



Oregon

Tina Kotek, Governor

Department of Environmental Quality

Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6945
TTY 711

July 14, 2023

Chris Breemer, R.G.
Principal
GeoEngineers, Inc.
cbreemer@geoengineers.com

Re: **DEQ Comments on Response to Request for Vapor Intrusion Evaluation**
Temco Metal Products Co. (ECSI No. 1148)

Dear Mr. Breemer,

The Department of Environmental Quality (DEQ) acknowledges receipt of the June 23, 2022, letter submitted to DEQ by GeoEngineers on behalf of Temco Engineered Products, Inc. (Temco). The letter discusses DEQ's request for an investigation of potential vapor intrusion (VI) risks to occupants of buildings at off-site properties due to high concentrations of trichloroethylene (TCE) and tetrachloroethylene (PCE) in site groundwater and soil gas. DEQ has the following comments on the letter:

General Comments

- 1) As Temco and GeoEngineers are aware, DEQ is currently revising its 2010 VI guidance document. In conjunction with the planned release of new guidance, DEQ has adjusted its risk-based concentrations (RBCs) for the vapor intrusion pathway based on the United States Environmental Protection Agency's (EPA's) Vapor Intrusion Screening Levels (VISLs). As a result, groundwater and soil gas RBCs used for screening potential VI risk have decreased significantly. As an example, the concentrations of TCE in groundwater and soil gas that would screen in for occupational worker VI risk under the current guidance (3,700 micrograms per liter [$\mu\text{g/L}$] and 2,900 micrograms per cubic meter [$\mu\text{g/m}^3$], respectively) have been lowered to 13 $\mu\text{g/L}$ and 100 $\mu\text{g/m}^3$. Based on apparent flow directions and TCE detections in groundwater samples collected, contamination from Temco that exceeds the VISL-based RBCs for groundwater is known to impact the RS Davis site and is likely to impact the southeast corner of the Columbia Manufacturing property. In consideration of the known or suspected impacts to off-site properties and evolving understanding of acute risks posed to building occupants from chlorinated volatile organic compounds (VOCs) in groundwater, DEQ believes the requested investigation is warranted.

Specific Comments

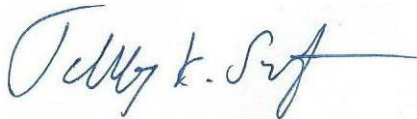
- 2) Previous Investigations, Page 2 – DEQ acknowledges that indoor air samples collected from Buildings 1 and 2 at the Temco facility in 2009 and 2010 did not exceed current occupational worker RBCs for indoor air. However, Figure 3-9 in the *Draft Remedial Investigation Report* (July 15, 2013) shows the footprint of a passive sub-slab venting system (i.e., discussed in Section 3.3) installed around the perimeter of the Die Cast Building following the TCE Tank soil removal action in 2005. Additionally, DEQ understands a separate sub-slab venting system is present on the south side of Building 1 near the southeast corner. If the venting systems at Building 1 or the Die Cast Building were in existence at the time the indoor air samples were collected in 2009 and 2010, the results would have to be considered in the context of there being an engineering control that reduces the potential for vapor intrusion. As a result, DEQ does not believe that historic indoor air data for Building 1 at the Temco site is a good predictor of potential risk to occupants of buildings at off-site properties.
- 3) Risks at Off-Site Facilities, RS Davis, Page 3 – Temco cites a Certification of Completion (COC) requiring execution of an Easement and Equitable Servitudes (E&ES) for the RS Davis property (May 2013) and describes it as containing restrictions on building design to prevent vapor intrusion. Section 3.1 of the recorded E&ES document requires the owner to give “proper consideration” of potential vapor intrusion risks, although DEQ notes it provides flexibility regarding the ways in which the exposure pathway could be evaluated. This evaluation could take the form of soil gas testing in the building footprint, incorporation of engineering controls into the building design, or other similar methods. However, specific information regarding the methodology or results of the evaluation performed for the building at the RS Davis site was not provided. Based on the construction date of the building (2011) relative to the E&ES execution date (2013), it is not clear whether or not engineering controls were incorporated into the main building at the RS Davis facility.
- 4) Risks at Off-Site Facilities, Columbia Manufacturing, Page 3 – DEQ acknowledges that concentrations of PCE and TCE in groundwater near the Columbia Manufacturing site, as demonstrated by wells MW-46 (Upper Gravel) and IMW-45 (Lower Gravel), are significantly lower than the maximum concentrations detected at the Temco site. However, the detected concentrations of TCE in these wells (i.e., shown in Figures 10 and 11) exceed the revised occupational worker RBCs based on EPA VISLs and would screen in for possible VI risk under current and likely future use scenarios. These exceedances trigger the requirement to further evaluate this pathway using soil gas, sub-slab and/or indoor air data.
- 5) Preferential Pathways, Page 4 – DEQ does not agree that groundwater data should be used as a proxy to evaluate risk from subsurface vapors migrating into buildings via preferential pathways. Although a lateral transport distance of 30 feet for vapors is considered a reasonable maximum for native soils, no maximum distance has been identified for vapor migration along a preferential pathway. In DEQ’s collective experience, transport of more than 200 feet along a preferential pathway has been observed, indicating subsurface vapors can travel a great distance from a contaminated plume if a preferential pathway is available. Under those particular circumstances, soil vapor investigations and even sub-slab data may not be reliable indicators of VI risk.

- 6) Figures 8 and 9, September/October 2016 Groundwater Elevations - Arrows on the figures suggest that groundwater flow is predominantly to the south or south-southwest. While groundwater in the immediate vicinity of Mt. Talbert exhibits southerly or southwesterly flow, DEQ believes this oversimplifies a complex groundwater flow regime in the Upper Gravel and Lower Gravel units. DEQ's conclusion is based on evidence for one or more groundwater divides and/or depressions at and just south of the Temco site (as depicted on Figures 3 through 5 of the October 2019 Groundwater Monitoring Report dated January 2020 and in similar figures in the 2013 *Draft Remedial Investigation Report*). Additionally, the rapid diminishment of TCE/PCE concentrations in groundwater south of the Temco site and the apparent west-northwest to northwest alignment of the dissolved-phase plumes extending from the Temco site further support the concept of more complex groundwater flow pattern.

In conclusion, DEQ appreciates the expense, effort and time expended by Temco in evaluating risks to human health posed by site contamination. DEQ further appreciates the submittal of information by GeoEngineers concerning DEQ's request for further vapor investigation at off-site properties; however, based on evolving understanding of VI risks and known chlorinated VOC contamination that exceeds the VISL-based RBCs for groundwater on the RS Davis site and near the southeast corner of the Columbia Manufacturing property, DEQ believes the requested investigation is still relevant.

Please do not hesitate to call (503-229-5024) or email (jeff.schatz@deq.oregon.gov) if you have questions.

Sincerely,



Jeff K. Schatz, R.G.
Project Manager and Hydrogeologist
NWR Cleanup Section

cc: Kevin Parrett, DEQ
Paul Seidel, DEQ
Rebecca Digiustino, DEQ
Greg Williams, Temco Engineered Products Inc.

(jks:JKS)