DEQ Review Comments
Soil Vapor Investigation
West Property - TASS 2 Site
Document dated June 3 2024
Comments by Sarah Greenfield

1. **Background.** The Soil Vapor Investigation report (report) indicates that the soil vapor investigation work plan was finalized and issued on April 23, 2024. DEQ was unable to find an e-mail or shared folder containing the final report. Please provide a copy for our records.
2. **Scope of Services.** This section identifies several deviations from the work plan that are further discussed in the following Field Activities section. DEQ recommends that the report include a new section called "Work Plan Deviations" that clearly outlines all changes to the scope of work identified in the approved Soil Vapor Investigation Work Plan. This section could then be simplified with a statement that says that the work was performed in general accordance with these procedures except for the deviations identified the Work Plan Deviations section.
3. **Field Activities, second paragraph.** DEQ has the following comments on this paragraph.
    a. Indicate whether the cause of refusal was determined during drilling (i.e. rock, debris, soil density, other).
    b. Perched groundwater was encountered at soil vapor probe SV-3 within 5 ft of ground surface. This is considerably more shallow than the perched groundwater depth identified in the risk assessment (i.e. 11 ft). This information should be incorporated into the revised risk assessment and conceptual site model for the site.
    c. The field screening results for methane, carbon dioxide, and oxygen in each soil vapor probe should be provided in the report along with any pertinent field notes.
    d. Detecting methane at elevated concentrations exceeding the lower explosive limit of 5% by volume was not anticipated during planning of the field work and indicates that subsurface conditions may present a hazard to site workers and potentially TASS 2 occupants. The report should identify that methane concentrations at these levels were not anticipated and speak to any monitoring and health and safety actions taken as a result of these findings. DEQ also understands that the field methane screening results prompted analysis of the soil vapor samples for methane, however this is not discussed in the report.
    e. The methane results should be addressed in the revised risk assessment and incorporated into the conceptual site model. DEQ understands that the site formerly operated as a lumber/shingle mill prior to a major flood event which may have resulted in a layer of wood debris and rubble which has been noted in previous environmental site investigations. Degradation of organic materials buried on site may have the potential to generate methane as observed during field activities.
4. **Field Activities, third paragraph.** Helium detections during leak testing were assumed to be influenced by the presence of methane. Please provide information in the report on the helium detector used and whether this is a known interference with this equipment.
5. **Risk Screening Levels.** DEQ has prepared site-specific RBCs for each of the VOCs detected during this field effort. The analytical screening tables should be revised to include

the complete COC list reported by the laboratory screened against these RBCs. Methane data should be compared with the lower and upper explosive limits.

6. **Chemical Analytical Results.** DEQ agrees that the helium detected in soil vapor sample SV-10-TO-15 indicates that the sample results may be biased low. This may be apparent in the TPH gasoline results which are more than an order of magnitude lower than concentrations measured across the site, despite being located in the former diesel truck repair shop.
7. **Conclusions.** DEQ has the following comments on this section.
    a. The report makes conclusions about volatilization risks despite loss of all the TO-17 samples, the inability to collect a sample at soil vapor location SV-7, modifications to soil vapor sample location SV-3, and helium results indicating that VOC concentrations at soil vapor sample location SV-10 may be biased low. The report should be revised to include a section that provides rationale for why the soil vapor data set is sufficient for making appropriately conservative assumptions about risk.
    b. The report indicates that no further inquiries regarding soil vapor are warranted. Across the site there were widespread soil vapor exceedances of methane at unacceptable levels exceeding explosive limits. This important finding must be considered in the TASS 2 development plans, particularly with respect to enclosed spaces and potential ignition sources such as smoking and propane heaters on RVs. The report would more appropriately conclude that, other than the hazards posed by methane, no further soil vapor assessment is needed to support the TASS 2 risk assessment. DEQ notes that the soil vapor results identified several exceedances of the residential and industrial RBCs for vapor intrusion that may indicate the need for additional soil investigations in the future to support the site-wide risk assessment based on future land use scenarios.
8. **Editorial Comments.** The final report should undergo editorial review. The following are examples of typos noted during DEQ review.
    a. **Field Activities, first paragraph, last sentence.** There is a period missing from the end of this sentence.
    b. **Field Activities, fifth paragraph, last sentence.** The following typo should be corrected: replace the work “collect” with “collected.”
    c. **Conclusions.** The typo in the first sentence should be corrected: “EQ” should be “DEQ.”