State of Oregon Department of Environmental Quality

DEQ Response to Comments

Bullseye Glass Company Drywell #1 Cleanup Proposed Workplan

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Comments received are presented here in paraphrased form with DEQ responses following.

1. **Comment**: Provide additional data from June 2017 Underground Injection Control (UIC) Facility Investigation Report to ECSI 6143 Bullseye UIC project website.

   DEQ Response: DEQ has uploaded in full the June 2017 Underground Injection Control Facility Investigation Report to the ECSI 6143 webpage for the Bullseye UIC project. The uploaded report includes: Analytical Lab Reports, Field Reports, Field Photos, Boring Logs, and all appendices.

2. **Comment**: Will excavation shoring be required for safety and to ensure collection of proposed confirmation soil samples?

   DEQ Response: DEQ has required that the final workplan discuss the potential for excavation shoring. DEQ understands that the use of excavation shoring is unlikely due to logistical and physical constraints and that no one will be entering the excavation. Contaminated soil will be removed to the maximum extent feasible and confirmation soil samples will be collected from the sides and bottom of the completed excavation using the excavator bucket. A DEQ staff member experienced in excavation sampling will be present to ensure remediation work is completed to the extent practicable and that confirmation soil samples will be collected at the prescribed depths. After completion of excavation work and confirmation sampling, the excavation will be backfilled with clean aggregate and compacted.

3. **Comment**: With only one data set, how confident is DEQ about the groundwater gradient?

   DEQ Response: DEQ checked for groundwater flow direction from four other nearby cleanup sites (ECSI 1739, 4589, 4167, 7123) and found the southwest flow direction of groundwater measured from Bullseye boring gauge data to be generally corroborated. DEQ reviewed field methods and data used to calculate a southwestern flow direction and gradient and agrees with the results. The quarterly depth to groundwater data from the proposed five monitoring wells will refine groundwater gradient and flow direction information.

4. **Comment**: Has DEQ looked for preferential pathways?

   DEQ Response: DEQ will require that Bullseye review subsurface utility details in the area of Drywell #1 and evaluate the potential for groundwater to preferentially flow in utility bedding materials. If preferential pathways are identified, and are determined to pose a significant human

health or environmental risk, DEQ will require additional follow-up work as part of ongoing monitoring. DEQ will request that Bullseye produce subsurface cross sections illustrating utility survey results which will be included in the remediation completion report. This report will be posted to the project ECSI 6143 webpage when available.

5. **Comment**: Regarding screen locations of the monitoring wells. DEQ has previously indicated that the well screens be long enough to capture accurate readings from high water times and low water times. Cd & Se were found to be at the deepest levels.

   DEQ Response: Well screens will be placed to ensure that the wells will produce groundwater during all seasons, likely extending from about 15 to 25 feet below ground surface. The depth to groundwater at Bullseye during January and February 2017 was about 16 feet below ground surface and this is expected to represent the high stand of the water table. Actual well design and screen placement will be determined by Bullseye's consulting field geologist under DEQ oversight. The well logs, including screen depths, will be documented in the remediation completion report, to be posted on the site ECSI 6143 webpage.

   Maximum cadmium and selenium concentrations in groundwater were from samples collected from borings screened between 20 and 25 feet below ground surface.

6. **Comment**: Is DEQ confident that all available records have been reviewed to accurately account for domestic wells within a 1 mile radius of the Bullseye glass company?

   DEQ Response: DEQ and Bridgewater Group evaluated Oregon Department of Water Resources records for wells located within Township 1S, Range 1E Section 11. Section 11 is a one-mile square area which includes the Bullseye property. The results of this search are presented in Table 2 of the June 2017 UIC Facility Investigation Report. Table 2 lists 7 industrial production wells, one geothermal well, and one domestic well. DEQ investigated this domestic well and found it to be incorrectly located in Section 11. This domestic well is located about 6 miles south of Bullseye in Milwaukie. As well, DEQ found records of 1,144 monitoring wells and geotechnical borings in Section 11. Monitoring wells are typically used to evaluate groundwater contamination.

   Neighbors near the southwest corner of the Bullseye facility on SE Bush Street and SE 21st Ave. will be asked about the presence of any unregistered wells on their property by a Bullseye contractor. DEQ will review results of this survey which will be included in the remediation completion report.

7. **Comment**: Storm water currently coming from the Bullseye Glass furnace facility roof has been tested, and approved by city of Portland for discharge into the city's combined sewer system.

   DEQ Response: The City of Portland Bureau of Environmental Services Industrial Permitting Section has reviewed Bullseye stormwater data and has issued a Combined Sewer System Contaminated Stormwater Wastewater Discharge Authorization to allow disposal of current and future Bullseye facility storm water to the municipal combined sewer. The stormwater must meet City pollutant limits. Stormwater leaving the Bullseye facility via the combined sewer flows to the Columbia Boulevard Wastewater Treatment Plant with post-treatment outfall to the Columbia River.

8. **Comment**: DEQ will have staff present during the soil excavation and sample collection.

   DEQ Response: DEQ will have Agency staff present at the Bullseye site during UIC decommissioning and removal, soil excavation, and confirmation soil sampling work.

9. **Comment**: Monitoring wells will be sampled for lead and selenium 4 x per year (seasonally).

   DEQ Response: This is the scope of monitoring work in the workplan. It is based on the findings of work documented in the June 2017 UIC Facility Investigation Report. As described in this June 2017 report, groundwater from borings was sampled for 14 metals. Lead and selenium were identified as requiring additional assessment in groundwater beyond the immediate location of Drywell #1.

10. **Comment**: The monitoring and gradient assessment is an iterative process and will be adjusted as needed.

    DEQ Response: This is correct.

11. **Comment**: We would like DEQ to include Cadmium and Hexavalent Chromium to the list of metals to be analyzed in samples collected from monitoring wells.

    DEQ Response: Based on existing site soil and groundwater data, most metals are localized to the location of Drywell #1 with the exception of selenium and possibly lead. DEQ has concluded that the lateral spread of these metals, except for selenium and possibly lead in groundwater, has been adequately characterized. DEQ has determined that no further monitoring for these metals, except for selenium and lead in groundwater, is required.

    The maximum hexavalent chromium concentration in groundwater (1.5 ug/L) was found in a boring located 300 feet upgradient of Drywell #1 at a location considered to represent area background conditions for groundwater quality.

12. **Comment**: What metals will be included for analysis in soil samples collected at the time of excavation?

    DEQ Response: Per the approved work plan, the proposed analytes to be evaluated during confirmation soil sampling below 10 feet at the dry well excavation are arsenic, cadmium, lead and selenium.

13. **Comment**: We would like DEQ to evaluate manhole sediments and scope local sewer lines for evidence of additional soil contamination. A concern has been raised about the condition of the city's sewer lines, about holes, breaks, joint openings from root intrusions, corrosion, age, heavy truck traffic, etc. There is a concern that these conditions may have allowed additional pollution hot spots to form along these lines.

    DEQ Response: Boring B-4 is located approximately halfway between Drywell #1 and the municipal sewer pipes south of the dry well. The 13 metals analyzed in groundwater from boring B-4 at16 feet were all well-below the EPA Drinking Water Maximum Contaminant Levels. The 14 metals sampled from four soil samples collected in boring B-4 were well below DEQ's Construction Worker Risk-Based Concentrations. DEQ has determined that evaluation of metals within the sewer pipes to the south of Drywell #1, beneath SE Bush Street, is not necessary. According to Portland Maps both sewers are made of concrete and were installed in 1990.

14. **Comment**: Please clarify the status of other rooftops and runoff sources near the Bullseye Glass Company that will have collected deposition from Bullseye's previously unfiltered emissions. Have these sources of neighborhood toxins been identified and their runoff pathways mapped?

DEQ Response: Bullseye glass has a second drywell, Drywell #2, which drains roof stormwater from the northern, non-glass production buildings at the Bullseye facility. The roof stormwater data from the northern Bullseye building rooftops can be used as a worst case analog for rooftop conditions from non-Bullseye neighborhood buildings. The low-level concentrations of contaminants found in the northeast Drywell #2 sediment and stormwater stand in contrast to the high levels of contaminants found in sediment and stormwater from southwest corner Drywell #1, which received roof stormwater from the glass furnace building. Accordingly, DEQ has determined that no offsite work beyond what is described in the approved work plan is necessary.

Drywell #1 (SW corner) is slated for remediation and groundwater monitoring. Drywell #2 (NE corner) will remain in service.

Comments below were received at public meeting on Sept. 7, 2017 as well as in a follow-up email sent on Sept. 9, 2017. Comments are paraphrased.

15. **Comment**: please implement best management practices for:
    - Stockpile storage and managing materials to prevent runoff,
    - Dust monitoring and dust control,
    - Excavation stability.

    DEQ Response: DEQ will be onsite during excavation and sampling work and best management practices will be implemented to prevent off-site runoff. Dust control will be implemented but no dust monitoring will be required. See responses #4 and #5 above regarding shoring and dust.

16. **Comment**: Please communicate impacts to business and residential neighbors at every step of the process. The Children's Creative Learning Center (CLCC) and Fred Meyer were specifically requested to be notified by the commenter.

    DEQ Response: DEQ will require the Bullseye Glass Company to contact neighbors immediately adjacent to the south and west corner of the Bullseye facility regarding the possible presence of any unregistered wells (see comment response number 2 above) and will notify these neighbors about the planned removal work. Bullseye will also contact and notify the CCLC and Fred Meyer prior to construction.

17. **Comment**: Complete a door to door well search for unregistered wells.

    DEQ response: DEQ will require Bullseye to contact neighbors immediately adjacent to the locality of facility (LOF) as defined in OAR 340-122- 0115 (35) to identify the potential presence of any unregistered wells and document that these neighbors were notified of scheduled drywell remediation work.

18**. Comment**: Provide specific language in the work plan for any potential shoring of the excavation site.

    DEQ response: DEQ will require that the work plan be updated to include a discussion of the need for shoring in the excavation. DEQ understands that shoring is unlikely to be used due to logistical and physical constraints and no one will be entering the excavation requiring this level of protection.

19. **Comment**: Please include dust control measures as part of the removal action.

DEQ response: DEQ will require appropriate dust control measures to be included in the work plan. These may include misting, if the weather is dry. In addition, dump trucks and container boxes, whichever is used, will be covered.

20**. Comment**: Please include the bill of lading and associated documentation of disposal in the project documentation.

DEQ response: DEQ will require that documentation of soil transportation and disposal to be included as an appendix to the removal action construction completion report, which will be posted on the project webpage, when available.

21. **Comment**: Please use equipment with clean diesel engines and do not idle the equipment unless necessary.

DEQ response: DEQ has a policy on "green remediation" under which use of cleaner engines could be considered a relevant element. Under this policy DEQ will "…promote, support and implement more sustainable practices…" Accordingly, DEQ will recommend but cannot require the use of clean diesel engines and limitations on idling. DEQ will recommend that Bullseye consider use of clean diesel engines and limitations on idling during the removal action.

22. **Comment**: For the Portland Bureau of Environmental Services- Please perform sewer sampling (2x/year) at "worst case" conditions.

DEQ Response: DEQ is confident in the City of Portland Bureau of Environmental Services Industrial Permitting Section and its permitting of Bullseye glass furnace roof stormwater drainage to the municipal combined sewer. Glass furnace roof stormwater sampling conducted to date has met the requirements of a qualifying rainfall event as specified by the Bullseye Alternative Discharge Control Mechanism. Questions on this matter can be directed to Dan Parnell, Bureau of Environmental Services Industrial Permitting Manager.

23. **Comment**: Explain why groundwater monitoring does not include a full metals scan for each groundwater sample.

DEQ Response: Previous investigation work completed and documented in the June 2017 UIC Facility Investigation Report show that the impacts to groundwater are limited to cadmium and selenium, with the potential for lead. Cadmium impacts were demonstrated to be limited to groundwater directly beneath the drywell. Selenium and lead analyses in groundwater samples are included in the scope of work for the five proposed monitoring wells.

Note:
Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.