

August 4, 2023

Jesse Winterowd  
Winterbrook Planning  
610 SW Alder Street, Suite 810  
Portland, OR 97205

**Subject:** Supplemental Information

**Re:** Land Use Permitting

Dear Jesse:

This letter provides additional information regarding existing water wells adjacent to the property upon which the Portland Water Bureau Filtration Facility is proposed (the “Filtration Facility Site”). in response to comments on that issue included in a memorandum prepared by True North Geotechnical dated June 28, 2023 (Exhibit E.21).

Construction of the Project will include excavations up to depths of 20- to 30-feet below ground surface (bgs). It is our opinion that construction activities related to the development of the Project will not impact groundwater wells, as the depth of wells are greater than 400 feet below ground surface (bgs) with considerable separation from surface activities related to the Project.

Potential impact to existing groundwater wells was assessed by reviewing wells within 300-feet from the outer boundary of the proposed Filtration Facility property. A geographic information systems (GIS) geodatabase containing the location of wells was then acquired from the Oregon Water Resources Department (OWRD) to identify wells within the 300-foot zone outside of the Facility boundary. Geotechnical borings, environmental borings, and borings/wells that did not observe static groundwater were excluded. Three wells were identified within the southwest corner of the property near Johnson Creek. The attributes of these three wells are summarized in Table 1 and presented on Figure 1.

**Table 1. Summary of Water Wells Near Filtration Facility**

OWRD Log ID	Address of Well	Estimated Ground Elevation (Feet; NAVD 88) <sup>a</sup>	Well Depth / Bottom Elevation (Feet; NAVD 88)	Static Water Level Depth Below Ground	
				Feet bgs / Elevation (NAVD 88)	Date of measurement
MULT 2594 <sup>b</sup>	NA	659	420 / 239	20 / 639	5/1972
MULT 60890	34826 SE CARPENTER LN	659	420 / 239	293 / 366	4/13/2000
MULT 65190	34826 SE CARPENTER LN	658	500 / 158	290 / 368	9/25/2001

Notes: NA = not available, OWRD = Oregon Water Resources Department.

a. Ground surface elevation estimated from DOGAMI LiDAR (NAVD 88)

b. MULT 2594 was drilled in 1972 and was reconditioned in 2000 as MULT 60890; Oregon Well ID L136499.

MULT 60890 and MULT 65190 were used as representative wells for static groundwater conditions within the 300-foot buffer. MULT 2594 has a reported original static groundwater elevation of 20 feet bgs on its 1972 Water Well Report, which is likely erroneous. While perched aquifers are documented within the area, it is unlikely a perched aquifer would create a shallow static groundwater condition within a well drilled to a depth of 420 feet. In addition, the artesian condition of approximately 400 feet required to achieve a static groundwater condition of 20 feet bgs has not been observed in other wells and geotechnical explorations at this location due to unfavorable geologic and topographic conditions. The well log for MULT 60890 indicates the well was reconditioned from MULT 2594. MULT 60890 has a recorded static water level of 293 feet bgs which is consistent with MULT 65190, and other deep wells within the area.

MULT 60890 and MULT 65190 are screened at a minimum of 290' below bgs. Though these wells are near the southwest corner of the property boundary, the wells are over 320 feet horizontal distance to the nearest Facility structure (Overflow Basin) and over 2,400 feet horizontal distance from the shaft and tunnels. The Overflow Basin is expected to be constructed using common earth moving equipment of excavator, dozer, and dump trucks. Vibrations from the construction equipment is predicted to be on the order of 0.002 to 0.004 inches per second. For the stronger but further vibrations from tunneling and shaft construction, the predicted vibrations at these wells are less than 0.004 inches per second. For comparison, the typical threshold for blasting vibrations to protect sensitive structures with lathe and plaster is 0.5 inches per second, over 100 times greater than what is predicted at the wells. Therefore, construction vibrations are not expected to impact the performance of private wells because the distances and depth of the wells is too far from the construction work areas to result in damage. In addition, the wells are constructed with steel casing, a material that is tolerant to vibration without damage.

Given the depth of the wells and the separation from surface activities for the Project, we do not anticipate that the construction will adversely impact the water quality or performance of the existing wells within 300-feet of the property.

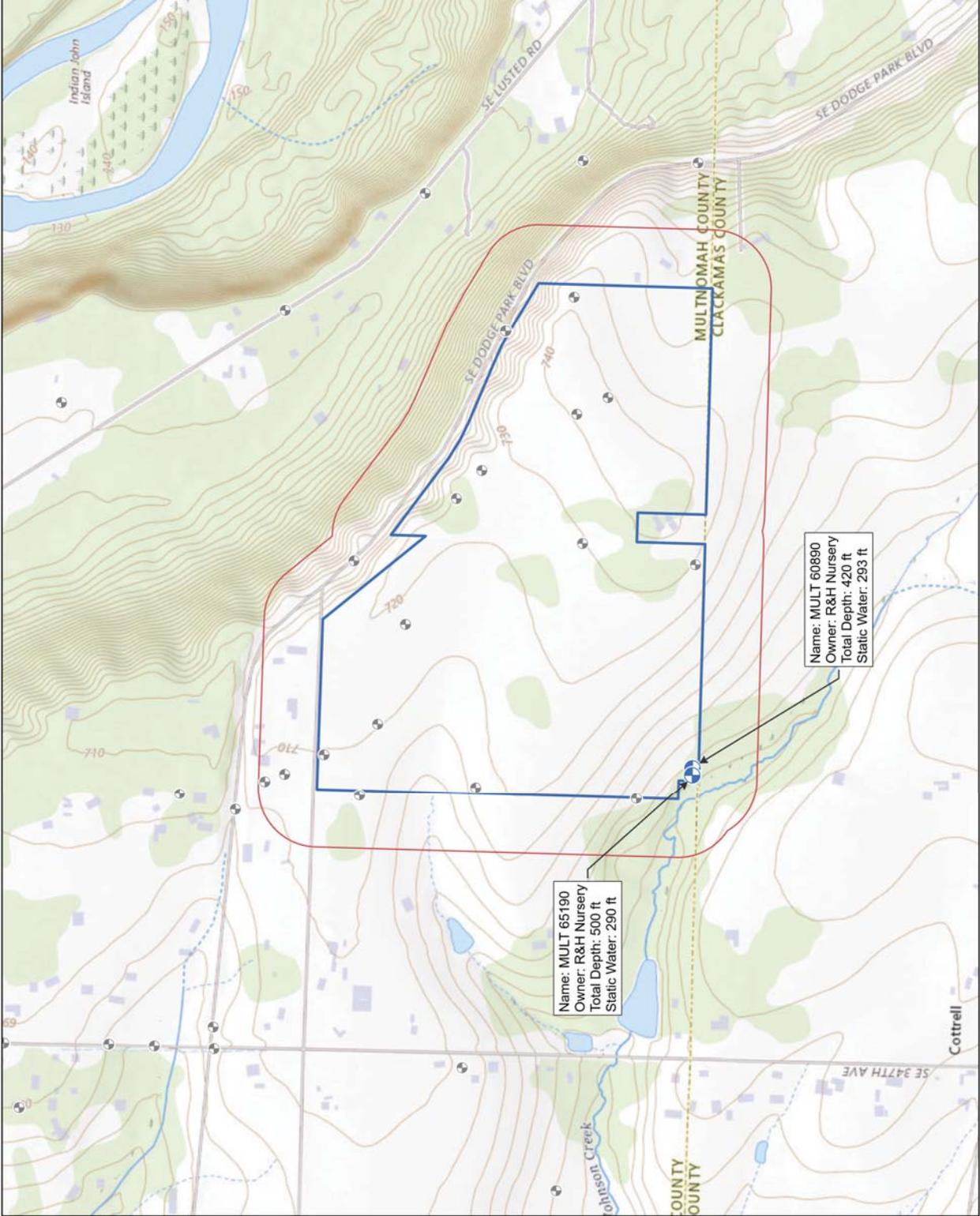
Sincerely,

Yuxin  
Lang

Digitally signed by  
Yuxin Lang  
Date: 2023.08.04  
14:09:26 -07'00'

Yuxin "Wolfe" Lang, PE, GE  
Principal Engineer

cc: File



**EXPLANATION**

-  MULT 65190 - Water well name and approximate location (OWRD)
-  Undifferentiated geotechnical borings, environmental borings, and water wells outside of the buffer zone
-  Filtration Facility Site
-  300-foot property buffer



1 inch = 500 feet  
0 250 500 1,000 Feet

Coordinate System: Filtration Local Coord Sys; Map Units: Foot

PORTLAND WATER BUREAU

BULL RUN FILTRATION FACILITY

**WELLS WITHIN VICINITY OF FILTRATION FACILITY**

JUL 2023 • PROJECT: 6084-0

FIGURE

1

**DELVE**  
underground