PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Bull Run TREATMENT PROJECTS

Filtration

Technical Memorandum

Subject:	Potential Local Impacts of Facility Operation: Air Quality, Dust, Noise, and Vibration
PWB Project #s:	W02229
Stantec Project #:	2002006066
Date:	August 29, 2022
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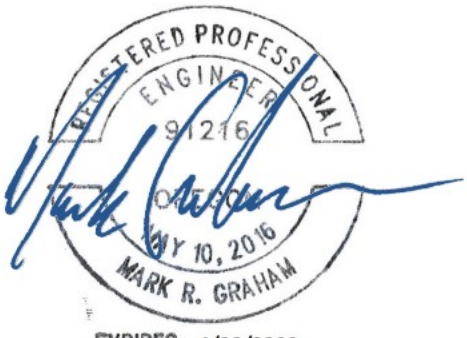
Stantec | in association with carollo and other firms



EXPIRES: 6/30/2023

Exhibit A.51

1.0 Introduction

The Filtration Facility (Facility) being developed as part of the Bull Run Treatment Project is located in unincorporated Multnomah County to the south of SE Carpenter Lane. The main land use permit for the new Facility is Multnomah County's Type III Conditional Use/Community Service Use. Key Community Service approval criteria require that the use be consistent with the character of the area and not a) force a significant change to farm or forest uses, or b) significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use. This memorandum evaluates the potential for long-term facility operations to affect air quality or cause dust, noise and/or vibration which could have off-site impacts, and measures that will be implemented to limit potential impacts.

Figure 1. Filtration Facility Vicinity Map.

2.0 Facilities and Operations

The Filtration Facility will include the following facilities:

- Administration Building
- Maintenance Building
- Water Storage and Treatment Basins

- Chemical Storage and Feed Building
- Process Residuals Storage and Treatment Building
- Electrical Buildings
- Standby Emergency Generators
- Overflow Basins
- Roads and Access Pathways
- Landscaping and Planting Areas

Operation of the Filtration Facility will include the following major activities:

- Vehicle parking and circulation
- Chemical delivery, storage, and feed
- Off-haul of residual solids
- Pumping
- Equipment maintenance and repair

3.0 Potential Dust Impacts

During operation of the Filtration Facility, there will not be any activities that will generate significant amounts of dust. All frequently-travelled roadways and parking lots will be paved, so vehicle traffic is not anticipated to generate dust. Infrequently-travelled roads (those typically used less than once per week), including the perimeter road outside of the security fence and the emergency access driveway on the southeastern portion of the property will be gravel, and will be properly maintained to minimize generation of dust during use. The dust raised by infrequent travel along maintained gravel roads is considerably less than historical conditions from farming the site, as well as ongoing farming activities on neighboring properties, and is consistent with the rural character of the area.

Residual solids will be dewatered and stored and off-hauled as a moist cake, with a solids content of 10% to 30% - no dust is generated during normal operations of these facilities. Solids handling facilities and the areas around loading and off-haul locations will be washed down regularly and kept neat and clean, further minimizing the generation of dust.

Areas not actively used for the filtration facility operation will be landscaped and maintained to minimize dust generation.

4.0 Potential Air Quality Impacts

Activities that have potential to impact air quality include vehicle operation, chemical delivery and storage, and operation of the standby diesel generators.

Operation of internal combustion engine vehicles by staff and site visitors will have a minor air quality impact. PWB is in the process of converting their vehicle fleet to electric vehicles (EVs), and the Facility will include EV charging stations to support this transition, and minimize air quality impacts.

Chemicals delivered to and used on the site may be released in small quantities during delivery and storage, but none of the chemicals proposed for the facility trigger air quality permit requirements or safety concerns. Chemical selection considered potential environmental hazards and, with the exception of ozone, chemicals which could create toxic air quality conditions (such as chlorine gas) will not be used at the Facility. Ozone generation will be closely monitored for air quality impacts; any leaks will result in the shutting down the generators until the issue is resolved. A Hazard Materials and Management Plan (HMMP) has been prepared which includes details on the rules and safety measures associated with these facilities.

Diesel engines will be used to power standby generators and emergency fire pumps. These engines will meet current air quality regulations and will be operated primarily for periodic, short-term test cycles.

5.0 Potential Noise and Vibration Impacts

Equipment used for operation and maintenance of the Facility that will generate noise and vibration include:

- Pumps
- Diesel engines
- Blowers
- Centrifuges
- HVAC Systems
- Dry chemical handling equipment

To prolong service life and reduce maintenance, equipment will be mounted with appropriate mass and base isolation to limit vibration. These efforts will also limit the areas where equipment vibration can be perceived to those areas immediately adjacent (within the same room or closer than 10 feet away outdoor) to the equipment within the property boundary.

Noise levels inside and outside structures will be limited to those allowable by health and safety rules and by code. As described in the Bull Run Filtration Facility Exterior Noise Analysis Technical Memorandum, noise levels at the property line will not exceed the code-allowable levels of 60 dBA during the daytime and 50 dBA at night.

6.0 Conclusions

After reviewing the proposed facilities and operations anticipated at the Filtration Facility, and considering the design measures proposed to be implemented, normal activities at the Filtration Facility will not cause any significant change to off-site air quality, dust, noise, or vibration.