apcd air pollution control district
SANTA BARBARA COUNTY

August 16, 2022

Via Email
Read Receipt Requested

Keith Quinlan
City of Lompoc
1300 W. Laurel Avenue
Lompoc, CA 93436

Re: Conditional Approval of 2018 ATEIP for Lompoc Sanitary Landfill
Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)

Dear Mr. Quinlan:

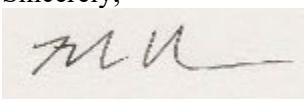
The Santa Barbara County Air Pollution Control District (District) has reviewed your revised Air Toxics Emission Inventory Plan (ATEIP) for inventory year 2018 dated March 23, 2021. Based on our review of the plans, the District *conditionally approves* the ATEIP. The ATEIP conditional approval items are detailed in Attachment A of this letter, which follows the numbering of our second ATEIP comment letter, dated November 10, 2020.

Please submit a final ATEIP and an Air Toxics Emission Inventory Report (ATEIR) by February 17, 2023. Include a response letter with a response to each incompleteness item in Attachment A. Electronic copies of the final ATEIP, ATEIR and response letter should be sent via email to CobbsR@sbcapcd.org.

In addition, responses to ATEIP Conditional Approval Comment Numbers 10, 11 and 29, along with the requested items, are due November 1, 2022.

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: Lompoc Sanitary Landfill 08744 Project File
Lompoc Sanitary Landfill 08744 Toxics File
Toxics Group
Engr Chron File
Golder Associates Inc.

Attachment A: Conditional Approval Items for Lompoc Sanitary Landfill 2018 ATEIP
Attachment B: Excel Spreadsheet: *Lompoc Wind Erosion – Revised by APCD.xlsx*

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ATTACHMENT A

CONDITIONAL APPROVAL ITEMS FOR LOMPOC SANITARY LANDFILL 2018 ATEIP

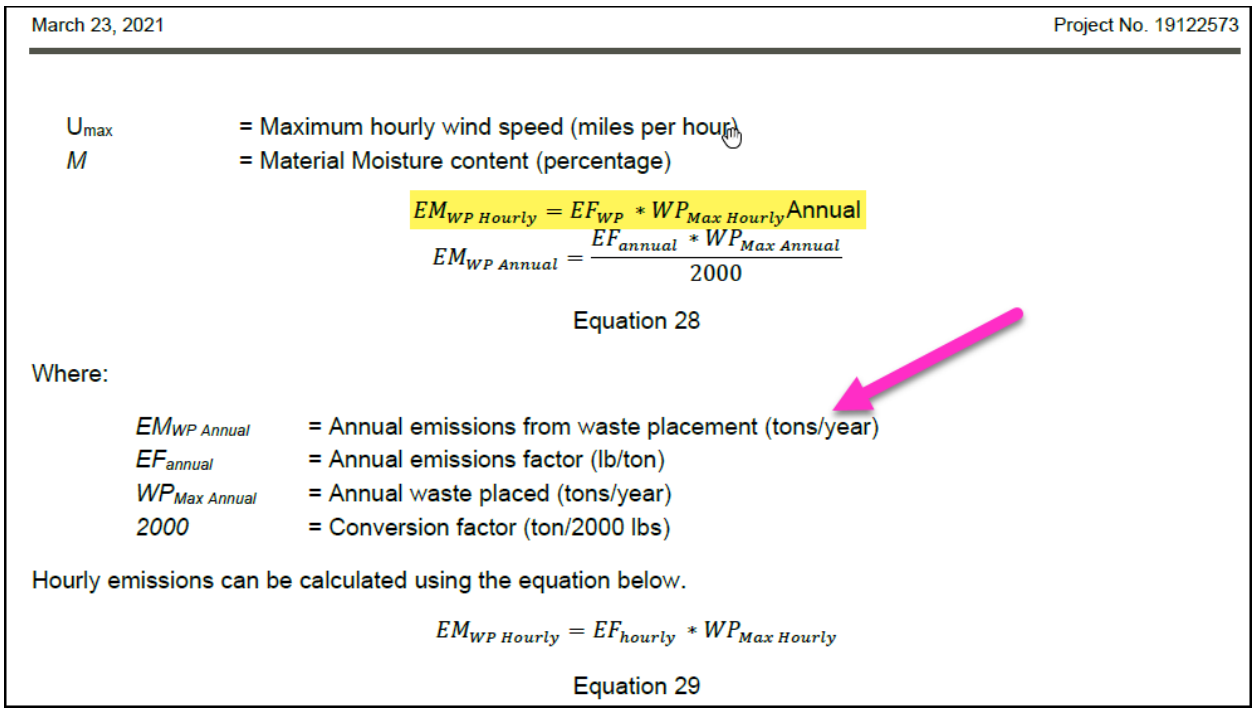
1. Mobile Sources. The location of the Tarp-O-Matic machines, Stack ID TARP_ENG, as shown in Figure 2, *Aerial Photo Map*, and in the *Source Parameters* tab of the Modeling Protocol Tables, changed between the June 2020 version of the ATEIP and the March 2021 version of the ATEIP. However, no explanation was included for the change. It was clarified on August 9, 2022 by Lindsey Angell to Robin Cobbs in a Teams Meeting that this change was a result of using the 2018 aerial photos and maps. Please add a note clarifying the new reference in the final ATEIP.

2. Copy of TAC Emission Factors. No further action required.

3. Road Base and Street Slurry. The response to comments indicates that the language was updated in Section 3.7.3; however, the revision was not made. Update the text as intended.

4. Fugitive Dust.
   - i. TAC Emission Factors. No further action required.
   - ii. Moisture Content and Control Efficiencies. No further action required at this time. These items will be addressed through soil sampling.
   - iii. Data for Haul Road Calculations. No further action required.
   - iv. Wind-driven Fugitive Dust. Update the ATEIP to base the threshold friction velocity on the soil sampling results. In addition, address the following items for the ATEIR:
     a. AP-42 Section 13.2.5 Industrial Wind Erosion, notes that "wind gusts may quickly deplete a substantial portion of the erosion potential. Because erosion potential has been found to increase rapidly with increasing wind speed, estimated emissions should be related to the gusts of highest magnitude." For that reason, the District revised the wind erosion calculations in the attached spreadsheet, *Lompoc Wind Erosion - Revised by APCD.xlsx*, to be based on the wind gust values. Use *Lompoc Wind Erosion - Revised by APCD.xlsx* for the ATEIR calculations.
     b. It is not necessary to calculate the fugitive dust based on hourly disturbances. Daily disturbance (N=365) is adequately conservative. The District revised the wind erosion calculations in the spreadsheet, *Lompoc Wind Erosion - Revised by APCD.xlsx*, to be based on daily disturbances.
     c. Specify the area in acres that is considered unstabilized and show on a map or aerial photo.
   - v. Earth Moving Operations - Scraper. No further action required at this time. This item will be addressed through soil sampling.
   - vi. Earth Moving Operations - Dozer.
     a. No further action required at this time. This item will be addressed through soil sampling.
     b. The District notes that Equations 19 and 20 were updated to Equations 24 and 25. However, the discussion in Section 3.6.2.2 Dozer still refers to Equations 19 and 20. Update the referenced equation numbers in the final ATEIP.
        1. No further action required.
        2. No further action required at this time. This item will be addressed through soil sampling.
   - vii. Earth Moving Operations - Compacting. No further action required.

viii. Bulk Material Handling. There are two minor typos in Section 3.6.3 of the ATEIP. There is an extra equation highlighted in yellow in the screenshot below. Furthermore, the annual emissions should be in units of lb/yr, not tons/year, as shown below with the pink arrow. Remove the highlighted equation and update the annual emissions units to lb/yr.



March 23, 2021 Project No. 19122573

U_{max} = Maximum hourly wind speed (miles per hour)

M = Material Moisture content (percentage)

$$EM_{WP\ Hourly} = EF_{WP} * WP_{Max\ Hourly}\text{Annual}$$

$$EM_{WP\ Annual} = \frac{EF_{annual} * WP_{Max\ Annual}}{2000}$$

Equation 28

Where:

$EM_{WP\ Annual}$ = Annual emissions from waste placement (tons/year)

EF_{annual} = Annual emissions factor (lb/ton)

$WP_{Max\ Annual}$ = Annual waste placed (tons/year)

2000 = Conversion factor (ton/2000 lbs)

Hourly emissions can be calculated using the equation below.

$$EM_{WP\ Hourly} = EF_{hourly} * WP_{Max\ Hourly}$$

Equation 29

5 - 6. No further action required.

7. Particulate Matter from Unpaved Roads (Section 3.1).

i. Control Efficiency. No further action required.

ii. Fleet Emission Factor.

a. Equations 2 and 3 still state that the variables E and VMT_{annual} are based on vehicle classification. However, the discussion in Section 3.0 of the ATEIP correctly indicates that the calculation will be done by fleet (line segment). This is noted for clarification/documentation purposes only. No further action is required.

b. Revise your calculation for the average weight of segment UP2 shown in Table 5, *Average Vehicle Weight by Unpaved Road Segment*. Based on the District's calculations, the average weight of this segment should be 10.0 tons, not 9.4 tons. The miles traveled by type for Commercial vehicle type and Small vehicle type were switched in your calculation (i.e., Commercial average weight of 5.59 tons was multiplied by 1288.1 miles instead of 3579.6 miles).

c. Table 4, *Unpaved Road Vehicle Weight Data*, incorrectly lists the number of Small (Cars, Pickups, Single Axle Trailers) vehicles for the Refuse/Waste Placement Area as 2334, while Appendix D shows 6486 Small vehicles (see screenshots below). Update Table 4 with the correct value of 6486.

Table 4: Unpaved Road Vehicle Weight Data

Vehicle Type	Material Hauled/ Location	Number of Vehicles in 2018	Average Load Weight (tons)	Average Vehicle Weight (tons)	Average Vehicle Weight on Road (tons)	Roadway Segment(s)
End Dumps with WTPFM only	WTPFM/Cover Material Mixing Area	819	22.51	12	23.26	UPV6, (New)
Route/Roll-off Trucks	Refuse/ Waste Placement Area	5075	6.41	16.5	19.71	UPV6, UP2
Commercial (2 Axle Trailers, Dump Box Trucks)	Refuse/ Waste Placement Area	2334	1.41	4.88	5.59	UPV6, UP2
Small (Cars, Pickups, Single Axle Trailers)	Refuse/ Waste Placement Area	2334	0.33	3	3.17	UPV6, UP2
Route/Roll-off Trucks	Recycle Area	790	4.64	16.5	18.82	UP7

Paved Unload/Load Area

Vehicle Types	# Vehicles	Tons	Avg. Tons	Material Types
Route/Roll-off Trucks	269	858	3.19	Metal, Tires, Cardboard, Mattresses, TWW
Commercial (2 Axle Trailers, Dump/Box Trucks)	442	425	0.96	Refuse, Metal, Ewaste, Tires, Cardboard, TWW, Auto Batteries
Small (Cars, Pickups, Single Axle Trailers)	5929	1402	0.24	Refuse, Metal, Ewaste, Tires, Cardboard, TWW, Auto Batteries
Paved Area Totals:	**6,640**	**2,685**		

Unpaved Unload Area

Vehicle Types	# Vehicles	Tons	Avg. Tons	Material Types
End Dumps with WTPFM only	819	18437	22.51	Water Treatment Plant Filter Material (WTPFM)
Route/Roll-off Trucks	5075	32528	6.41	Refuse
Commercial (2 Axle Trailers, Dump/Box Trucks)	2334	3287	1.41	Refuse
Small (Cars, Pickups, Single Axle Trailers)	6486	2141	0.33	Refuse
Route/Roll-off Trucks	790	3666	4.64	GW/WW, soil, asphalt, concrete
Commercial (2 Axle Trailers, Dump/Box Trucks)	1911	1922	1.01	GW/WW, soil, asphalt, concrete
Small (Cars, Pickups, Single Axle Trailers)	11033	3157	0.29	GW/WW, soil, asphalt, concrete
Unpaved Area Totals:	**28,448**	**65,138**		
Paved and Unpaved Area Total:	**35,088**	**67,823**		

Notes:
1) Vehicle/Tons include all incoming transactions of refuse, recyclables, cover and beneficial use materials
2) Outbound recyclable materials are also included from the paved area

iii. Concentration of Pollutants. No further action required.

8. Mileage Unpaved Roads (Section 3.1). Items i. – iii. require no further action. However, based on the new information in the ATEIP, two additional roadway items must be addressed:

   a. Section 3.1 Paved Roads of the ATEIP notes that the length of the paved road is 0.404 miles (round trip 0.808 miles), with the total vehicle miles traveled as 16,301.4 miles (see yellow highlighting in screenshot below). Table 8, *Average Vehicle Weight for Paved Roads*, of the ATEIP shows that there were 40,093 vehicles traveling on the paved road in 2018. Revise the total vehicle miles traveled on paved roads in 2018 to 32,395.1 miles (i.e., 40,093 vehicles * 0.808 miles/vehicle).

   b. The language in Section 3.1 (highlighted in blue in the screenshot below) regarding vehicle weights and the number of vehicles traveling on the paved roads must be removed or updated to reflect the data shown in Table 8, *Average Vehicle Weight for Paved Roads*, of the ATEIP.

Route trucks unloading totaled 8614 or 47% of the vehicle traffic. The remaining vehicles were individual households and some commercial vehicles. The total number of tons of material placed was 39,333 tons. Route trucks averaged 3.75 tons per load and other vehicles averaged 0.72 tons per load.

According to Department of Motor Vehicle records, an empty garbage route truck weighs 16.5 tons. Full trucks enter an unpaved area to unload and leave empty making the mean vehicle weight an average of 16.5 tons and 20.25 tons, or 18.375 tons.

The average on road truck or SUV weighs 3 tons. This would make the average non-route truck vehicle weight 3.36 tons (3 tons empty and 3.72 tons with load). Therefore, the average vehicle weight on paved roads is 10.42 tons (47%*18.375 plus 53%*3.36).

The length of the paved road is 0.404 miles. One round trip equals 0.808 miles. The total vehicle miles traveled on the road in 2018 would be 16,301.4 miles.

The following equation will be used for calculating the annual emissions from paved roads:

$$EM_{C\ annual} = E * VMT_{annual} * WF_C$$

Equation 5

Where:

$EM_{C\ annual}$	= Average Annual Emissions of Pollutant C (lb C/yr)
E	= Paved Road Emission Factor (lb/VMT)
VMT_{annual}	= Annual Vehicle Miles Traveled (miles)
WF_c	= Weight Fraction of Pollutant C (lb TAC/ lb PM)

The paved road emission factor will be calculated using Equation 4 as previously described. In addition to the 18,410 vehicles which entered the site to place waste, workers, suppliers, and inspectors routinely access the site. Assuming each worker drives their own vehicle, and 2 additional vehicles access the site daily, an additional 1,765 vehicles would travel on the paved road in a year. Therefore, the total number of vehicles is 20,175.

The length of the unpaved road is 0.404 miles. One round trip equals 0.808 miles. The total vehicle miles traveled on the road in 2018 would be 16,301.4 miles.

9. DICE Emissions (Section 3.2). No further action is required.

10. Fugitive Landfill Gases Emitted (Section 3.3). Equation 8 of the ATEIP is not consistent with District's spreadsheet provided for calculating the total landfill gas, *Revised Lompoc Sanitary Landfill_2018 Fugitive LFG Emissions for ATEIP.xlsx*. As part of the conditionally approved ATEIP, Section 3.3, Municipal Solid Waste Landfill Fugitives, must be revised to be consistent with the District's spreadsheet. Alternatively, the District will allow CARB's IPCC method for calculating the landfill gas generation. If you intend to use CARP's IPCC method, submit the proposed calculation methodology and all necessary revisions to Section 3.3 of the ATEIP to the District by November 1, 2022. Update the final ATEIP accordingly.

11. TACs Profile for Fugitive Landfill Gases (Section 3.3). Provide the reference (i.e., copy of source test results) for the hydrogen sulfide concentration to the District by November 1, 2022. Furthermore, if the reference is in different units than what is shown in the ATEIP, provide the calculation for the conversion to the District by November 1, 2022.

12. Calculating TACs from Fugitive LFG (Section 3.3). No further action required.

13. Maximum Hourly Emissions of Fugitive LFG (Section 3.3). Your response and ATEIP revision for the maximum hourly emission calculation is approved. However, the discussion on the collection efficiency for

the section indicates that an overall collection efficiency for the landfill of 75 percent will be used. The District notes that this theoretical discussion does not impact the emission calculations as the equations do not include a collection efficiency factor. This is noted for clarification/documentation purposes only. No further action is required.

14 - 22. No further action required.

23. Onsite Receptors (AERMOD Options). The onsite receptor location for the waste drop off changed between ATEIP submittals. The June 2020 ATEIP showed this location to be on east side of the facility while the March 2021 version shows the receptor grid on the west side. It was clarified on August 9, 2022 by Lindsey Angell to Robin Cobbs in a Teams Meeting that this change was a result of using the 2018 aerial photos and maps. Please add a note clarifying the new reference in the final ATEIP.

24 - 25. No further action required.

26. Diesel Engine Modeling Parameters (Source Parameters). There was a significant change in location of the engine on Figure 2: Aerial Photo Map. The June 2020 ATEIP version showed the engine in the MSW_FUG11 area while the March 2021 ATEIP version shows the engine in the RCL_FUG area. No explanation was given for this change. The source parameters tab shows that the UTM coordinates, and stack temperature were also changed between versions. It was clarified on August 9, 2022 by Lindsey Angell to Robin Cobbs in a Teams Meeting that this change was a result of using the 2018 aerial photos and maps. Please add a note clarifying the new reference in the final ATEIP. In addition, clarify the reason for the temperature change.

27 - 28. No further action required.

29. Release Height for UPV3, UPV4, UPV5 (Source Parameters). The requested calculation for release height was not found in the ATEIP; provide the calculation by November 1, 2022.

30 - 34. No further action required.

ATTACHMENT B

Revisions to Wind Erosion Calculation Emission Calculations

The spreadsheet, *Lompoc Wind Erosion – Revised by APCD.xlsx,* is available to download at the following link until August 23, 2022:

https://sbcapcd-my.sharepoint.com/:x:/g/personal/rfc_sbcapcd_org/Ecxynzt3QHlCtDTWMlpnlb8B8pzzPfvYh9f5dUYKJi7-Vg?e=z3CnKf