Corporate Headquarters
6575 West Loop South, Suite 300
Bellaire, TX 77401
Main: 713.520.5400

April 3, 2025

Mrs. Laura Ward, Executive Director
Mrs. Wanda Washington, Executive Director
FOCUS
PO Box 28
Tallevast, FL 34270-0038
la1law@aol.com
washingtonwd@aol.com

Subject: **Independent Review of Interim Report – Groundwater Level and Analytical Results**
Lockheed Martin Tallevast Site (Former American Beryllium Company Site)
1600 Tallevast Road
Tallevast, Manatee County, Florida
Project Number PRJ108482

Dear Mrs. Ward and Mrs. Washington:

RES Florida Consulting, LLC (RES) is pleased to submit this letter presenting the results of our review of Lockheed Martin's January 31, 2025 Interim Report for groundwater monitoring activities conducted in December 2024 in association with the Lockheed Martin Tallevast property (former American Beryllium Company, "the Facility"). The Site consists of both the Facility and the surrounding area where groundwater is impacted by the chemicals of concern (COCs).

INTRODUCTION AND BACKGROUND

RES reviewed Lockheed Martin's 2024 Remedial Action Summary Report (RASR) dated October 31, 2024, that summarizes remedial activities conducted from September 1, 2023, through August 31, 2024, at the Site. In the RASR, Lockheed Martin listed monitoring wells with groundwater samples that showed an increase in COC concentrations to above groundwater cleanup target levels (GCTLs) since the last comprehensive sampling event conducted in August 2023. Concentrations of 1,4-dioxane showed an increase in samples collected from piezometer PZ-USAS-19 for the first time since 2021. Piezometer PZ-USAS-19 is located in the southeastern edge of the plume and outside of the capture zone.

Due to this significant new plume movement Lockheed Martin indicated that further groundwater monitoring was warranted and instead of waiting for its annual monitoring and reporting Lockheed Martin agreed to conduct a limited groundwater monitoring event in the southeast area in December 2024. On December 2, 2024, Lockheed Martin collected groundwater samples from monitoring wells MW-114, MW-259, MW-261, and MW-262 and piezometers PZ-USAS-17, PZ-USAS-18 and PZ-USAS-19 and analyzed them for the COCs.

In 2024, this area of Florida was impacted by three Hurricanes: Debby (August 4, 2024), Helene (September 26, 2024) and Milton (October 9, 2024). Although Hurricane Debby occurred during the reporting period outlined in the 2024 RASR, Hurricanes Helene and Milton occurred outside of the reporting period, but before submittal of the RASR. The RASR states that the groundwater recovery system was required to be shut down for each storm event. More specifically, the RASR indicated that the system shut down from Hurricane Debby was due to an estimated 15 inches of precipitation. The subsequent system restart occurred approximately two weeks prior to the August 2024 water level gauging event. The

composite COC distribution in the Upper Surficial Aquifer System (USAS) figure in the 2024 RASR indicated that the capture zone was still being reestablished following the August system shutdown. Therefore, Lockheed Martin included another figure showing an estimated capture zone based on a February 2024 gauging event to document the recovery system capture zone prior to the impact and influence of Hurricane Debby. Lockheed Martin recommended monitoring the progress of reestablishing the extent of capture within two areas of the USAS following the shutdown of the recovery system that occurred for Hurricanes Helene and Milton. As a result, Lockheed Martin conducted a limited water level gauging event in the northwestern and southeastern portions of the Site in December 2024.

RESULTS OF INTERIM GROUNDWATER MONITORING

Southeast Edge Remains Undelineated and Beyond the Capture Zone

The December 2024 groundwater monitoring results confirmed that the 1,4-dioxane plume encompasses PZ-USAS-18, which was drawn outside of the contaminant plume in the 2024 RASR based on 2023 groundwater monitoring data. Based on the more recent information, the plume configuration is shown to have migrated about 700 feet beyond the extent shown in the 2023 sampling event maps and now extending into parcel ID 200650079. This data confirms our concern about the ongoing plume spread in the southeast. We remain concerned that the horizontal delineation relies on monitoring wells located 600 feet (east) and 1,000 feet (west) away, and therefore, cannot be considered sufficient for knowing where the contamination is or forecasting its migration path. **USAS monitoring wells closer to PZ-USAS-19 are needed to properly characterize this area of contamination.**

In 2019 Lockheed first acknowledged it had not delineated the southeast edge of the plume. In response FDEP required additional investigation of the USAS and Lower Shallow Aquifer System (LSAS). It took Lockheed Martin until 2022 to install additional monitoring wells. Since the previous efforts in this area have not been successful in delineating or controlling the plume, and it continues to spread urgent action should be taken to stop and recover the spread of contamination. This can only be done if the location of all of the contamination in the downgradient area is known.

Further, the vertical delineation of 1,4-dioxane in the area of PZ-USAS-19 is based on a LSAS monitoring well that is located about 300 feet upgradient of PZ-USAS-19, meaning that there are no deeper monitoring wells either downgradient or below PZ-USAS-19. We insist that even with the additional sampling conducted, the contamination in the area is not properly assessed. **Deep monitoring wells closer to, and southeast of, PZ-USAS-19 are needed to properly characterize and delineate the deeper portion of the plume in this area. We acknowledge that FDEP has stated a requirement for Lockheed Martin to install a least one LSAS well near MW-260, however there continue to be other areas of the site where the LSAS remains undelineated as indicated in our previous correspondence.**

Private Wells Should be Removed from Service

Lockheed Martin also collected groundwater samples from a private well that had previously shown an exceedance of the 1,4-dioxane GCTL, but did not show an exceedance in a subsequent resampling event. This recently conducted third sampling event exhibited a 1,4-dioxane concentration of 2.5 ug/L, which is below the GCTL of 3.2 ug/L. **This private well should be removed from service. All private wells in proximity to the contamination plume should be removed from service and properties connected to public water supply, especially because they are not being regularly monitored. There should also be an institutional control so that future water supply wells are not permittable in proximity to the contamination plume.**

Additional Monitoring Yields New Contaminants and Rebound

Although the focus of the Interim Report was to reestablish the capture zone in the southeast and northwest portions of the USAS and to evaluate the contamination located outside of the capture zone, Lockheed Martin also included groundwater monitoring laboratory reports from for sampling extraction well post active remediation monitoring (EWPARM) in the Interim

Report. They sampled monitoring wells MW-23, MW-44R, MW-70, and MW-71. Although the laboratory reports were attached, the results were not discussed in this interim report, and it was stated that they would be discussed in the 2025 RASR. We note that the results showed the groundwater concentrations of 1,4-dioxane to be 8.6 ug/L, well above the GCTL and 5.1 ug/L of carbon disulfide below the GCTL of 700 ug/L. The historic results for MW-44 suggest that the concentrations of 1,4-dioxane are rebounding since the nearby extraction well (EW-5002) was shut down. This can be indicative of a continued source in that area that was not documented, likely due to the fact that Lockheed Martin has been allowed to rely upon dynamic sampling methods used during EWPARM.

Similarly, we note that Lockheed Martin had to restart EWPARM for EW-2102 because of the rebound of trichloroethene experienced at nearby monitoring well MW-35. **We recommend conducting four quarterly sampling events of the extraction wells and associated monitoring wells <u>using quiescent sampling methods</u> until two events determine that both the extraction wells and associated monitoring wells are below GCTLs for the last two consecutive quarterly sampling events prior to discontinuing EWPARM. This would include collecting samples after ordinary well purging for sampling, but at least two months after any pumping from extraction wells in EWPARM. This is consistent with the RAP and industry standards and would assess whether representative (static) groundwater conditions meet GCTLs.**

Carbon disulfide has not been historically identified as a contaminant of concern and is not reported in the analytical tables for the monitoring wells. Carbon disulfide has a density of 1.26 g/cm3 and therefore will tend to sink. MW-44 is a Salt & Pepper Sands monitoring well and it is screened from 142 to 152 feet bls. MW-44 is located just outside of the facility and in the residential neighborhood. **The presence of carbon disulfide should be further investigated and if its presence is confirmed, should be incorporated as a COC for the Site, delineated, and monitored with the other COCs.**

RESULTS OF GROUNDWATER LEVEL MONITORING

<u>Southeast Edge of Contamination Plume Continues to Spread Beyond the Capture Zone</u>

The Interim Report states that the results of the December 2024 water level gauging event indicate the on-going reestablishment of the groundwater recovery system capture in the USAS since the August 2025 water level gauging event reported in the 2024 RASR. However, the results confirm that the plume extends well beyond the capture zone, about 700 feet in the southeast, leading edge of the plume. **We recommend that groundwater elevation measurements for monitoring wells MW-259, MW-260, MW-261, PZ-USAS-18, and PZ-USAS-19 be added to the regular elevation monitoring schedule so that Lockheed Martin can depict a proper capture zone in the downgradient area of plume spread. We understand that this area is being considered for future development. It is important that Lockheed Martin begin obtaining this data as soon as possible and coordinate with future land development to ensure that these monitoring wells continue to be viable and accessible and that the data continues to be available.**

<u>Northwest Edge Now Clearly Undelineated and Beyond the Capture Zone</u>

The groundwater level contour map in the northwest area shows that the trichloroethene contour presented in the 2024 RASR also extends beyond the capture zone. However, the Interim Report does not show the contaminant concentrations overlaid on the contour map and this deficiency of recovering the extent of the plume is not stated within the report. Prior to the hurricanes, we expressed our concern with plume capture in this area. Specifically, our concern was documented during our review of the 2018 groundwater model results because the model forecasted that contamination existed outside of the predicted capture zone in the northwest plume in the USAS. This finding in 2018 was not discussed in the narrative of the RASR at the time. However, FOCUS brought this to FDEP's attention and requested that an independent review of the model be conducted. Concerns regarding Lockheed Martin's own conflict between the model and the capture zone boundary estimates were never addressed by Lockheed Martin or required to be evaluated by FDEP. Consistent with the 2018 model, the 2023 model report continues to predict contamination outside of the capture zone without any mention in the 2024 RASR. Lockheed Martin's text in the RASR merely states that the model was updated, and the report is provided in the appendix but does not provide any summary or conclusion associated with the model report.

Model Deficiencies

In addition to updated groundwater level contour data, there are other very obvious deficiencies in the 2023 model that need to be addressed. For example, neither the six-acre stormwater pond associated with the Manatee County Transit facility, nor the five-acre pond associated with the Amazon warehouse were included in the updated model. Additionally, there is now another stormwater pond at the UNFI warehouse in this area, and we understand that there are three other parcels pending site plan approvals in the area. In contrast, reference wetland 3 (RW-3) that Lockheed Martin removed from the wetland management plan due to it being permitted to be impacted by development remains part of the modeling analysis. **We recommend rerunning the model with the correct surface water features in the area to ensure that accurate data is used to predict the plume configurations and capture zones.**

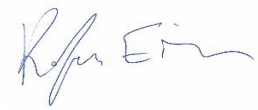
Impact of Past Storms should be Addressed and Plans Developed for Future Storms

Lockheed Martin contends that the purpose of the Interim Report is to summarize the work completed in December 2025 to monitor the progress of reestablishing the extent of capture within two areas of the USAS following system shut down due to hurricanes. **It is our opinion that this merely exacerbated previously under evaluated conditions and that FDEP should require an interim assessment of the impact of these storms, report any system outages that may have occurred and remedial measures to abate the impact. Additionally, with the increased frequency of severe storm events, Lockheed Martin should prepare a severe event response plan to include resilient remedial and reporting strategies.**

We strongly recommend that FOCUS' concerns be taken into consideration by FDEP and Lockheed Martin and addressed.

We appreciate the opportunity to offer our professional services to you. If you have any questions concerning our evaluation, please contact us at 954-484-8500.

Sincerely,
RES Florida Consulting, LLC dba E Sciences



Kathryn Eisnor
Senior Scientist

Nadia G. Locke, P.E.
Senior Engineer

Cc: Ms. Jeanne Zokovitch Paben