apcd air pollution control district
SANTA BARBARA COUNTY

July 17, 2023

Via Email
Read Receipt Requested

Kimberlee Harding
Vandenberg SFB, Space Launch Delta 30
1028 Iceland Avenue, 30 CES/CEIEC
Vandenberg SFB, CA 93437-6010

Re: Comments on 2018 Health Risk Assessment and ATEIR for VSFB
Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)

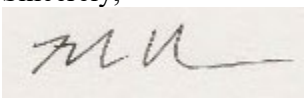
Dear Kimberlee Harding:

The Santa Barbara County Air Pollution Control District (District) has reviewed your health risk assessment (HRA) and revised Air Toxics Emission Inventory Report (ATEIR) for inventory year 2018, dated January 17, 2023. Additional information and/or clarification of information already submitted is required. The HRA incompleteness items are detailed in Attachment A of this letter. Attachment B of this letter addresses the remaining ATEIR conditional approval items from the District's letter dated March 29, 2022 regarding *Conditional Approval of 2018 Air Toxics Emission Inventory Report VSFB*.

Please submit a revised HRA, HRA report, and written response to each of the items listed in Attachment A by October 16, 2023. In addition, **by September 1, 2023, submit Tier 2 parameters (Comments No. 1 and 2), justification for removal of acute receptors (Comment No. 5), justification for removal of worker receptors (Comment No. 7), justification for variable emissions scenarios (Comment No. 14), and the remaining ATEIR items described in Attachment B**. Electronic copies of the revised HRA and revised ATEIR should be sent via email to CobbsR@sbcapcd.org.

If you have any questions or require additional information, please contact me at CobbsR@sbcapcd.org or (805) 979-8320.

Sincerely,



Robin Cobbs
Engineering Division

cc: VSFB SSID 01195 Project File
VSFB SSID 01195 Toxics File
Toxics Group
Engr Chron File
Ramzi Chaabane, AECOM
Mary Kaplan, AECOM

Attachment A: HRA Incompleteness Items
Attachment B: ATEIR Conditional Approval Items

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ATTACHMENT A

VSFB 2018 HRA Incompleteness Items

1. Tier 1 and Tier 2 HRA. VSFB submitted a Tier 2 health risk assessment (HRA) and no Tier 1 HRA. As noted in Section 4.1 of the District's *Modeling Guidelines for Health Risk Assessments* (Form-15i), the Office of Environmental Health Hazard Assessment (OEHHA) developed a tiered approach for HRAs to accommodate consideration of site-specific data that may be more appropriate for a given facility than the default values. The Tier 1 HRA is the first step and is the simplest point estimate approach for estimating exposure to facility emissions. A Tier 1 HRA is always required in Santa Barbara County. The defaults provided in the District's HRA Guidelines and in HARP 2 are for a Tier 1 HRA.

   Tier 2 allows use of site-specific point estimates of exposure variates as long as these estimates can be justified. The risk assessor must supply the data and methods used for the site-specific estimates, and the site-specific estimates must be reproducible and approved by the District. At the facility's option, a Tier 2 risk assessment can be submitted in addition to the Tier 1 HRA described above.

   The revised HRA must include a Tier 1 HRA, and the revised HRA report must present all results of the Tier 1 HRA. The parameters and results of the Tier 2 HRA must be presented in separate, clearly titled sections, tables, and text. Please note that Tier 2 options cannot be used for sensitive receptors. **Submit all proposed Tier 2 parameters to the District by September 1, 2023 and obtain approval for the Tier 2 parameters prior to rerunning the HRA.**

2. Tier 2 Start Age. Using a start age of 18 years for the exposure duration is a Tier 2 parameter. The District will accept the start age of 18 years for residential housing that does not allow children. **Submit documentation by September 1, 2023 for any residences that use a start age of 18 years showing that children are not allowed.** Alternatively, use the Tier 1 default start age of the third trimester in the revised HRA.

3. HRA Report. The following items were not included in the HRA report, although they are required per Form-15i. Please note, that due to the complexity of the VSFB HRA and the detailed information provided in the Air Toxics Emission Inventory Plan and Report (ATEIP/R), certain elements of the HRA report listed in Section 5 of Form-15i are **not** required. For that reason, refer to the list below for elements that must be included in the HRA report:

   a. Date of the *health.mdb* file used in the HRA.

   b. Date of the Form-15i used to prepare the HRA.

   c. List of input/output file names for air dispersion and risk assessment. Because the air dispersion was divided into multiple runs based on the receptor locations and sources, describe the file structure and receptor/source breakdown in words and/or a table/spreadsheet. Explain which receptors are included in which folder groups and which sources are included in each .src file.

   d. Describe the two BPIP runs performed and how those files were used to create the .bld files for the point sources in each run.

   e. Table 4-1, *Multi-Pathway Analyses for Off-Site Receptors*, fulfills the requirements of Section 5.8 of Form-15i for offsite receptors. Include a similar table for **onsite** receptors.

   f. Submit a completed *Modeling Protocol Tables for HRA Report* that includes any updates that occurred since the ATEIP (i.e., initial value and final value). Use the tables available here: https://www.ourair.org/wp-content/uploads/Modeling-Protocol-Tables-for-HRA-Report.xlsx.

g. Present Tier 1 and Tier 2 HRA results in tabular form, as described in Section 5.9 of Form-15i. In addition to the receptor types listed in Tables 5.9-1 through 5.9-3, include the onsite and offsite maximally exposed individual residents (MEIRs) and the onsite and offsite maximally exposed individual workers (MEIWs).

h. Include isopleths for onsite and offsite risk, as described in Section 5.11 of Form-15i. Provide magnified views of isopleths for areas with a 10 in a million cancer risk or greater and for areas with a hazard index of 1.0 or greater.

4. Refined Acute Analysis. The refined acute analysis was not run in HARP 2 and did not follow the District's Alternative Refined Acute Risk Method (ARAM) outlined in Appendix H of Form-15i. The District reviewed VSFB's refined acute risk methodology and found it is similar to ARAM and is a valid approach. However, your methodology did not include a multiplication of 1000, as in the ARAM, to avoid potential loss of data. The acrolein emission rate, for example, is very small for dozens of devices, on the order of 1E-8 g/s and 1E-7 g/s. To avoid any loss of data from a low emission rate, use a temporary scaling factor of 1000: multiply the acrolein emission rates by 1000 for the AERMOD files and then divide the concentration by 1000. Furthermore, for clarity, include a discussion in the HRA report that describes in detail the method used for the refined acute analysis and references the specific files, including spreadsheets, used for the refined acute risk calculation.

5. Proposed Removal of Acute Receptors. The tab *Receptor Changes 3* of the spreadsheet, *Proposed Model Source Changes.xlsx*, lists five acute receptors that were removed from the HRA. One of the receptors was located at a game court that was removed prior to 2018. For that reason, the District will accept the removal of this receptor. From satellite imagery, it appears that the remaining four receptors (UTM coordinates shown below) are located at benches in a grassy area; therefore, these are legitimate acute receptors. If these are not benches, provide more information about the receptors, including clear imagery to demonstrate that this is not an area where a person could be located for one hour. **Submit this information to the District by September 1, 2023 and obtain approval for the removal of these receptors prior to rerunning the HRA.** Otherwise, revise the HRA to include these locations as acute receptors.

UTM Northing (m)	UTM Easting (m)
724900.40	3844880.58
724872.27	3844861.90
724877.65	3844884.61
724884.25	3844877.25

6. Sensitive Receptors. In the HRA report, only the acute non-cancer risk type was reported for sensitive receptors. Per Section 4.7 of Form-15i, cancer risk, chronic non-cancer risk, 8-hour chronic non-cancer risk and acute non-cancer risk must be calculated and reported for sensitive receptors. Revise the HRA accordingly.

   Furthermore, the District found three receptors identified in the HRA as sensitive receptors with a residential cancer risk greater than 10 in a million: 1) BASE HOSPITAL; 2) LAUNCH OFFICER'S SCHOOL; and 3) AETC STUDENT LEARNING CENTER. The District defines sensitive receptors as hospitals, adult/elderly care facilities, schools (K-12), and daycare facilities (including public, private and worksites with childcare facilities). Based on the names of the three receptors, they may not be sensitive receptors, as described below.

a. If a school/learning center does not have K-12 students, it is not considered a sensitive receptor unless it has an onsite childcare facility. Please clarify if the LAUNCH OFFICER'S SCHOOL and the AETC STUDENT LEARNING CENTER have K-12 students and/or a daycare. If not, these may be changed to worker receptors.

b. It appears that the BASE HOSPITAL may be an outpatient clinic. If all services are outpatient and there are no overnight stays at this facility, this receptor may be changed to a worker receptor.

7. Worker Receptors. One of the proposed changes to the HRA from the approved ATEIP was removing many worker receptors, including receptors located at the museum, grocery store, restaurants (including Burger King), a golf clubhouse, chapel, thrift store, laundromat, library, military clothing store, theater and some industrial sites. The District does not approve the proposed changes to remove worker receptors. Onsite cancer and chronic non-cancer risk for worker exposure must be evaluated for workers that are not employees of VSFB or employees of a company that is part of the Vandenberg Space Force Base stationary source (SSID 01195). Revise the HRA to include all worker receptors specified in the ATEIP, including the museum, grocery store, Burger King and other restaurants, the golf clubhouse, chapel, thrift store, laundromat, library, military clothing, and theater. If the ATEIP list of worker receptors includes industrial locations that have only VSFB employees or employees of a company that is part of the VSFB stationary source (SSID 01195), **provide those specific receptor locations to the District by September 1, 2023 for consideration of removal prior to submitting the HRA**. For an industrial location with employees of a company that is part of the Vandenberg SFB stationary source, include the permit number that lists the company as an owner or operator and the SSID as 01195.

8. Revised Source Parameters for PSB. Please provide additional documentation to explain the revision of the source parameters for the paint spray booth (PSB) Source IDs 384028 and 384029, and the building parameters for the associated Building 9320. Specific issues are described below:

   a. The June 2021 submittal of the *Modeling Protocol Tables* (MPT) showed a building height of 10.35 meters for Building 9320. Explain if the revised height of 6.4 meters is based on an actual measurement, building plan records, etc.

   b. The June 2021 MPT showed a release height of 5.3 meters for Source ID 384028. Provide documentation for changing the stack height to 8.961 meters.

   c. The UTM coordinates were revised for both Source IDs 384028 and 384029. In addition, the release type for Source ID 384029 was changed to horizontal. Provide documentation for these changes.

9. AERMOD Files for PSB. The following issues were identified in the AERMOD files for the PSB Source IDs 384028 and 384029:

   a. Both the 1-hour and the period files located in the **BeyondBoundary** folder for the *Point_Source_5.src* files did not contain the updated source parameters listed in the *Proposed Model Source Changes.xlsx* for Source IDs 384028 and 384029. Revise the *Point_Source_5.src* files to reflect the updated parameters and rerun AERMOD and HARP 2.

   b. Both the 1-hour and the period *Point_Source_5.src* files located in the **AcuteRescOnly** folder show the updated source parameters for Source IDs 384028 and 384029. However, the date modified (9/22/2022) of *Point_Sources_5.src* is later than the date modified (9/5/2022) of the output file, *Point_Sources_5.out*, indicating that AERMOD was run before the .src file was last saved. For that reason, it is unclear which source parameters were used when AERMOD was run. Furthermore, the release type for Source ID 384028 was changed to POINTCAP. It

appears that this was unintentional since the change was not identified in the file *Proposed Model Source Changes.xlsx*. Revise the *Point_Sources_5.src* file accordingly and rerun AERMOD and HARP 2. If you intend to use the POINTCAP release type for Source ID 384028, provide documentation for this change.

c. Both the 1-hour and the period *Point_Sources_5.src* files located in the **NonAcuteRescOnly** folder show the POINTCAP release type for Source ID 384028. It appears this is an error, as noted in the comment above. Revise accordingly.

d. Variable emissions were included for Source IDs 384028 and 384029 in the 1-hour *Point_Source_5.src* file located in **NonAcuteRecsOnly** folder. However, variable emissions were not included in the 1-hour *Point_Source_5.src* file located in the folder **AcuteRecsOnly** nor in the 1-hour *Point_Source_5.src* located in the **BeyondBoundary** folder. Revise the variable emissions scenario for this source in all the 1-hour *Point_Source_5.src* files to match the 1-hour *Point_Source_5.src* file located in **NonAcuteRecsOnly** folder.

e. The building file, *Point_Sources_5.bld*, is inconsistent between the various receptor folders as described below. Ensure the correct building height is used in all files in the revised HRA.

   i. The building height influencing Source IDs 384028 and 384029 is shown as 6.40 meters in the both the 1-hour and the period *Point_Sources_5.bld* files located in the **AcuteRecsOnly** folder, and both the 1-hour and the period files located in the **NonAcuteRecsOnly** folder.

   ii. The building height influencing the Source IDs 384028 and 384029 is shown as the original building height of 10.35 meters in both the 1-hour and the period *Point_Sources_5.bld* files located in the **BeyondBoundary** folder.

f. The building files titled *Point_Sources_5.bld* for the period run and 1-hour run in the **AcuteRecsOnly** folder are dated 9/22/2022, which is later than the AERMOD output files run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

10. AERMOD Files. Address the following issues found in the .src and .bld files:

a. The emission rates of the AREAPOLY sources in both the 1-hour and the period .src file, *Vol_Area_Sources_2.src,* in all receptor folders are inconsistent with the MPT. The MPT are correctly based on the unit emission rate divided by the area of the AREAPOLY source. The *Vol_Area_Sources_2.src* files list the emission rate as 2.89E-6 g/s-m^2 for every AREAPOLY source. Revise the emission rates for all AREAPOLY sources in *Vol_Area_Sources_2.src* to use the unit emission rate divided by the area of the corresponding AREAPOLY source.

b. Both the 1-hour and the period *Vol_Area_Sources.src* files in all receptor folders use a sigma Y of 20.123 meters for Source ID EE8317, while the MPT shows 22.76 meters. It appears the value in the *Vol_Area_Sources.src* files is an inadvertent duplicate of the value next to it. Correct the sigma Y parameter for Source ID EE8317.

c. Both the 1-hour and the period *Point_Source_4.src* files in all receptor folders show different UTM coordinates for DID 388171 than the MPT. The MPT show the UTM coordinates as 725908.51 m, 3845198.21 m. However, the *Point_Source_4.src* files show a duplicate of the UTM coordinates from DID 390424 (725657.32 m, 3846655.34 m). It appears the UTMs from the MPT are correct, as DID 388171 is located at Building 8425 (per your response to comments on the District's ATEIR conditional approval letter). Correct the UTM coordinates for DID 388171 in all receptor folders.

d. The period *Point_Source_6.src* files are inconsistent between receptor folders. The period *Point_Source_6.src* file located in the **AcuteRecsOnly** folder separate the Motor Vehicle Fueling Facility (MVFF) DIDs 109369 and 384085 into four sources (loading, breathing, refueling and hose permeation). The period *Point_Source_6.src* files located in the **BeyondBoundary** folder and the **NonAcuteRecsOnly** folder use only one source for MVFF DIDs 109369 and 384085. Revise the *Point_Source_6.src* files to ensure the source parameters are consistent for all receptor folders and the period and 1-hour averaging times. Please note that if you decide to separate each MVFF into four sources, the emissions must be correctly assigned in the HARP 2 emissions file to the new source IDs. Furthermore, the source parameters used for 1) Loading; 2) Breathing; 3) Refueling & Hose Permeation; and 4) Spillage should match the default parameters listed in Table B1 of the District's Form-25T.

e. The 1-hour *Point_Source_6.src* files are inconsistent between receptor folders. The 1-hour *Point_Source_6.src* files located in the **AcuteRecsOnly** folder and the **NonAcuteRecsOnly** folder separate the Motor Vehicle Fueling Facility (MVFF) DIDs 109369 and 384085 into four sources (loading, breathing, refueling and hose permeation). The 1-hour *Point_Source_6.src* file located in the **BeyondBoundary** folder uses only one source for MVFF DIDs 109369 and 384085. As described in the previous comment, revise the *Point_Source_6.src* files to ensure the source parameters are consistent for all receptor folders and the period and 1-hour averaging times.

f. The source file, *Point_Sources_6.src*, for the period run in the **AcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

g. The source file, *Point_Sources_6.src*, for the 1-hour run in the **AcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

h. The source file, *Point_Sources_6.src*, for the 1-hour run in the **NonAcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

i. The *Point_Sources_6.bld* building file is inconsistent between receptor folders and averaging periods due to the MVFF sources being separated into four sources in some of the receptor folders/averaging periods. Furthermore, there are inconsistencies within the folders. For example, the **NonAcuteRecsOnly** period folder uses Source IDs 109369L and 109369B, while the .src file within the same folder uses Source ID 109369. Ensure the .bld files are updated to reflect the corrections made to the .src files.

j. The building file, *Point_Sources_6.bld*, for the period run in the **AcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

k. The building file, *Point_Sources_6.bld*, for the 1-hour run in the **AcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

l. The building file, *Point_Sources_6.bld*, for the 1-hour run in the **NonAcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

m. The building file, *Point_Sources_6.bld*, for the period run in the **NonAcuteRecsOnly** folder is dated 10/1/2022, which is later than the AERMOD output file run on 9/5/2022. Ensure AERMOD is run **after** all modifications to the .src and .bld files are completed.

11. Metal Compound Emissions. The pollutants listed below do not have health risk data in HARP 2 for their specific pollutant ID. However, these pollutants should be assigned to the metal compound group, as the group has risk data. You may assign the entire emissions of each specific pollutant to the corresponding metal compound group (most conservative approach) or use the molecular weight adjustment factors (MWAF) to assign only the metal portion of the pollutant emissions.

    a. Manganese (II) sulfate should be assigned to "Manganese and Compounds" with pollutant ID 7439-96-5.

    b. Copper naphthenate should be assigned to "Copper and Compounds" with pollutant ID 7440-50-8.

12. HARP 2 Emissions File. The emissions for DID 107926 listed in the HARP 2 emissions file do not match the ATEIR emission calculations shown in the file *Calculation ID 10 – Paint Spray Booths.xlsx*. For example, the HARP 2 file shows 0.42 lb/yr of pollutant ID 1221 HOMOPOLYMER OF HEXAMETHYLENE DIISOCYANATE, while the ATEIR shows only 0.2626 lb/yr. Update the HARP 2 file to reflect the emissions in the file *Calculation ID 10 – Paint Spray Booths.xlsx*.

13. Table 3-1. Update Table 3-1, *Modeled Toxics Substances Emitted by Vandenberg Space Force Base in 2018*, of the HRA report to reflect the final ATEIR emissions. In addition, revise the annual and maximum hourly emissions from hexavalent chromium in Table 3-1 to reflect the HARP 2 emissions file (i.e., Table 3-1 shows 0.24 lb/yr of hexavalent chromium while the HARP 2 emissions file shows 0.2293 lb/yr).

14. Variable Emissions. The HRA used variable emissions scenarios that were not reviewed and approved as part of the ATEIP/R process. As noted in Appendix A of Form-15i, documentation is required to justify the variable emissions scenarios. Furthermore, the District may require a permit modification for permit conditions to enforce the operating schedules that VSFB uses in the variable emissions scenario, including permit exempt devices. For all variable emissions scenarios used in the final HRA, **confirm in writing that VSFB is willing to accept permit conditions with operational restrictions based on these variable emission scenarios**. If VSFB does not want to accept permit restrictions for these devices, remove the variable emissions scenarios from the HRA. **Submit all variable emissions scenarios to the District by September 1, 2023 along with the written confirmation from VSFB and obtain approval for the variable emissions scenarios prior to rerunning the HRA**. In addition, address the following comments on variable emissions:

    a. There are 256 sources that use the schedule of M-F, 7 am to 5 pm, for their variable emissions scenario. Please confirm in writing that none of these sources operated outside of this schedule in 2018. Remove variable emissions for any sources without written confirmation of this operating schedule.

    b. The variable emissions schedule for Source ID AB3568 (Explosive Ordnance Disposal) is M-F, 8 am to 4 pm. Please confirm in writing that this source did not operate outside of that schedule in 2018. Alternatively, remove the variable emissions for this source.

    c. LFUNLOAD (landfill unloading) and L0000001-L0000086 (landfill haul roads) were not listed in the *Variable Emis - Acute* or *Variable Emis - Period* tabs of the *Proposed Model Source Changes.xlsx* file. However, the *Vol_Area_Sources_2.src* files for all receptor folders and averaging times contain variable emissions for these sources. Please confirm in writing that

these sources did not operate outside of this variable emissions schedule in 2018. Alternatively, remove the variable emissions for this source.

d. If VSFB has no ability or is not willing to enforce operating hours at Burger King, then the variable emissions scenario should be removed. If VSFB is able and willing to restrict Burger King's hours to the 2018 variable emissions scenario, then confirm this in writing.

e. Address the following regarding Breakers Dining:

   i. It is unclear from the information available online what the hours for Breakers Dining were in 2018. The opening of Beachcombers in 2020 appears to have impacted the Breakers Dining hours. Beachcombers is currently open at 5 am. Was Breakers Dining open at 5 am in 2018?

   ii. To avoid future permit modifications, consider expanding the variable emissions scenario to include any hours that Breakers Dining may want to operate in the future.

   iii. The comment lines in the .src files note that Breakers Dining operated for 4446 hr/yr, and therefore has an emission rate factor of 1.97. However, the variable emissions period scenario used in the .src file is 4628 hr/yr (13 hours on M-F and 12 hours on Sat and Sun). If Breakers Dining operated for 4628 hr/yr, the emission rate factor would be 1.89 instead of 1.97.

f. Address the following regarding Pacific Coast Club:

   i. Based on the restaurant's website, there are separate hours for the Pacific Coast Club's Café, Patio Bar and Meals-to-go. Confirm that cooking only occurs during the Café's operation hours or revise the variable emissions as necessary.

   ii. To avoid future permit modifications, consider expanding the variable emissions scenario to include any hours that the Pacific Coast Club may want to operate (cook) in the future.

   iii. The comment lines in the .src files note that Pacific Coast Club operated for 2405 hr/yr, and therefore has an emission rate factor of 3.64. However, the variable emissions period scenario used in the .src file is 2600 hr/yr (10 hours on M-F). If Pacific Coast Club operated for 2600 hr/yr, the emission rate factor would be 3.37 instead of 3.64.

g. Address the following items:

   i. The hours shown online for Surf Bowl and Grill do not match the variable emissions schedule used in the HRA. The variable emissions show that operations occurred on Tues-Fri from 3 pm to 8 pm and on Saturday from 1 pm to 9 pm. The hours online are shown below. Please confirm in writing the correct operating hours for 2018.

ii. To avoid future permit modifications, consider expanding the variable emissions scenario to include any hours that the Surf Bowl and Grill may want to operate in the future.

iii. The comment lines in the .src files note that Surf Bowl and Grill operated for 1430 hr/yr, and therefore has emission rate factor of 6.126. However, the variable emissions period scenario used in the .src file is 1456 hr/yr (5 hours on Tues-Fri, 8 hours on Sat). If Pacific Coast Club operated for 1456 hr/yr, the emission rate factor is 6.02 instead of 6.123.

15. Revised HRA. Ensure that the latest AERMOD, HARP 2 and *health.mdb* files are used for the revised HRA.

VSFB 2018 ATEIR Conditional Approval Items

Numbering corresponds to the District's March 29, 2022 letter regarding *Conditional Approval of 2018 Air Toxics Emission Inventory Report VSFB*. **Address the remaining item below by September 1, 2023.**

1-10. No further action required.

11. Calculation ID 9 – MVFF. Address the remaining items regarding the MVFF calculations:

    a. The spillage annual emission calculations for DID 384085 incorrectly references the annual throughput (gal/year) of DID 109369 instead of DID 384085. Update accordingly.

    b. The maximum hourly emissions for DID 384085 are based on an annual throughput (gal/year) of 3 - < 5 million gallons (i.e., 1000 gallon/hr scenario). However, the throughput of DID 384085 was only 2,291,778 gal/year. At your option, you may revise the maximum hourly emission calculation for Phase II (breathing, refueling, and spillage) to be based on the 700 gal/hr scenario instead of 1,000 gallon/hr scenario. This revision is not required as your calculations are conservative.

12. No further action required.

13. Calculation ID 12 - Chemical usage spreadsheet. Address the following items regarding the chemical usage:

    a. The file, *12 - ChemUsage - Emissions.xlsx*, shows that VSFB claimed an exemption from reporting methylene diphenyl diisocyanate (MDI) CAS No. 101688 from chemical usage for most products containing MDI. As MDI is a highly toxic pollutant, the exemption claimed for any product containing MDI must be justified with documentation and a description of the maintenance activities. This information was submitted to the District (via email from Ramzi Chaabane on 11/9/2023 to Robin Cobbs) and the District approved the exemption (via email from Robin Cobbs on 11/30/2022 to Ramzi Chaabane) for three products; 1) CATALYST FOR POLYASPARTIC FLOOR – Product NSN: 8010PHM00345645 applied to floors for durability; 2) CATALYST FOR POLYFLEX 57 – Product NSN: 8010PHM00345648 applied to floors for durability; and 3) AMERSHIELD CURE – Product NSN: 8010PHM00054547 applied as protective coating to radar structures and aerospace equipment. To claim this exemption for other products or activities with MDI, VSFB must submit documentation and a description of the maintenance activities for each product seeking exemption. **Provide this information to the District by September 1, 2023 and obtain approval for the removal of these emissions prior to rerunning the HRA**. Additional information regarding maintenance exemptions is discussed in the comment below.

    b. The file, *12 - ChemUsage - Emissions.xlsx*, shows the removal of many pollutants based on a maintenance exemption listed in Section VIII.D. of the California Air Resources Board's (CARB) *Emission Inventory Criteria and Guidelines* (EICG). However, the spreadsheet does not specify if the product is used for facility grounds maintenance, structural maintenance, minor maintenance, vehicle maintenance, or maintenance and repair of process and industrial equipment. Maintenance and repair of process and industrial equipment is not exempt. For that reason, please provide more information on the specific maintenance activities. **Provide this information to the District by September 1, 2023 and obtain approval for the removal of these emissions prior to rerunning the HRA**. For highly toxic pollutants such as hexavalent chromium or isocyanates, please provide additional information regarding how the product is used (e.g., aerosol can for painting maintenance of outdoor railings). For the following products, detail how these products are used and provide a justification for the maintenance exemption:

i. SODIUM CHROMATE ANHYDROUS (Product NSN: 6810014579073; SDS Prep Date: 01/18/2018). The Safety Data Sheet (SDS) states that this is a solid compound intended for laboratory use and it contains hexavalent chromium. The 0.75 lb/yr used in 2018 has the potential to create a high risk, depending on the source location and other modeling factors.

ii. SODIUM CHROMATE ANHYDROUS (Product NSN: 6810002402119; SDS Prep Date 05/17/2006). The SDS states that this solid compound contains hexavalent chromium. The 0.8 lb/yr used in 2018 has the potential to create a high risk, depending on the source location and other modeling factors.

c. Two products, URETHANE CONVERTER 811 and AMERSHIELD CURE, emitted by Source ID EE8310 were removed from the chemical usage spreadsheet. The reason for the removal was noted as "Material not used in PSB was disposed of". The removal of these products resulted in approximately 15.25 lb/yr reduction in diisocyanates. Due to the high toxicity of these pollutants, provide additional documentation to verify that they were disposed instead of used.

d. The product HIGH SOLIDS URA-ZEN CATALYST, PART B, emitted by Source ID EE875 was removed from the chemical usage spreadsheet. The reason for the removal was noted as "Used in PSB but not removed from Chem use". The chemical usage spreadsheet, *12 - ChemUsage - Emissions.xlsx*, shows a total usage of 2.41 lb/yr for this product and the paint spray booth spreadsheet, *10 - PSB - Emissions.xlsx*, shows 2.71 lb/yr of this product under DID 107926. Please confirm that the entire 2.41 lb/yr of HIGH SOLIDS URA-ZEN CATALYST, PART B was reported in the paint spray booth spreadsheet under DID 107926.

e. The chemical usage spreadsheet, *12 - ChemUsage - Emissions.xlsx*, shows that approximately 30 lb/yr of NaOH was removed. The exemption used is from CARB's EICG Section III.D(8): *Use of process water or non-contact cooling water which is drawn from municipal water supplies or from other local ground or surface water sources but is not drawn from activities at the facility*. However, the exemption indicates that the process water is exempt, not chemicals added to the process water. For that reason, the District does not approve of the use of this exemption. The original ATEIR calculation assumed an extremely conservative assumption that 100 percent of the usage was emitted. The District will consider more representative calculation methods. **Return the calculation to the original method (i.e., emissions = total usage), or provide a revised emission calculation methodology to the District by September 1, 2023 and obtain approval, prior to rerunning the HRA.**

f. There was 6.6 lb/yr of solid NaOH removed from the chemical usage spreadsheet with the reason given as, "Physical state: Solid". This is not an adequate reason for removal of the emissions, as mixing solid NaOH with water can create emissions. **By September 1, 2023 provide more information to the District regarding how the solid NaOH was used and obtain approval for the removal of these emissions prior to rerunning the HRA.**

g. Via email (from Robin Cobbs to Ramzi Chaabane) on November 30, 2022, the District approved your proposed methodology to calculate MDI emissions from TC-892 PART A with a technical uncertainty factor (TUF) of 10. The spreadsheet, *12 - ChemUsage - Emissions.xlsx*, correctly reports these emissions. For completeness, please include the emission methodology in the final submittal of the ATEIR and HRA.

h. A few products containing isocyanates were removed for maintenance exemptions, but not all pollutants from the product were removed. If the District approves the exemption for a product, remove all pollutants listed for that product from the chemical usage spreadsheet, *12 - ChemUsage - Emissions.xlsx* and the HRA. The specific issues are noted below:

i. 3M MARINE ADHESIVE SEALANT FAST CURE 5200, WHITE; PN 06520, 05220, 06534, 06535 (Product NSN: 8030PHM00045622; SDS Prep Date: 10/29/2014). Methylene diphenyl diisocyanate (MDI) CAS No. 101-68-8 was removed, but other pollutants from this product remain.

ii. 3M MARINE ADHESIVE SEALANT 5200 BLACK PN 06504, PN 05205 (Product NSN: 8030PHM00080059; SDS Prep Date: 10/29/2014). 2,4-/2,6-TOLUENE DIISOCYANATE MIXTURE CAS No. 26471625 was removed, but other pollutants from this product remain.

iii. RUST BULLET (Product NSN: 8010PHM00056194, SDS Prep Date: 07/17/2011 and 08/12/2014). MDI was removed, but other pollutants from this product remain.

iv. CA 8000D ACTIVATOR COMPT (Product NSN: 8010014416029-1; SDS Prep Date: 04/26/2018). HEXAMETHYLENE DIISOCYANATE HOMOPOLYMER (Pollutant ID 1221) was removed, but other pollutants from this product remain.

14. No further action required.