Oregon
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May 27, 2021

Aaron Leritz
Bridgewater Group, Inc.
7100 SW Hampton St., Suite 235
Tigard, OR 97223

RE: Ravine Fill Soils Sampling
at Home Forward – SE Powell in Portland
ECSI #4481

Dear Mr. Leritz:

The Department of Environmental Quality (DEQ) has completed its review of the ravine fill soils sampling conducted by Bridgewater Group in July and November 2019 at the Home Forward – SE Powell project site, located at 3000 & 3032 SE Powell Boulevard in Portland.

DEQ understands that a 30-40 foot deep ravine originally divided the Home Forward site into two parcels: the 3000 parcel (north of the ravine and south of Powell Boulevard) and the 3032 parcel (south of the ravine). In the 1960s, the ravine was backfilled with a mixture of soils (silts and gravels) and construction and demolition debris (bricks, concrete, and vegetation).

As part of the Phase II assessments, incremental soil samples were collected on the 3000 parcel in July 2019 to determine the nature and extent of contamination in the ravine fill soils. The 1.15-acre parcel was divided into three Decision Units. Eighteen (18) borings were advanced in a stratified random grid pattern in Decision Units 1 and 2 (DU-1 and DU-2), and 20 borings were advanced in a stratified random grid pattern in Decision Unit 3 (DU-3). A soil sample was collected from each boring at a depth of five feet below ground surface (bgs). Soil samples were then collected from each boring at 10 foot intervals, beginning at either 10 feet or 15 feet bgs, through the depth of the fill soils. Native soils at 10 feet bgs or deeper were not sampled.

A total of 51 individual soil samples were collected from DU-1, and 62 samples were collected from both DU-2 and DU-3. The samples from each Decision Unit were combined into one composite soil sample. The composite samples were initially analyzed for gasoline and four volatile organic compounds (benzene, ethylbenzene, toluene, and xylenes). After processing, the composite soil samples were analyzed for diesel, heavy oils, total metals, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).

The process was repeated on the 3032 parcel in November 2019. The 1.32-acre parcel was divided into two Decision Units, and 12 borings were advanced in a stratified random grid pattern on each Decision Unit. A soil sample was collected from each boring at a depth of five feet bgs. Subsequent soil samples were collected at regular five or ten foot intervals through the

depth of the fill soils. A total of 32 individual soil samples were collected from DU-1, and 30 samples were collected from DU-2. The samples from each Decision Unit were combined into one composite soil sample, and analyzed for the contaminants described above.

Low concentrations of PAHs were detected in the five composite soil samples. Concentrations of total carcinogenic PAHs (adjusted to the equivalent toxicity of benzo[a]pyrene) ranged from 0.063 parts per million (ppm) to 0.247 ppm. Concentrations of PCBs ranged from non-detect to 0.0281 ppm. Diesel and heavy oils were detected at concentrations up to 207 ppm and 431 ppm, respectively, and the highest detected concentrations of copper (89.3 ppm), lead (117 ppm), mercury (0.249 ppm), nickel (47.8 ppm), and zinc (195 ppm) exceeded naturally-occurring background concentrations for the Portland Basin. No volatiles were detected in the samples.

In addition to the composite soil sampling, seven individual samples from five feet bgs on the 3000 parcel, and 12 individual samples from five feet bgs on the 3032 parcel, were analyzed for asbestos and lead. Lead was detected in the samples at concentrations up to 221 ppm. Asbestos was identified as "present" in three of the samples. However, no asbestos was detected during a second round of sampling at the three locations.

DEQ understands that Home Forward plans to combine the two parcels and construct a housing complex (apartments) on the site. Based on the sampling results described above, the ravine fill soils do not qualify as clean fill. If the soils are excavated and removed from the site during construction or other activities, the soils will have to be disposed of in an authorized landfill.

In September 2020, DEQ issued *Decision Unit Characterization* guidance on the use of incremental sampling. In part, the guidance recommends that Decision Units be limited to half an acre in size, and that a minimum of 50 increments be collected for each composite sample. If fewer than 50 increments are proposed, field triplicates should be collected to determine a standard deviation. The guidance also recommends collecting increments in a systematic random sampling grid, i.e., with a random increment location within the first grid cell, and the grid location repeated across all cells in the decision unit.

The *Decision Unit Characterization* guidance was issued after the Home Forward samples had been collected and processed. DEQ mentions the guidance for future reference, because significant deviations from the guidance may not be accepted in the future. That said, the low concentrations of contaminants detected in the five Decision Units adequately demonstrates that the ravine fill soils pose no unacceptable risks to construction and excavation workers at the site.

If you have any questions about this letter or the project, please contact me at (503) 229-5369, or via e-mail at kevin.dana@deq.state.or.us.

Sincerely,

Kevin Dana

Kevin Dana, Project Manager
Northwest Region Cleanup Program