March 12, 2026

Brian Church
Oregon Department of Environmental Quality
Northwest Region Environmental Cleanup
Portland, Oregon

SUBJECT: Response to DEQ's January 9, 2025, Letter Documenting DEQ Comments on M. Carter Commons Documents – Soil Gas Memo, Contaminated Media Management Plan, and 90% Construction Documents.
ECSI #6702

Dear Mr. Church:

This letter is the formal response to DEQ's comments in its January 9, 2025, letter to Northwest Housing Alternatives (NHA) as referenced above. Coles + Betts Environmental Consulting (C+BEC) has prepared this response on behalf of NHA. DEQ's comments are related to the following documents:

- Request to Close Soil Gas Monitoring Wells and Approve Completion of PPA Measure Item 4 (hereafter called the "Soil Gas Memo")
- Contaminated Media Management Plan (CMMP)
- 90% Construction Documents, Drawings M001 through M702

DEQ's comments are listed below, with C+BEC's response in italics below the DEQ comment(s).

Soil Gas Memo

1. DEQ is in general agreement with the conclusions of the memo and supports closure of the existing soil gas wells, in which methane was not measured at concerning levels.

   Thank you for supporting closure of the existing soil gas wells.

2. Based on the number, distribution, and depths of samples and observed composition of landfill materials, DEQ believes that pre-construction sampling adequately shows that methane is unlikely to be a concern for the former landfill portion of the site.
   a. However, because construction can affect soil gas conditions, DEQ requests that confirmation sampling be incorporated into post-construction monitoring to show whether the radon system is collecting methane. At least one round of sampling for methane should occur approximately 30 days after completion of construction.

   b. The need for monitoring for other chemicals outside of the landfill footprint will depend on the outcome of post-demolition sampling per the Prospective Purchaser Agreement Scope of Work (PPA SOW).

The post-construction sampling and monitoring for methane within the landfill footprint and for other chemicals of concern outside the landfill footprint were discussed in a January 28, 2026, meeting with NHA and DEQ. DEQ indicated in a January 29, 2026, e-mail to C+BEC that the chemicals of interest outside the landfill include the full-list volatile organic compounds (VOCs) and diesel- and gasoline-range petroleum hydrocarbons. DEQ originally requested semi-VOCs (SVOCs) analysis in their January 21, 2025, letter, and eliminated the SVOCs analyses in the January 29, 2026, e-mail correspondence. The post-construction confirmation sampling and monitoring will be completed per the forthcoming Performance Monitoring Plan (PMP).

3. Please provide photographs of the landfill gas meter collecting data, if any exist.

4. Please provide a table in the memo summarizing relevant field measurements rather than presenting them only as a narrative or in attachments.

5. Figure 1 presents the originally "proposed" monitoring locations. Please provide the actual locations if different, otherwise revise the figure title to clarify.

6. Please remove superfluous advertisements in attached weather website tables and figures.

Comments 3 through 6 were addressed in the DEQ-approved Soil Gas Memo, dated January 14, 2025.

CMMP

7. General
    a. Please provide a discussion or table in the CMMP of field and laboratory methods that will be used to chemically analyze unanticipated contaminated media.

    b. Please specify how media will be classified as "contaminated" (e.g., which chemical screening levels would be used).

8. In Section 5.1, please revise "chemicals of concern" to "chemicals of potential concern". The latter terminology is more appropriate because the site is insufficiently characterized.

9. Section 9.1 – Text in Sections 9.1 and 12 appears to be contradictory with regard to disposal of "contaminated materials". Please clarify in both sections that, unless disposed of on-site with the prior approval of DEQ, contaminated materials are required to be disposed of off-site at a permitted solid-waste landfill.

10. Section 9.2
    a. A photoionization detector reading of 50 ppm (of volatile organic compounds [VOCs]) is suggested as a threshold for defining "contaminated soil". Please provide justification for this value. Not all contaminants of potential concern for the site are

volatile, so other analytical methods may be required to adequately evaluate contamination.

b. If obvious, unexpected contamination is discovered in the hoist, sump, and/or HOT areas, then these wastes should be characterized analytically prior to disposal or should be disposed of as hazardous waste (Subtitle C disposal) rather than normal waste (Subtitle D).

c. Decisions of whether to analyze soil and how to dispose of soil should not be made solely by NHA and their consultant(s); it should be made in coordination with DEQ, therefore discovery of contamination should trigger DEQ notification.

d. In addition to placement of plastic sheeting and being covered, stockpiles should be placed in berms to prevent runoff.

11. Section 9.3 – Treated contaminated fluids should not be disposed of on the ground, even if tested and found to be below the most stringent of risk-based concentrations. Ground disposal of treated fluids requires an approved DEQ Water Quality permit.

12. Section 11 – Include a DEQ contact (Brian Church/Project Manager) to be notified as appropriate. For example, see Comment #10c.

13. Figure 7 – DEQ notes that this new figure clarifies that the hoist and sump are along the border of the outdoor "plaza" area, so will potentially be in an uncapped area. Adding a thin soil cap with geotextile would be insufficient to block soil vapor to outdoor air, if VOCs are present. Please add discussion regarding how this area would be addressed, if necessary, based on the investigation findings.

Comments 7 through 13 were addressed in the DEQ-approved CMMP, dated January 18, 2025.

90% Construction Documents

14. DEQ provides guidance for constructing a vapor mitigation system in our draft Vapor Intrusion (VI) guidance (DEQ 2024).[1] Several of our recommendations stem from that guidance. Note that, while soil gas/vapor and radon mitigation methods and technologies share similarities, health hazards attributed to these different gases vary substantially. Consequently, standards and practices in mitigating exposure vary depending on the contaminant hazard and reliability in mitigation techniques to interrupt the exposure pathway. For example, methane mitigation standards are generally conservative and comprehensive due to the hazards posed. VI mitigation systems for VOCs are typically designed, constructed, inspected, and verified more thoroughly than radon systems.

[1] DEQ. 2024. Draft Guidance for Assessing and Remediating Vapor Intrusion into Buildings. Updated March 2024. Online: https://www.oregon.gov/deq/Hazards-and-Cleanup/Documents/VI-Guidance.pdf

15. Please clarify the design of the radon system piping and sub-slab material. Specifically:
    a. Please confirm whether horizontal radon vent piping will be placed between 5 and 50 feet from exterior walls.

    b. Please clarify how the gravel trench will be connected to the subsurface; will it, for example, be trenched through insulation material down to the rock base?

    c. Please clarify where sub-slab insulation material will be placed. It is shown in A801 but not M502.

    d. Please confirm that gas and vapor collected in the system will be vented above the roofline and at least 10 ft from windows and HVAC intakes.

16. To allow for monitoring of the radon system, please add a monitoring point on the vertical riser or, alternatively, keep the riser accessible for installation of monitoring points in the future. Monitoring of the system is necessary to show whether it is operating as expected (i.e., adequately pulling air and collecting methane and VOCs, if present).

17. DEQ has several recommendations for system enhancements that may be more cost effective to implement during construction instead of post construction if additional mitigation measures are needed:
    a. Piping could be extended over a larger area to increase the influence of the radon fan. If added, horizontal piping is typically placed within 25 to 50 ft of each other (i.e., depending on the site-specific radius of influence) and >5 ft from the building exterior.

    b. Consider installing a fan with higher flow rate capacity. The provided specifications indicate a radon fan with maximum 200 cfm flow rate, however this is the minimum flow rate to meet Oregon building code (OSSC 1811.3.3) for radon. Also, a larger blower may be needed if additional submembrane vent piping is installed (per Comment #17a).

Responses to Comments 14 – 17 are below:

DEQ was provided a link to the latest construction plans set that includes upgrades to the building's radon system for potential vapor mitigation. Components of that system include a sealed vapor barrier (20 mil) under the building footprint, sub-slab vapor-collection network, and a 200cubic feet per minute (CFM) fan. The vapor barrier and sub-slab vapor-collection network was installed according to the manufacturer's recommendation and by qualified contractors. The plans show the radon system piping is located below insulation and between 5 and 50 feet from exterior walls (Sheet M200) and sub-slab materials. The radon piping does not trench through insulation (Sheet A80). The top of the radon piping's vertical riser is above the roofline and at least 10 feet from windows and HVAC intakes.

The building's radon system will be active and will operate continuously. The radon system will be maintained per the building's operations and monitoring plan.

The building has a central HVAC system and is designed to meet current Oregon Energy requirements with a planned maximum of 17,000 CFM air flow rate. The interior of the building is expected to be under positive pressure. Building tightness tests will be completed in March 2026 to determine that the building meets air tightness requirements of the Oregon Energy code. HVAC commissioning will balance the HVAC system to ensure there are no pressure differentials in the building and that the system is operating as designed. The air changes per hour for fresh air/exhaust per Oregon Energy code will also be confirmed. C+BEC will confirm with DEQ that these tests were completed.

The radon system's vertical riser is accessible via the roof for sampling. Additional performance monitoring, if necessary, will be conducting using the monitoring point located on the roof. Two sub-slab vapor points were also installed, one above the landfill area in the southern portion of the building and one outside the landfill area in the northern portion of the building. These vapor points and radon stack will be the future monitoring points for methane and contaminants of interest (VOCs and diesel- and gasoline-range petroleum hydrocarbons). The forthcoming PMP contains the monitoring details for landfill gas and contaminants of interest.

The forthcoming performance monitoring results will determine the need for, or duration of, contingent monitoring with radon mitigation system operations and maintenance, what ongoing site restrictions might be included in an Easement and Equitable Servitude (EES), and/or whether a Remedial Action Plan (RAP) incorporating Section 6.4 of DEQ's 2024 draft vapor intrusion guidance and an EES per the PPA's Consent Order, Exhibit C: Scope of Work, Item 5 are required. In summary, DEQ's January 29, 2026, e-mail to C+BEC noted three possible outcomes for the project pending the performance monitoring results:

- *<u>Outcome 1</u>: Performance monitoring shows that the system is operating as designed, and there are acceptable chemical levels in soil gas after the initial sampling events. In this case, DEQ would likely determine that the mitigation system is not needed; the EES would be finalized without language referencing the system, and a revised Closeout Report could be approved and a COC issued.*

- *<u>Outcome 2</u>: Performance monitoring shows that the system is operating as designed, but there are unacceptable chemical levels in soil gas. In this case, contingent monitoring and O&M would be required, and the EES would include an associated Equitable Servitude. The Closeout Report would still be approvable and a COC noting the need for ongoing (e.g.,*

annual) monitoring could be issued. The servitude could be removed later if monitoring results show the system is no longer needed.

- *<u>Outcome 3</u>: Performance monitoring shows that the system doesn't work as designed, therefore the remedy would not adequately protect human health. Further work would be required prior to closure; that work would focus first on improving system performance, then on collecting reliable soil gas data. DEQ believes there is a low probability for this scenario, but it is included for completeness.*

If there are any comments or questions, please contact the undersigned.

Sincerely,

Jill S. Betts, R.G.
Principal

Cc:
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