mitigation or other response to that testing would be addressed through the agency's existing stormwater authority and the City's MS4 permit requirements.

State and federal environmental cleanup laws and regulations could apply if there has been a release of a reportable quantity of a hazardous substance in connection with the use of tear gas. However, at this time, DEQ is not aware that such a release (above reportable quantities) has occurred.

We will keep your offices updated on the results of the required stormwater sampling as it progresses

¹ <https://oraqi.deq.state.or.us/home/map>

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Representative Power
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and as we receive additional information about this situation. Please do not hesitate to contact Annalisa Bhatia, senior legislative advisor, at bhatia.annalisa@deq.state.or.us or (503) 229-6800 if you need anything else from DEQ or wish to set up a time to discuss this further.

Sincerely,



Richard Whitman
Director

cc: Chad Wolf, Acting Secretary
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