May 14, 2025

Washington State Department of Ecology
Southwest Regional Office
Toxics Cleanup Program
P.O. Box 47775
Olympia, Washington 98504-7775

Attention: Aaren Fiedler, LG – Site Manager

RE: ECI review of Ecology's March 12, 2025 "Further Action" Opinion Letter - Canyon Town Center LLC
Facility/Site ID: 15628; Cleanup Site ID: 17057; VCP Project ID: SW1839

Dear Mr. Fiedler:

ECI has received the March 12, 2025 "Further Action Opinion Letter" for the Canyon Town Center LLC site located at 17201 Canyon Road East in Puyallup, Washington (Facility/Site ID: 15628; Cleanup Site ID: 17057; VCP Project ID: SW1839). We have reviewed that letter. There are several comments in your letter that we agree with and several comments that we disagree with and/or would like further clarification from you on. We have also identified couple of errors on our part that are being corrected. These errors may have led to possible misunderstandings on your part.

Therefore, while we understand the determination that further action is required at the site, we respectfully request that Ecology review and correct several inaccuracies contained in the Further Action letter, as outlined in detail below.

ECI COMMENTS

Characterizing the Site

Your opinion letter indicated that:

> *"Most investigations following the RN&S activities were focused on the idea that groundwater and all other contamination remaining on the Canyon Town Center Site originated from the Looker & Associates Site or their activities on the Canyon Town Center Site properties. However, based on the Partner Engineering and Science, Inc. Phase II Subsurface Investigation Report (April 26, 2023), it appears that an additional source of groundwater contamination was located in the northern central area of the Canyon Town Center Site."*

ECI disagrees that the source of the contaminated groundwater samples identified by Partner in 2023 is from a source on the Canyon Road Property. The groundwater sample from Partner boring B-5 was a grab sample obtained from a temporary well in an open boring at the same depth (10 feet bgs) where a soil sample showed 913 mg/kg ORO, likely resulting in a non-representative, silt-contaminated groundwater sample. Since Partner did not analyze the sample using a silica gel cleanup procedure, it is likely that the

Partner sample is reporting the organic material observed by Terra Associates in its 2023 draft geotechnical report.

The presence of high natural organics at B-5 is further substantiated by a total organic carbon (TOC) analysis and DRO/ ORO sample collected by ECI from a clean upgradient well (MW11), which revealed a natural organic content in the groundwater of 2,170 µg/L, which is significantly higher than the 700 µg/L TOC for naturally occurring groundwater.[1]

In contrast, ECI's well in the same general location as B-5 (MW-16) detected diesel-range Organics (DRO) at 290x µg/L, significantly less than what Partner found and below the MTCA Method A Cleanup Level. Additionally, the other monitoring wells in the vicinity of the Partner boring B-5 have not detected ORO above the laboratory PQLs.

ECI Test Pit Sample as Potential Source of Groundwater Contamination

Your letter contains an inaccuracy that may have stemmed from an error in one of our tables and will be important to correct. Specifically, your letter indicated that, during ECI investigations on the Site, the

> *"…investigation identified a possible TPH-D/O source in soil (sample TP1-8) at a depth of 18 feet below ground surface (bgs) that may have been the cause of elevated groundwater concentration. However, subsequent groundwater sampling has not replicated the elevated groundwater concentrations observed previously. ECI's regular groundwater sampling appears to show a potential groundwater plume migrating from the Looker & Associates Site onto the Canyon Town Center properties."*

It is incorrect that the TP 1-8 soil sample was collected from a depth of 18 feet bgs. This inaccuracy likely stemmed from an error in ECI's analytical data table (*Table 8: Summary of Test Pit Soil Analytical Results*) in the ECI December 5, 2023 Remedial Investigation (RI) Report, which mistakenly shows a depth of 18 feet bgs. In fact, the test pit excavation was terminated at approximately 16 feet bgs. As its name suggests, sample TP1-8 was collected from a depth of 8 feet bgs. The analytical tables will be corrected to show the correct depth of the sample.

Except for wells MW11, MW12, MW17, and MW18, which are near the eastern and southern property boundaries, the depth to groundwater at the site is generally found at depths of 18 to 30 feet below the tops of the well casings. This is significantly deeper than the sample TP1-8. Given that the soil sample was from a depth of 8 feet bgs and that the groundwater in the vicinity of the test pit has not revealed concentrations of ORO and only low concentrations of DRO, it is ECI's opinion that the ORO observed in sample TP1-8 is not leaching to the groundwater.

In addition, since asphalt and other organic materials were observed in the test pit and in samples collected throughout the property during the 2023 Terra Associates geotechnical investigation, it is also ECI's opinion that the ORO detected in the sample TP1-8 is likely asphalt and/or organic matter either naturally occurring or associated with the fill material on the site. Small quantities of crushed asphalt that looks like sand can cause a detection of ORO.

[1] E. M. Thurman, "Organic Geochemistry of Natural Waters" (2012).

Submittal of Analytical data to the Environmental Information Management (EIM) system

The Ecology "Further Action" letter indicates that ECI needs to submit all of the analytical data for the site into the Ecology Environmental Information Management (EIM) database and that reports need to be submitted in both written and electronic formats as required by WAC 173-340-840.

ECI realizes the regulations require submittal of the reports both in written and electronic formats and the data submitted to the EIM database. ECI has started on entering data into the EIM database and our records show that data through June 2024 may have been submitted but has not been reviewed by Ecology. Ecology has indicated that "*the EIM team is currently experiencing long delays in finalizing the acceptance of data submittals*." We will be checking on this and will be submitting the required data that is not already in the EIM database.

Soil Contamination and the Soil-to-Groundwater Pathway

In your "Further Action" letter you stated:

> *"Because of its depth at 18 feet bgs, the TPH-D/O located at sample TP1-8 is outside the soil direct contact and terrestrial ecological evaluation (TEE) points of compliance of 15 feet bgs...*
>
> *…The 15-foot point of compliance does not apply to the soil-to-groundwater pathway. It will need to be demonstrated that there is no groundwater contamination resulting from this soil contamination. This can be done by showing that groundwater is not affected through multiple quarters of groundwater sampling or by demonstrating that groundwater in the area of the contamination never comes into contact with the contaminated soil. Typically, this demonstration is done through four consecutive quarters of groundwater monitoring. However, additional sampling may be necessary to clearly distinguish if any contamination is coming from the Canyon Town Center Site and if the contamination is migrating from the Looker & Associates Site…*
>
> *Ecology understands that this contamination is suggested to result from buried asphalt reported in sample TP1-8. Buried debris, regardless of its source, and also located outside the direct contact points of compliance, would still need to be remediated if it is causing an exceedance of hazardous substances in groundwater through the soil-to-groundwater pathway."*

As discussed above in the "*ECI Test Pit Sample as Potential Source of Groundwater Contamination*" section of this letter, we explained that the depth of the test pit sample TP1-8 was misstated on the data table and was actually 8 feet bgs. In that section, we also indicated that the depth to water in the wells near the location of that sample have been between 18 to 30 feet below the tops of the well casings and that analytical results from those wells have not revealed concentrations of ORO and only low concentrations of DRO. Therefore, we believe that the soil to groundwater pathway from this location is not complete.

We also realize that the sample is located within the zone of direct contact, less than 15 feet bgs. However, as discussed in the section "*ECI Test Pit Sample as Potential Source of Groundwater Contamination*", we

believe that the ORO detected in that sample represents asphalt debris found in the test pit and well as found throughout the entire Canyon Town Center Site.

Because an FS and DCA for the Site would likely show that excavation of the entire site to 15 feet bgs would not be feasible and that the Site will be covered with buildings and paved parking, ECI is anticipating the need for an Environmental Covenant restricting the excavation at the site.

Establishing Cleanup Levels

In your "Further Action" letter, you state:

> *"In early investigations, hazardous substances were listed as having no soil CUL established. That is not correct for Method A or Method B CULs. When a hazardous substance does not have an established Method A CUL or cannot have a Method B CUL calculated using the equations included in WAC 173-340-740, the CUL is either the greater of the laboratory practical quantitation limit (PQL) or the natural background concentration."*

You go on to say:

> *"Because some of these substances had detected concentrations, they may have exceeded the laboratory PQL and would therefore be exceedances of the MTCA Method A soil CUL. These exceedances will need to be remediated under a Method A cleanup, or the Site will need to be evaluated using Method B CULs."*

ECI would like to point out that the analytical data table for the historical soil data in the December 2023 RI report (*Table 6: Summary of Historical Soil Analytical Results*) and for the data table for the historical groundwater data (*Table 9: Summary of Historical Groundwater Analytical Results*) had errors when identifying cleanup levels. Each of the chemicals in those data tables have a Method A or Metod B Cleanup level listed in the Ecology Cleanup Levels and Risk Calculation (CLARC) tables. Those levels were used as screening levels during the investigations at the site.

In addition, a couple of errors were identified in the ECI soil gas data table (*Table 12: Summary of ECI Soil Gas Sample Analytical Results*). Each of the data tables will be updated with the correct levels from the CLARC tables.

In this section of your "Further Action" letter, you request that ECI provide:

> *"…provide isopleth concentration maps and cross-sections that show the current distribution of hazardous substances at the Site."*

These maps and cross-sections will be part of the final RI report prepared for the Site.

Soil Gas and Vapor Mitigation

The "Further Action" letter states:

> *"ECI claims that some of the VOCs present in soil gas are the result of "false positives" or "high levels of certain polar compounds" from regional activities. If VOCs observed on the*

> *Site are resulting from regional activities, that would need to be demonstrated to Ecology…"*

ECI would like to clarify our remarks in the December 2024 RI report, as they may have led to some confusion in Ecology's statements above.

ECI indicated in the RI report that total Air-Phase Hydrocarbons (APH) and benzene were detected above the soil gas screening levels in numerous samples and would necessitate vapor mitigation measures in any building on the Site. ECI also said that four additional compounds were identified in the soil gas samples. Those compounds were 1,3-butadiene, acrolein, chloroform and bromodichloromethane. ECI did not indicate that these were from regional activities or were background compounds. What ECI meant was that sampling and/or analytical issues caused the detection of these compounds.

According to a Vapor Pin® January 2020 Vapor Intrusion News[2] and *a Haley & Aldrich Vapor Intrusion White Paper*[3]:

> *"**1,3-butadiene** is sometimes detected and invariably its presence is associated with direct push sampling through a tight formation. It is believed that the friction from drilling heats up O-rings or other components and results in emissions of 1,3-butadiene"*
>
> *"**Acrolein** is sometimes detected in soil vapor samples, and it too can be a sampling artifact."*
>
> *"If acrolein is detected in soil vapor, it may be formed endogenously in the canisters and can therefore be a sampling artifact; its steady-state concentration in soil vapor is essentially zero."*
>
> *"If 1,3-butadiene or acrolein are detected in soil gas samples, they generally should be assumed to be false positives. These two compounds should be viewed very skeptically in any VI evaluation."*

The Vapor Pin® Vapor Intrusion News report goes on to say that chloroform is:

> *"…a trihalomethane found in chlorinated municipal water supplies."*
>
> *"Chloroform is ubiquitous in indoor air and often found in soil gas samples due to irrigation using chlorinated water, leaks from water lines, etc. Therefore, the evaluation of potential vapor intrusion for chloroform is more difficult than for many other VOCs."*

Links to the reports mentioned above are in the footnotes in this section.

Points of Compliance

Point of Compliance for Soil
Ecology indicated that"

[2] Vapor Pin®, 2020, "*Problematic Compounds in Vapor Intrusion Investigations*"
https://www.vaporpin.com/august-radon-news/problematiccompounds/

[3] Haley & Aldrich, 2022, Vapor Intrusion White Paper: "*Steady-State Considerations in Vapor Intrusion Study Design*"
https://www.haleyaldrich.com/wp-content/uploads/2022/03/Steady-state-considerations-in-vapor-intrusion-study-design.pdf

> *"ECI has proposed using an overall point of compliance for soil encompassing both direct contact and protection of groundwater. Ecology does not concur with this methodology as it would constitute a conditional point of compliance for the protection of groundwater which is not permitted under WAC 173-340-740(6)."*

ECI may not have been clear in our discussion of the point of compliance for soil in our December 2023 RI report and therefore, Ecology mis-interpreted the soil point of compliance proposed for the site.

ECI was proposing the point of compliance for soil to be for direct contact which is throughout the Site from ground surface to fifteen feet below the ground surface. This is because with the exception of one sample above 15 feet bgs (which as previously discussed, may be an anomaly due to potential inclusion of asphalt in the soil sample), the analytical results for the soil samples collected throughout the site did not exceed the laboratory practical quantitation limits (PQLs) or the MTCA Method A Cleanup Level for the contaminants of concern.

Although the groundwater beneath the site is contaminated above the MTCA Cleanup Levels, the analytical results for the soils did not exceed the MTCA Method A Cleanup Levels. As a result, soil is not a source of contamination to the groundwater. Therefore, the soil point of compliance for the protection of groundwater is not applicable.

Point of Compliance for Air

Ecology pointed out that a point of compliance was not proposed for air. Not including a point of compliance for Air in the RI report was an oversight by ECI. Because the Site will be covered by pavement and buildings, the point of compliance will be the indoor air throughout the buildings on the site.

CLOSING

ECI appreciates your review and comments on the work performed at the Canyon Town Center LLC Site via the "Further Action" letter. Based on the clarifications and corrections detailed above, we respectfully request that Ecology issue a revised Further Action determination letter that maintains the overall conclusion while accurately reflecting the site conditions and investigation results.

ECI understands that Canyon Town Center LLC is changing consultants. If you have any questions, please, contact the new consultant. We would be glad to answer any questions through the new consultant.

Sincerely,
ECI | Environmental Consulting

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Sr. Hydrogeologist

Cc: Pat Austin – Site Owner
Louis Russell – Cascadia Law Group
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