

**Subject: T3-2022-16220 Bull Run Filtration Projects**

**Odor Considerations Supplemental Information**

None of the processes at the Portland Water Bureau’s filtration facility will generate odors that would be detectable off-site. Drinking water treatment processes produce only minimal odors, as described in Exhibit A.53 Filtration Facility Odor Considerations and in interview highlights with plant operations managers in Exhibit A.45 Oregon’s Water Treatment Plant Operations. This is particularly true for facilities, like the one proposed, that use mechanical dewatering rather than drying beds or lagoons to manage solids.

**Treatment Solids**

The process of treating drinking water removes silts, clays, and other settleable or filterable materials from the water that is delivered to customers. Unlike solids from wastewater treatment, the “residual solids” from water treatment are mostly inert. They can sometimes have an earthy organic smell, but more often don’t smell like anything, as the material removed from the raw water does not include components (such as sulfur compounds or significant quantities of organic material) that may create odors when concentrated or stored.

The residuals process area at the filtration facility will be located towards the interior of the 95-acre site and not near any residences. This area is where solids removed from the water will be further concentrated and dewatered onsite to create a material similar to wet soil that can be transported offsite.

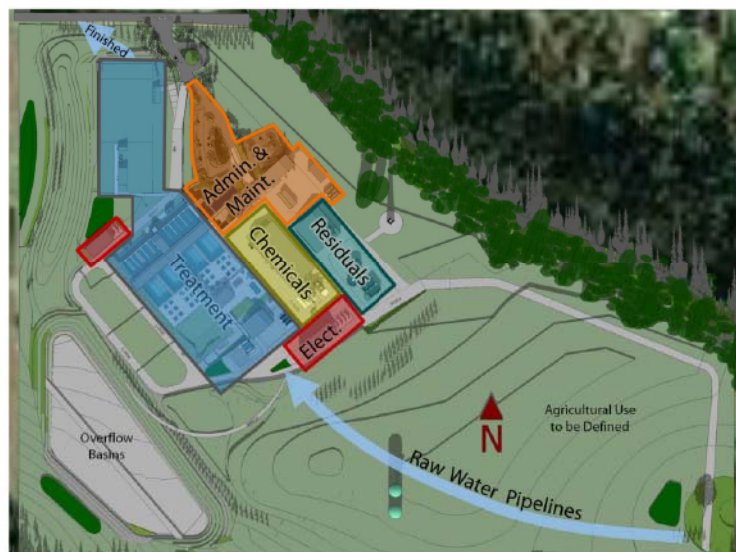


Figure 1. Facility layout showing location of residuals near the interior of the 95-acre site.

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In 2019 and 2020, the Water Bureau hosted tours of the Wilsonville Water Treatment Plant and the Joint Water Commission Water Treatment Plant to provide community members an opportunity to see, hear, (smell), and ask questions about equipment and processes at operating facilities (Exhibit A.29, pages 13-15). The photos below were taken during the Wilsonville tour and show an example of a sludge equalization storage area (covered and below grade, in this case) and typical solids resulting from water treatment (shown in a roll-off bin near the chemical building). Water Bureau tour participants do not recall any perceptible odors.



*Figure 2. Below grade sludge equalization storage (left) seen during the Wilsonville Water Treatment Plant tour.*



*Figure 3. Typical residual solids seen in a roll-off bin near the chemical building during the Wilsonville Water Treatment Plant tour.*

## Chlorine Smells

As noted in Exhibit A.53 Filtration Facility Odor Considerations, page 8, there are only two treatment chemicals with minor potential to have perceptible odor by people at the facility. Each would be undetectable beyond the property boundary. Both chemicals (sodium hypochlorite and sodium bisulfite) will be stored inside the Chemical Building which is located at the interior of the 95-acre site and a significant distance from the property line as well as the closest residences. The Chemical Building is at least 450 feet from the City of Portland's property boundary, and there is a distance of more than 800 feet between the building and the nearest existing residence (also see Exhibit A.212 LU-102 and LU-302).

In addition, the treatment process will use 0.8 percent onsite-generated hypochlorite solution for disinfection which is much more dilute than household bleach and has a much lower potential for chlorine smells onsite. Household bleach is generally about 5 to 6 percent sodium hypochlorite solution.