



Oregon

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October 6, 2025,

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Subject: DEQ Comments on the Revised Feasibility Study Report
Irwin Hodson Site
Portland, Oregon
ECSI # 6399

Heather Brown,

The Oregon Department of Environmental Quality (DEQ) has prepared this letter for the Irwin Hodson Company Site (Site), which conducts cleanup work under a voluntary cleanup agreement. This letter provides comments for the *September 3, 2025, Revised Feasibility Study Report* (FFS) prepared by EVREN Northwest, Inc. (ENW) on your behalf.

DEQ had previously commented that volatile organic compounds (VOCs), particularly trichloroethene (TCE), have rebounded to elevated concentrations in sub-slab soil vapor following excavation activities in 2021 to remove TCE-impacted soil. Elevated concentrations above risk-based concentrations, including hot spot levels, indicate that VOC source(s) are present that continue to pose unacceptable vapor intrusion risks. Oregon environmental cleanup law and regulations require the treatment or excavation of hot spots to the extent feasible. DEQ requested the FFS to evaluate viable remedies to treat hot spots of contamination to the extent feasible.

Our comments on the FFS are provided below.

General Comments

The FS continues to assert multiple inaccuracies. Several DEQ comments on the draft FS remain unaddressed/unresolved.

The Feasibility Study includes two separate removal action alternatives that involve soil vapor extraction (SVE). Alternative 3 involves upgrading the blower of the existing sub-slab depressurization (SSD) system, and Alternative 4 includes additional soil vapor extraction wells. As DEQ previously commented, "DEQ does not agree that upgraded blowers on the existing SSD system would result in an effective SVE configuration. Additional vapor extraction well(s) that target the sub-slab vapor highly concentrated hot spots are necessary." Therefore, we do not believe it is appropriate to consider Alternatives 3 and 4 separately. DEQ approves SVE as the appropriate removal action to address sub-slab vapor hot spots. The necessary SVE configuration (e.g., extraction well(s) locations and screen intervals, blower size) must be determined in an SVE Work Plan that considers the ability to effectively remove contaminant mass within the various soils below the Irwin Hodson building. The SVE configuration must consider the significant differences in the soil texture and permeability

between pea gravel backfill and the native/non-native materials that were not previously excavated in 2021. DEQ remains concerned that relying solely on the existing SSD vapor collection piping, situated within pea gravel backfill, will fail to exert an adequate zone of influence (ZOI) outside of the pea gravel.

The Feasibility Study does not correctly identify hot spots. As stated in the *Guidance for Assessing and Remediating Vapor Intrusion into Buildings* and consistent with DEQ's previous direction, hot spot identification should consider both chronic and acute risk-based concentrations. The acute hot spot threshold for TCE is 2,100 µg/m³. In 2024, vapor hot spots were measured in two locations (SUB14 and CT17). The SVE Work Plan must correctly identify and consider a vapor extraction approach to address the full extent of the vapor hot spot(s).

Specific Comments

1) **Section 2.4.4, Alternative 4 – Implementation of SVE with an additional SVE Well.** DEQ has the following comments:

- a) It is unclear what is intended by the statement that the SSD system has an effective ZOI, which has not been provided, and as noted, the source(s) have not been well delineated. Note that during the soil removal, TCE continued to be detected in soil with depth and side walls in areas, which had to be left in place when excavation could no longer be conducted safely due to structural considerations.
- b) DEQ agrees that there are limitations for the construction of an SVE well in proximity to the gravel backfill area. However, vertical/angled well locations and depths can be designed with this in mind. As proposed, an SVE well located outside the building may draw soil vapor away from SUB14 (and potentially other sources) towards the property boundary, which is generally not recommended. An estimated ZOI will be helpful to better understand the recommended distance from the backfill area to prevent short-circuiting.
- c) There is no rationale for one vertical well. The SVE system should not be limited to one well but determined during design to provide adequate coverage and treatment in a reasonable timeframe. A SVE work plan should identify potential SVE well location(s), including estimated ZOIs based on site-specific conditions/data or alternatively conservative assumptions.
- d) For context, backfilling the soil removal area with gravel was not shared with DEQ prior to construction, and consequently, we were not given an opportunity to provide feedback. This came to my/our attention during a site visit, which raised potential concerns with Evren (Paul T) that backfilling with coarse material could negatively impact mitigation system performance (e.g., short-circuiting, creating a preferential pathway, impacts to sub-slab differential pressure, and corresponding mitigation performance. Similarly, this could limit the ZOI of SVE of the horizontal legs beyond the backfill area and potentially other preferential pathways below the building.

Section 2.8.1, Evaluation of Reliably Containable. This section assesses the ZOI of the existing SSD system. DEQ has the following comments:

- a) Differential pressure measurements are heavily affected by the presence of pea gravel. The pea gravel influence is notable at the SUB22/SG14, SUB17, and CT11 differential pressures (all exceed 1 inch of water), and the significantly lower differential pressures measured in the

adjacent areas outside of the pea gravel backfill. This observation shows that relying on the SSD system for SVE will not likely result in enough pore-volume exchanges to meaningfully treat the TCE hot spot and supports the need to include additional vapor extraction wells targeting the non-excavated area near the hot spots.

- b) The ZOI assessment does not include sub-slab vapor pressure differential measurements near SUB14, and the ZOI near the hot spot remains uncertain.

Section 3.2.2, Alternative 2 – Existing Active SSD. This alternative would not address the treatment of hot spots and is not in agreement with the conclusions provided here or Table 6.

Section 3.4.4, Alternative 4 – Implementation of an SVE System with an Additional SVE Well. DEQ has the following comments:

- c) While active SSD system results in a measurable zone of influence, it is not clear whether it results in an adequate number of pore-volume exchanges to effectively remove the soil vapor hot spot.
- d) The FFS does not present sufficient rationale to inform the location of an additional soil vapor extraction well(s). The location(s) and number of vapor extraction wells should be developed in a forthcoming SVE Work Plan.

Section 5.1, Residual Risk Assessment. This section assumes a one-year SVE treatment period followed by conversion of the SVE system back into an active SSD system. The actual SVE duration will be based on performance monitoring data.

Section 4.0, Remedial Action Alternatives Analysis. DEQ is not in agreement with the comparative analysis, including the Table 4-1 summary and ranking, and preferred remedy carried forward. DEQ disagrees that Alternative 3 would be very effective as proposed, but rather that there's considerable uncertainty in treating hot spots. In contrast, Alternative 4, using vertical (or angled) wells, provides greater flexibility in design and reliability to treat hot spots. Note there is allowance for additional cost to address hot spots.

Table 6, Detailed Analysis of Alternatives. In contrast to what is presented, Alternative 3 contains considerable uncertainty in terms of effectiveness and ability to address hot spots. Alternative 4, using a vertical well, has a greater potential to be effective and treat hot spots. Both alternatives will need to account for a rebound assessment period. While we generally agree that Alternative 3 would be easier to implement as it relies on existing infrastructure, Alternatives 3 and 4 generally contain the same implementation risks. Additional cost is warranted to address hot spots, and overall, there is greater confidence to design an SVE system, resembling something close to that proposed in Alternative 4, to adequately address hot spots.

Section 5.0, Recommended Remedial Action Alternative. DEQ has low confidence that the existing system with a blower upgrade will be sufficient to treat hot spot sources and therefore does not concur that the existing SSD system is well-suited as the recommended remedy.

DEQ requests the following.

Provide a SVE Work Plan that includes a SVE system design that can reasonably and reliably treat the area of hot spots and achieve treatment objectives. Provide a schedule for the submittal of the work plan within 30 days of the receipt of this letter.

Contact me at (503) 229-6932 or Wesley.thomos@deq.oregon.gov if you have questions.

Sincerely,
Wesley Thomas, PE

Project Engineer

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