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April 16, 2020

Scott Hooton  
Port of Tacoma  
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Tacoma, WA 98401-1837  
[shooton@portoftacoma.com](mailto:shooton@portoftacoma.com)

**Re: Comments on Post-Construction Vapor Intrusion Assessment**

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAFA)
- **Site Address:** 1514 Taylor Way E, Tacoma, Pierce County, WA
- **Facility/Site ID:** 1403183
- **Cleanup Site ID:** 4692
- **Agreed Order No.:** DE13921

Dear Scott Hooton:

Thank you for submitting the *Supplemental Post-Construction Vapor Intrusion Assessment* (report)<sup>1</sup> for our review. The Department of Ecology (Ecology) has the following comments on the report:

1. Ecology does not agree with the report's conclusion that no further assessment and/or mitigation is needed for vapor intrusion for the following reasons:
  - a. **Methane:** Methane was measured at concentrations up to 27.2% beneath Building A (VP-8) and 4.2% beneath Building B (VP-11). These methane concentrations are much higher and are at a shallower depth than the initial measurements in 2016 and 2018 (1.4% maximum).<sup>2</sup> The report states that these concentrations are not of concern because they are below the ASTM (2016) methane action level of <30% and the cross-slab differential pressure criteria of <500 Pascals (Pa).<sup>3</sup>

<sup>1</sup> *Supplemental Post-Construction Vapor Intrusion Assessment, 1514 Taylor Way Development, Tacoma, Washington*. Prepared by Floyd|Snider, dated March 10, 2020.

<sup>2</sup> *Summary of Soil Vapor Survey Data and Vapor Mitigation Plan for the 1514 Taylor Way Site*. Prepared by Floyd|Snider, dated June 8, 2018.

<sup>3</sup> *Standard Guide for Evaluating Potential Hazard as a Result of Methane in the Vadose Zone*. E2993-16, ASTM International, 2016

However, this pressure criterion is based on a measurement depth of 1.5 meters (4.9 feet). As noted by ASTM (2016), for shallower measurements, the potential for temporal variability warrants further consideration. ASTM (2016) also states that any capping of the ground surface can impede the natural venting of soil gas. Therefore, it is possible that methane concentrations beneath the buildings are due to the lack of venting and will continue to increase due to the extensive capping from buildings and/or pavement. As a result, **one** of the following actions shall be taken:

- i. **Passive Vapor Mitigation**: The passive vapor mitigation system shall be completed at both buildings so that it is operational. The system is not currently operable, mainly because aboveground riser vents are stubbed off and capped 2 to 3 feet above floor level.

Quarterly methane monitoring from the sub-slab monitoring points shall be performed for the first year after operation begins. At the end of the first year of monitoring, Ecology shall evaluate the data and determine an appropriate monitoring frequency.

If the passive system is not adequate to reduce methane concentrations, then conversion to an active venting system (with the installation of an inline blower in one or more vertical risers) shall be made.

- ii. **Monthly Methane Monitoring**: Monthly measurements of methane concentrations shall be made from the sub-slab monitoring points beneath both buildings and reported to Ecology. Ecology will review the data to see if concentrations are continuing to increase and/or the spatial extent of soil gas with elevated methane is increasing and/or if these concentrations require additional indoor air measurements and/or operation of the passive or active vapor mitigation system.

Please inform Ecology **within 14 days** of the date of this letter which of the above two actions you propose to perform and the schedule for performing this work.

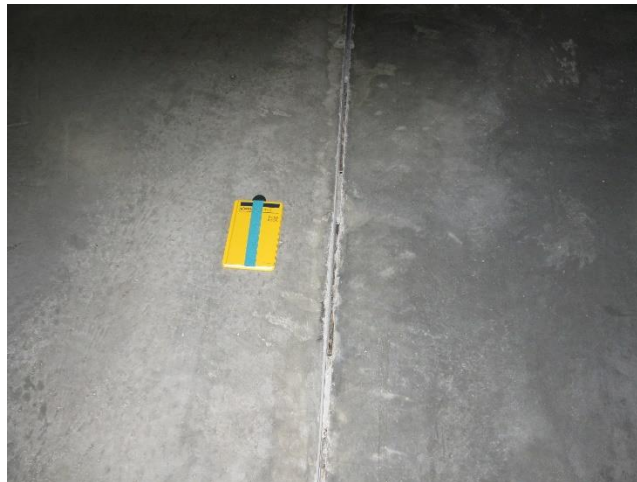
- b. **Chloroform in Indoor Air**: Concentrations of chloroform at indoor air locations IA-A1 and IA-A3 (1.3 and 1.9 micrograms per cubic meter,  $\mu\text{g}/\text{m}^3$ , respectively) exceeded the MTCA Method C air cleanup level of  $1.1 \mu\text{g}/\text{m}^3$ . The report attributes these exceedances to indoor sources. However, chloroform was measured in the sub-slab at concentrations up to  $1.6 \mu\text{g}/\text{m}^3$  and there are building features that could allow the direct transport of sub-slab soil gas into indoor air with little or no attenuation.

These features consist of the open penetration for the for the fire supply water lines in both buildings (Figure 1) and the wide expansion joint in Building A (Figure 2). To reduce the potential for chloroform vapor intrusion, the following actions shall be performed:

- i. The open penetrations shall be sealed around each of the fire supply lines in Buildings A and B.
- ii. Sealant shall be placed within the wide expansion joint in Building A.



*Figure 1. Note exposed gravel around fire supply water pipes that allow a direct connection to subsurface soil vapor.*



*Figure 2. Note wide expansion crack in center of photograph.*

Please inform Ecology **within 14 days** of the date of this letter of the methods that you propose to use to perform the above tasks and the schedule for performing this work.

2. **Cross-slab Differential Pressure:** Please revise the report to add an appendix that includes a tabular list of the cross-slab differential pressure data.
3. **Table 3:** This table shows two columns for location IA-A3 and no column for location IA-A4. This appears to be a typographic error. Please check this and correct the table accordingly.
4. **Attachment 5, Site-Specific MTCA Method B Cleanup Level Calculations:** The average total petroleum hydrocarbons (TPH) indoor air cleanup level should have been calculated separately for each building rather than combining all of the results. Then, the lowest value for the two buildings should be used for the Site cleanup level. Please revise the report accordingly.
5. Ecology recommends that if possible, photographs of the indoor air sampling locations should be included in the report.

Please provide the revised report **within 30 days** of the date of this letter. As indicated above, please also inform Ecology **within 14 days** of the date of this letter the requested information in above Comments 1a and 1b.

If you have any questions about this letter, please contact me at (360) 407-6247 or [steve.teel@ecy.wa.gov](mailto:steve.teel@ecy.wa.gov).

Sincerely,



Steve Teel, LHG  
Toxics Cleanup Program  
Southwest Regional Office

SST/tam

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