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Ms. Wanda Washington
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Re: Observations on Lockheed's Response to FDEP Comments on the 2022 RASR, Lockheed Martin Tallevast Site, Manatee County Florida

November 8. 2023

Dear Ms. Washington,

I have reviewed Lockheed's October 24, 2023 responses to FDEP on its June 30, 2023 comments to the 2022 RASR and would offer the following observations.

First, Lockheed has apparently agreed to sample the additional USAS piezometers in the Southeast Area as part of their August 2023 ground water sampling program. This benefits the understanding of the progression of the 1,4-Dioxane plume in this area, as the other monitoring wells it is using in this area are located farther southeast, on the outer periphery of the historic contaminant migration, and are not ideally located to continue tracking the plume boundary as it withdraws to the northwest. Sampling of these piezometers subsequently reported in the 2023 RASR showed that the 1,4-D plume had receded to the northwest such that the current GCTL-exceedance boundary lies between PZ-USAS-17 and PZ-USAS-18 (which currently shows a concentration of 1.9 μg/L). A low level also continues to be reported in PZ-USAS-19 at 2.6 μg/L. Other monitoring wells in the area all reported 1,4-D as "Not Detected". Water levels data (February 2023) reported in the recent RASR also supports AECOM's opinion that the outflow of water from the Amazon pond is creating an elongated mound in the water table that is helping to inhibit the movement of the 1,4-D plume to the southeast, thereby improving containment. Sampling of these SE area piezometers should continue in the future to track the future movement of this plume.

Second, Lockheed continues to decline FDEP's request to perform a DPT investigation in the residential area south of its facility along 17th Street Ct East, citing its prior (2005) VP investigations of this area as apparently adequate to understand the contamination. These prior tests, however, are now 18 years old and provide little useful information on the status of contamination in the community today, 10 years after the GRTS began operation. Prior testing showed that CVOCs were found in the USAS across this residential portion of the Tallevast community. It was likely a southern extension of diffused migration bordering the more pronounced contamination migration pathway flowing to the east from the facility, centered near MW-27 and MW-28 today. The observed concentrations in 2005 exceeded the GCTL (3 μg/L) in many samples, but only in relatively

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thinner layers of the aquifer, i.e., the higher concentration did not occur across the entire saturated thickness. Since these tests were performed, concentrations have decreased to a significant degree, due to the pumping and 18 years of overlying rain-water infiltration. None the less, the current test data shows that some contamination remains today. Although AECOM maps this area as now fully compliant with the CVOC-GCTLs (e.g., see 2023 RASR, Figure 13E), the actual levels of contaminants still present in discrete levels of the shallow aquifer are uncertain.

A principal "monitoring" well AECOM has been using for historic mapping of CVOCs in the USAS in this area is extraction well EW-2035. It serves as the key western data point for bounding the southwestern extent of a more recalcitrant area of TCE/PCE contamination centered near well MW-27, which lies almost 700 feet farther to the east, beyond the railroad ROW. EW-2035 pumped over 1600 gpd of groundwater from the USAS in 2022 (see 2022 RASR, Table 8). The TCE/PCE concentrations in EW-2035 were reported as 0.94 and 1.7 μg/L in August 2022, representing 31 and 56 percent of their respective GCTLs (see 2022 RASR, Table 15). As I have mentioned in prior writings, AECOM's conclusion and mapping of the GCTL boundary is questionable in-light-of the large distance (700 feet) between monitoring points (EW-2035 and MW-27), but also by the use of an extraction well (with the obvious potential for dilution effects on measured concentrations) for this purpose.

EW-2035 was shut down from pumping in February 2023 and will be monitored for the next year under an EWPARM program. A second extraction well to the west in the golf course (EW-2102) also stopped pumping in March 2023 and entered a one-year EWPARM monitoring program. Both wells reported as Not Detected in the subsequent TCE/PCE tests in August 2023 (see 2023 RASR). However, a monitoring well (MW-35), located in the eastern golf course property between these two pumping wells showed an increase in TCE/PCE to levels just below the GCTLs (i.e., from 1.5/1.4 μg/L in 2022, to 2.2/2.7 μg/L in 2023) after the pumping ended.[1] Detectable levels of TCE/PCE were still being reported in EW-2035 in 2022 when it was still pumping.

TCE/PCE and other CVOC degradation products were found in the residential area well above the GCTLs in the 2005 VP survey; and have been persistent, albeit at lower levels in the more recent historic data. The historic presence of TCE/PCE in EW-2035 is the reason I recommended doing some DPT testing in the USAS in the adjoining residential area, to confirm whether AECOM's mapping of the GCTL exceedance boundary as lying east of the rail ROW is correct, or if more elevated CVOCs remain in the USAS beneath the residences today. As you know, FDEP has twice asked Lockheed to undertake this work, but thus far they have declined. The data in the recently released 2023 RASR continues to support the need for this investigation.

Although I have made some limited comments herein on information recently published in the 2023 RASR, I will be preparing a more complete review of the RASR and commenting on its recommendations for modifications of the GRTS and monitoring systems at a later date.

[1] This well is now being mapped as lying outside the USAS containment system (see 2023 RASR, Figure 8).

If you have any other questions regarding these observations, please call.

Very truly yours,

Robert L Powell PhD, PE
Principal