Associated Environmental Group, LLC

October 27, 2020

Ms. Heather Vick, LHG
Washington State Department of Ecology – NWRO Toxics Cleanup Program
3190 160th Avenue SE
Bellevue, Washington 98008-5452

**RE: August 26, 2020 Opinion Letter Response**
*Manor Market*
3609 164th Street SW
Lynnwood, Washington 98087-7017
Facility/Site ID #77492944
VCP #NW2621

Dear Ms. Vick:

Associated Environmental Group, LLC (AEG) is pleased to present the following AEG responses to the comments presented in the Washington State Department of Ecology (Ecology) opinion letter, dated August 26, 2020:

## RESPONSE TO ECOLOGY COMMENTS

1) *Contamination on the Site is related to three 12,000-gallon gasoline USTs that were decommissioned and replaced in 1998. Soil in place on the Site contains TPH-G, benzene, ethylbenzene, xylenes and MTBE at concentrations exceeding Method A cleanup levels. Single ground water sampling events in 2018 and 2019 indicated that TPH-G, benzene and MTBE are present at concentrations exceeding Method A cleanup levels in several monitoring wells.*

   *The concentration of TPH-G in monitoring well MW-6 located at the south Property line in December 2019 was 1,830 micrograms per liter (µg/L), the highest measured in the well since installation in 2015 and above Method A. Benzene was also detected above Method A at 147 µg/L, the second highest concentration measured since the well was installed. These exceedances are most likely from a residual source of TPH-G in soil on the Site.*

   *As of December 2019, MTBE still exceeds the Method A cleanup level (20 µg/L) in monitoring wells MW-1, MW-3 and MW-4 at concentrations ranging from 25 to 700 µg/L. These exceedances are most likely from a residual source in soil on the Site which may be separate from contamination impacting MW-6, since MTBE has been detected there once, in 2016, at a concentration of 2.4 µg/L.*

AEG Response: AEG is aware residual groundwater contamination is still present at select well locations. However, groundwater flow direction has consistently been to the east at this Site, and other downgradient wells (MW-2, MW-10, and MW-11) are present and represent conditional points of compliance (CPOCs). These CPOCs would be monitored over the long term to ensure the plume remains stable and does not migrate off the property.

2) *FS Alternative 1 which includes natural attenuation, containment and institutional controls was selected as the recommended remedial alternative. In Alternative 1, containment refers to overburden soil and asphalt that are already in place rather than an engineered cap designed as a component of the remedy.*

   *As per WAC 173-340-360 (2)(e)(iii), cleanup actions should not rely primarily on institutional controls and monitoring where it is technically feasible to implement a more permanent cleanup action for all or a portion of the site. Further, as per WAC 173-340-440(1), institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of an interim action or cleanup action or that may result in exposure to hazardous substances at a site.*

   *Natural attenuation is not considered a remedy in and of itself. Also, the report provides no evidence or Site-specific data to demonstrate that natural attenuation processes are currently active on the Site and thus how it would achieve cleanup of the Site in the estimated restoration time frame of 10 to 15 years. Additionally, it is unclear how the restoration time frame was estimated. Ecology does not consider 10 to 15 years to be a reasonable restoration time frame following a remedial action.*

   *The description of natural attenuation in Section 6.2.1 does not include details about geochemical parameters that would be analyzed for to indicate the progress of natural attenuation other than decreased concentrations of Site contaminants of concern. Without monitoring of geochemical parameters, reduced concentrations of Site contaminants in ground water cannot be attributed to natural attenuation.*

AEG Response: It was not AEG's intent to suggest natural attenuation, containment, and institutional controls be the sole remedy for the Site. The Site has already undergone a significant cleanup in 1998. As part of that action, about 1,000 tons of petroleum-contaminated soil (PCS) and 2,800 gallons of impacted water was transported off Site for disposal. Excavation was completed to the maximum extent practicable. Residual impacts summarized in AEG's Remedial Investigation and Feasibility Study (RI/FS) Report, dated April 29, 2020, are localized and limited in extent.

The Disproportionate Cost Analysis provided in the RI/FS Report included other alternatives that were significantly more costly than Alternative 1. All work being done at the Site are out-of-pocket expenses for the property owner, and he cannot afford to pursue either of the other alternatives. Further, neither alternative would likely result in achieving MTCA cleanup standards without still needing an environmental covenant (EC). The additional benefit gained by the limited exposure pathways present at the Site does not justify the cost of the more active remedies.

The entire Site is in commercial use and is completely covered in asphalt, concrete, and/or the Site building. With an EC in place, there is no direct contact exposure. The Site is on city water, and groundwater beneath the Site is not a current or potential future source of drinking water. Having an EC in place would ensure that. Further, while residual PCS may be leaching into groundwater, data collected to date has shown those impacts to be limited in extent with clean CPOC wells downgradient. Given the volume of PCS removed to date, empirical groundwater data does not suggest a significant PCS source remaining to continue to leach into groundwater over time.

With respect to monitored natural attenuation (MNA), AEG would collect field parameters such as dissolved oxygen, conductivity, and oxidation reduction potential (ORP), along with evaluating trends in the groundwater data, to evaluate whether MNA is successfully reducing contaminant concentrations. Using this scenario, as long as the CPOC data shows the plume to be stable and/or receding, and not moving off the property, there are no exposure pathways for soil or groundwater. With respect to air, see AEG's response to the next comment below.

3) *The November 2019 sampling round indicated that benzene and naphthalene in indoor air exceed the Method B indoor air screening levels. It is unclear how Alternative 1 would address this hazardous condition.*

AEG Response: There is no hazardous condition. While benzene and naphthalene may have exceeded their respective Method B cleanup levels for indoor air, the results of the sub-slab vapor sample collected during the same event were below Method B screening levels for benzene, and non-detect for naphthalene. An exceedance of the Method B sub-slab screening level indicates that constituent is present at a concentration that has the potential to migrate into indoor air. Also, this event occurred during the winter months, which is considered worst-case scenario conditions for vapor intrusion. Based on these statements, the data does not support the source of benzene and naphthalene in indoor air being from soil or groundwater impacts, but rather more likely associated with daily operations of the Site as a gas station and the door to the building constantly being opened & closed by customers.

AEG understands that benzene was detected in the sub-slab vapor in May 2018; however, that sample was collected using a Tedlar bag (instead of a Summa canister, which was used in November 2019), and was likely exposed to background interference, which is a common side

effect of Tedlar bags (AEG strictly uses only Summa canisters now). The drastic difference in benzene concentrations between the two events doesn't make sense otherwise. An additional sampling event could be performed to resolve the discrepancy.

4) *Ecology prefers the selection of a more robust cleanup option such as Alternatives 2 and 3 that will minimize the estimated restoration time frame. The alternative benefit values are nearly twice as much as Alternative 1 according to the disproportionate cost analysis.*

AEG Response: Understood; however, those alternatives are a financial non-starter for the property owner. Also, for the reasons noted above, very little additional benefit is gained by implementing those alternatives with respect to the limited exposure pathways present at the Site.

5) *Four consecutive quarters of ground water monitoring data below cleanup levels are needed in order for Ecology to consider a No Further Action determination for the Site or the Property.*

AEG Response: If CPOCs are used at the Site, four clean quarters are only needed at the CPOCs, not throughout the Site. At least four rounds of consecutive data from the CPOC wells have been shown to be either non-detect or below MTCA cleanup levels. While the events weren't exactly consecutive quarters, it is AEG's opinion that the data is representative of wet and dry seasons, which meets the intent of that guidance, and Ecology has the discretion to consider it acceptable.

6) *If Alternative 1 is implemented, Ecology suggests that the Site be self-terminated from the VCP and re-enrolled as an independent cleanup once a minimum of four consecutive quarters of ground water data below applicable cleanup levels are achieved. It is unlikely an environmental covenant could be placed on the Property with ground water concentrations exceeding cleanup levels.*

AEG Response: See responses above.

7) *Figure 3: The extent of MTBE in soil has not been delineated as shown on the figure. Besides exceedances in MW-4 and MW-6, only soil in MW-5, MW-10 and MW-11 was analyzed for MTBE and contained non-detectable concentrations. The extent is potentially a much larger area than what is shown on the figure.*

AEG Response: Given the cleanup actions performed to date, it is AEG's opinion MTBE in soil has been sufficiently characterized to be able to select the preferred cleanup alternative. All monitoring wells on the Site have been sampled multiple times for MTBE and, based on that data, it is clear where residual MTBE is present and where it's not. Filing an EC for the property and long-term monitoring of the groundwater would be protective of all exposure pathways for MTBE. It is tough drilling at the Site, which needs to be done via a Sonic rig. The additional data that

might be gained by attempting to more succinctly define the MTBE in soil is disproportionate to the cost.

8) *Figures 5, 6 and 7: Data collected in all borings in the cross-section should be shown or included in the notes if all non-detectable results. It would be helpful to also show the most recent ground water monitoring data on the cross-sections.*

AEG Response: Adding all data to cross sections can get busy, so it is AEG's practice to not include non-detect results. A note can be added to the Legend. The most recent groundwater data can be added to the cross sections; however, please note the cross sections are a snapshot in time, and AEG does not consider it reasonable to update the cross sections with each subsequent monitoring event.

9) *Figures 9, 10 and 11: The 575-foot ground water elevation contour line is missing.*

AEG Response: It is AEG's opinion that sufficient contour lines are present to illustrate the gradient at the Site.

10) *Figure 12: Ground water elevation data is missing from Site monitoring wells MW-7, MW-8 and MW-9 which were not gauged in the December 2, 2019 sampling event. All monitoring wells should be gauged even if they are not being sampled. This data helps to confirm the consistency of the direction of the hydraulic gradient. The ground water elevation measured at MW-6 appears anomalous or mounding, as noted in the past, is occurring at that location.*

AEG Response: AEG will ensure water levels are gauged for wells MW-7, MW-8, and MW-9 during future monitoring events.

11) *Chart 1: Please check the legend for the bar chart color of 'Cost per Benefit Value' and correct if needed.*

AEG Response: AEG will adjust the color.

The property owner and VCP Customer for this Site, Nick Bahn, is looking to refinance this property, and the bank requires an NFA Letter for him to do that. He's hired AEG to help him get there. He has no intention of abandoning this property or any environmental obligation he has to it post-NFA. Based on the work completed to date, including the responses provided above, the Site qualifies for an NFA with institutional controls and long-term monitoring. With an NFA, Nick can refinance the property and afford the post-NFA monitoring requirements. Alternatively, continuing to require more and more data prior to issuing an NFA will likely leave this Site "dead in the water" for the foreseeable future. AEG asks that you please reconsider.

If you have any comments or questions, please contact our office at your convenience.

Sincerely,

**Associated Environmental Group, LLC**

Scott Rose, L.H.G.
*Senior Hydrogeologist*