

MAY 05 2016

Madison Holsinger
Synagro West, Inc.
3110 Gold Canal Dr, Ste E
Rancho Cordova, CA 95670

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-7410
Project Number: N-1150015

Dear Ms. Holsinger:

Enclosed for your review and comment is the District's analysis of Synagro West, Inc.'s application for an Authority to Construct for a biosolids storage operation, at 13757 South Harmon Road in Dos Palos.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Brian Clerico of Permit Services at (559) 230-5892.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:bkc

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

Seyed Sadredin
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San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Biosolids Storage

Facility Name: Synagro West, Inc. dba El Nido/Central Valley Compost

Date: April 22, 2016

Mailing Address: 3110 Gold Canal Drive Suite E
Rancho Cordova, CA 95670

Engineer: Brian Clerico
Lead Engineer: Joven Refuerzo

Location Address: 13757 S. Harmon Road
Dos Palos, CA

Contact Person: Madison Holsinger, Technical Services Director

Telephone: (916) 862-9305

Application #(s): N-7410-5-0

Project #: N-1150015

Deemed Complete: September 3, 2015

I. Proposal

Synagro West, Inc. dba El Nido/ Central Valley Compost (Synagro) has requested an Authority to Construct permit for a new biosolids storage operation. Up to 10,000 wet-tons of biosolids will be stored from January 1 through June 30 each year at their existing co-composting facility.

At present, Synagro trucks the biosolids it accepts from waste water treatment plants either directly to farms for land application or to landfills when demand for the biosolids from farmers is low during the cold weather months. Instead of disposing of the biosolids in a landfill, Synagro proposes to bring the material to its composting facility to store temporarily until the demand from farms for the biosolids picks up, which usually occurs during Spring and early Summer.

The biosolids material stream proposed in this project will be kept separate from the biosolids stream used for the co-composting operation. None of the biosolids received for this project will be composted or become part of the existing co-composting operation permitted under N-7410-1.

This project will trigger Best Available Control Technology requirements for VOC and ammonia (NH₃) and offsets for VOC. The project will also trigger public notification for a new unit having a potential to emit greater than 100 lb-VOC/day.

II. Applicable Rules

Rule 2010 Permits Required (12/17/92)

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)

Rule 4001 New Source Performance Standards (4/14/99)

Rule 4002 National Emissions Standards for Hazardous Air Pollutants (5/20/04)

Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4565 Biosolids, Animal Manure, and Poultry Litter Operations (3/15/07)
Rule 4566 Organic Material Composting Operations (8/18/11)
Rule 8011 General Requirements (8/19/04)
Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities (8/19/04)
Rule 8031 Bulk Materials (8/19/04)
Rule 8041 Carryout and Trackout (8/19/04)
Rule 8051 Open Areas (8/19/04)
Rule 8061 Paved and Unpaved Roads (8/19/04)
Rule 8071 Unpaved Vehicle/Equipment Traffic Areas (9/16/04) California Health & Safety Code Section 41700 (Public Nuisance)
California Health & Safety Code Section 42301.6 (School Notice)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 13757 South Harmon Road in Dos Palos. Per the GoogleEarth aerial view of the site, the facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, school noticing requirements of California Health and Safety Code Section 42301.6 do not apply to this project.

IV. Process Description

The biosolids storage (N-7410-5) will be in a separate, lined, and bermed section from the biosolids used for co-composting (N-7410-1). Beginning no earlier than January 1 of each year, when demand for biosolids from farming operations is low. Synagro will truck surplus biosolids from waste water treatment plants to its co-composting facility in Dos Palos. The expectation is that the biosolids will be received over a 4-month period from January through April. The applicant predicts on a busy day, they could receive as much as 250 wet-tons of biosolids (i.e. 10 trucks × 25 wet-tons per truck).¹ The biosolids will be piled in extended windrows of dimensions 100' by 200' by 5' in the southeast corner of the site (see **Appendix A**). Within 3 hours of receipt, the biosolids will be covered under a waterproof tarp or at least 6 inches of finished compost. As demand for the material increases, Synagro will remove the biosolids from the site until all the biosolids are gone by June 30 of each year.

V. Equipment Listing

N-7410-5-0: SEASONAL BIOSOLIDS STORAGE OPERATION UTILIZING WATERPROOF TARPS OR FINISHED COMPOST AS A COVER

¹ Since the applicant did not wish to commit to a limit on the maximum daily receipt rate of biosolids, the potential to emit calculation will assume all 10,000 tons of biosolids could be received in one day.

VI. Emission Control Technology Evaluation

The storage of biosolids is a source of VOC and ammonia emissions. Covering the biosolids with a waterproof cover or 6 inches of finished compost will achieve at least a 10% reduction in VOC and ammonia emissions according to Rule 4565 over uncontrolled emission rates.

Using covered aerated static pile technology is not an option because the purpose of this project is merely to store the biosolids without altering the material, and aeration would chemically and physically alter the material.

VII. General Calculations

A. Assumptions:

1. VOC and NH₃ are emitted from the storage of biosolids from January 1 through June 30.
2. No PM₁₀ will be assessed to the handling of biosolids as the moisture content according to laboratory testing is sufficiently high (~80%) to ensure negligible PM₁₀ emissions. This assumption is consistent with the assumption used to assess PM₁₀ emissions in project N-1060239, N-7410-1-0.
3. Maximum wet-tons of biosolids received = 10,000 ton/season.
4. The daily potential to emit for VOC and NH₃ will be based on 10,000 ton of material being received in one day
5. The water-proof cover or 6 inches of finished compost within 3 hours of receipt will reduce the emission VOC and NH₃ by 10%. The 10% control is based on Table 1, Land Application Mitigation Measures from Rule 4565. Emissions studies² have shown that a maintained finished compost cover serves as a pseudo-biofilter and reduces the emissions of VOC by ≥ 56%. However, finished compost may not always be available at the site according to the applicant, thus they propose to also use a synthetic weatherproof cover. The 10% reduction attributed to the cover will be a conservative estimate and consistent with Rule 4565.

B. Emission Factors (EF):

Background

The District's 2010 report, "Compost VOC Emission Factors" does not include a VOC (or NH₃) emission factor for the storage or stockpiling of biosolids. Therefore, the District has not formally adopted a general purpose VOC (or NH₃) emission factor for the storage of biosolids.

² Emissions Testing of Volatile Organic Compounds from Greenwaste Composting at the Modesto Compost Facility in the San Joaquin Valley, (California Integrated Waste Management Board Report, 2007). Greenwaste Compost Site Emissions Reductions from Solar-Powered Aeration and Biofilter Layer, SJVAPCD Technology Advancement Program funded study (2013 report). District Staff Report for Rule 4566, Organic Material Composting Operations, Appendix B, Emissions Reductions Analysis.

At present, the only known source of emissions data on the storage of biosolids comes from a 2007 source test conducted at Los Angeles County Sanitation District's Joint Water Pollution Control Plant (see **Appendix B**). The VOC and NH₃ emissions (flux) measurements were made on biosolids "aged" 1 – 2 hours, 26, and 74 hours. The "age" of the biosolids indicates the time elapsed after the sludge has completed the anaerobic digestion and de-watering process at the plant. The District used the average of the three emission flux measurements to derive VOC and NH₃ emission factors for biosolids stockpiling in ATC projects C-1073961, C-1101871, and C-1111582 for Los Angeles County Sanitation District's (LACSD) (C-6048).

The average flux rate over the three days test was 6.16 mg-VOC/m²-min. Using the calculation method from projects C-1073961, C-1101871, and C-1111582, the following average VOC emission rate for biosolids stockpiling is calculated:

$$EF_{\text{VOC stockpiling}} = (6.16 \text{ mg-VOC/m}^2\text{-min}) \times (1 \text{ g/1,000 mg}) \times (1 \text{ lb/453.6 g}) \times (0.3048 \text{ m/ft})^2 \times (1/3 \text{ ft depth}) \times (1,440 \text{ min/day}) \times (27 \text{ ft}^3/1 \text{ yd}^3) \times (1 \text{ yd}^3/2,095 \text{ lb-biosolids}) \times (2,000 \text{ lb/ton}) = \mathbf{0.016 \text{ lb-VOC/wet-ton/day}}$$

If this emission factor were used for the present project, the potential to emit for VOC (uncontrolled) would be calculated as follows:

$$PE_{\text{VOC Stockpiling}} = EF_{\text{VOC stockpiling}} \times \text{Throughput (wet-tons)} \times \text{Storage Duration (days/year)}$$

$$PE_{\text{VOC Stockpiling}} = 0.016 \text{ lb-VOC/wet-ton/day} \times 10,000 \text{ tons} \times 180 \text{ days/year}$$

$$\mathbf{PE_{\text{VOC Stockpiling}} = 28,800 \text{ lb-VOC/year}}$$

To see why this value was deemed unrepresentatively high, one can compare it to the PE calculated from composting the same amount of biosolids using the District's emission factor for biosolids composting published in its 2010 report "Compost VOC Emission Factors."

$$PE_{\text{VOC composting}} = EF_{\text{composting}} (\text{lb-VOC/wet-ton}) \times \text{Throughput (wet-tons)}$$

$$PE_{\text{VOC composting}} = 1.78 \text{ lb-VOC/wet-ton} \times 10,000 \text{ wet-tons}$$

$$\mathbf{PE_{\text{VOC composting}} = 17,800 \text{ lb-VOC/year}}$$

Composting – which is the active management and promotion of an organic decomposition process – should produce more VOC emissions than a stockpile in which the decomposition processes are not being actively promoted. Using an average emission factor (0.016 lb-VOC/ton/day) that is based on stockpiles of ages 0 – 3 days old to represent the emissions from stockpiles that are stored over a much more extended period is not representative and likely overstates the VOC emissions because the emissions from stockpiles is not constant, but rises rapidly upon pile formation, then gradually declines over time until the material is stable, i.e. regarded as non-emitting. This trend is seen in the data Los Angeles County Sanitation District's Joint Water Pollution Control Plant, but more generally in composting windrow formation.

Cow Manure and Carcass Composting Study

The VOC and NH₃ emissions from static, unturned piles of cattle manure were measured in a 2009 study, Air Emissions from Composted Cattle Carcasses, performed by Thomas Card and Charles Schmidt. In that study, VOC and NH₃ emissions from piles of dairy manure from a solids separator and from corral scrapings were measured on days 1, 6, 12, 37, and 65. Although the study implies the piles were composted, the piles were not turned,³ making the piles virtually equivalent to storage piles. The VOC emission factors derived from this study were 0.041 lb-VOC/ton-manure (separated solids) and 0.25 lb-VOC/ton-manure (corral scrapings).

Using the 10,000 ton throughput in this project as a basis for comparison, the VOC emissions from storage is calculated using both the separated solids VOC emission factor and the corral scrapings VOC emission factor.

$$PE_{\text{VOC SeparatorSolids}} = EF_{\text{VOC}} \times \text{Throughput (tons/year)}$$

$$PE_{\text{VOC SeparatorSolids}} = 0.041 \text{ lb-VOC/ton-manure} \times 10,000 \text{ tons/year}$$

$$PE_{\text{VOC SeparatorSolids}} = \mathbf{410 \text{ lb-VOC/year}}$$

$$PE_{\text{VOC Corral Scrapings}} = EF_{\text{VOC}} \times \text{Throughput (tons/year)}$$

$$PE_{\text{VOC Corral Scrapings}} = 0.25 \text{ lb-VOC/ton-manure} \times 10,000 \text{ tons/year}$$

$$PE_{\text{VOC Corral Scrapings}} = \mathbf{2,500 \text{ lb-VOC/year}}$$

However, the District rejected both emission factors as less representative than an emission factor that could be derived from the biosolids data (below).

New Emission Factors Assumptions

Given the duration of biosolids storage proposed for this project extends well beyond the period for which any emissions data is available, new VOC and NH₃ emission factors were derived that use the available emissions data while also taking account of the expected attenuation of VOC (and NH₃) emission rates over the storage period. Thus, the following assumptions serve as the basis for the emission factors derived for this project:

- As the sole data available, the Los Angeles County flux data will be used to derive the VOC and NH₃ emission factors for this project. This will be a very conservative assumption because the test data cover the age of the biosolids when it is emitting at its highest rate, whereas Synagro does not normally receive the material until several days after this period when the biosolids will presumably be emitting at a lower rate.

³ As the piles were relatively small, they were likely not turned to ensure the animal carcasses remained covered. Because the piles were not turned, the District has not regarded the emission factors derived from this study as representative of emissions from dairy manure composting.

- Los Angeles County flux data cover storage pile ages from 0 to 74 hours. For the first 74 hours, the biosolids will emit at the rates indicated in the Los Angeles County source data.
- After hour 74, the VOC and NH₃ emission rates from the storage piles will decrease in a linear manner over time.

The point at which the storage pile becomes stable or ceases to emit will be the end of day 62 counting from the day it is received on site. This age was arrived at by adding the number of days it takes to complete the active (22 days) and curing (40 days) phases of composting, as defined in Rule 4565, after which the material is regarded as stable.

The assumption that the emissions from biosolids storage decay to stability (i.e. zero) after 62 days is supported by the 2009 study, Air Emissions from Composted Cattle Carcasses discussed above. In that study, VOC emissions from piles of dairy manure from a solids separator and from corral scrapings were measured on days 1, 6, 12, 37, and 65. The authors noted that “the emissions [from the piles] decay to essentially the laboratory detection limit for the methods at day 65.” Both VOC and NH₃ emission were measured in the study. The laboratory detection limit is the lowest concentration of a constituent that can be measured by a given test method. Material that is emitting below the detection limit may be regarded as no longer a source of emissions.

New Emission Factors Derivation Steps

Utilizing the above assumptions, VOC and NH₃ emission factors were derived by plotting the Los Angeles County flux rate data versus time (see **Appendix C**), from day 0 to day 62. The total area under this “curve” represents the VOC and NH₃ emissions from the biosolids over the duration of their storage.

The area under this curve was calculated as follows:

- (1) The three measured flux rates (mg-VOC/m²-min) were plotted versus the pile ages;
- (2) A fourth data point was fixed from assuming that after 62 days in storage, the VOC (and NH₃) emission rate is 0 mg-VOC/m²-min;
- (3) The flux emission rates were recalculated in units of lb/ton/day emission rates. (See **Example Calculation 1** on the spreadsheets in **Appendix C**).
- (4) The emission rate in the time period between the measured pile ages is the just average of the emission rates. For example, the emission rate between hours 2 and 26 is taken to be the average of the emission rates measured in hours 2 and 26. (See **Example Calculation 2** on the spreadsheets in **Appendix C**).
- (5) The four average emission rates were multiplied by the respective time period they apply to. Each of these values represents the area of a segment of the curve. (See **Example Calculation 3** on the spreadsheets in **Appendix C**).

(6) The four area segments were summed to obtain the total area under the curve, i.e. the total emission rate over the whole cycle. The same procedure was adopted for NH₃.

The following table summarizes the emission factors derived according to the procedure outlined above:

Biosolids Stockpiling Emission Factors (Uncontrolled)		
Pollutant	lb/wet-ton⁴	lb/wet-ton-day⁵
VOC	0.51	0.026
NH ₃	0.35	0.011

C. Potential to Emit (PE) Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new permit unit, PE = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

Daily PE

The maximum daily VOC and NH₃ emissions are based on the following assumptions:

- The maximum daily emissions occur if all 10,000 tons of biosolids are received on the same day. This extremely conservative assumption was proposed by Synagro to ensure they have flexibility in their permit conditions.
- The maximum daily emissions for VOC (0.026 lb-VOC/wet-ton-day) occur 1 day after the biosolids are received (see **Appendix C**).
- The maximum daily emissions for NH₃ (0.011 lb-VOC/wet-ton-day) occur 3 days after the biosolids are received (see **Appendix C**).

Daily PE₂ = Maximum biosolids on-site (wet-tons) × Maximum emission rate (lb/wet-ton/day) × (1 – Control efficiency of cover)

Daily PE_{2VOC} = 10,000 wet-tons biosolids × 0.026 lb-VOC/wet-ton/day × (1 – 0.10)

Daily PE_{2VOC} = 234.0 lb-VOC/day

⁴ The lb/ton value is used to calculate the annual PE and represents the total VOC (or NH₃) emissions from storing 1 ton of biosolids over its emitting lifetime (62 days).

⁵ The lb/ton-day value is used to calculate the daily PE and is based on the maximum biosolids emission rate, which is at 26 hours for VOC and 74 hours for NH₃ after the biosolids arrive on-site (see **Appendix C**). (The original emissions measurements reflect the time passed since the biosolids completed anaerobic digestion and de-watering at the waste water treatment plant where the study was conducted.)

$$\text{Daily PE}_{2\text{NH}_3} = 10,000 \text{ wet-tons biosolids} \times 0.011 \text{ lb-NH}_3/\text{wet-ton/day} \times (1 - 0.10)$$

$$\text{Daily PE}_{2\text{NH}_3} = 99.0 \text{ lb-NH}_3/\text{day}$$

Annual PE

The maximum annual VOC and NH₃ emissions are based on the receipt of the maximum permitted amount of biosolids for the season (i.e. 10,000 wet-tons) multiplied by the emissions occurring over the storage duration (lb/wet-ton).

$$\text{Annual PE}_2 = \text{Maximum biosolids on-site (wet-ton/year)} \times \text{Biosolids emission rate (lb/wet-ton)} \times (1 - \text{Control efficiency of cover})$$

$$\text{Annual PE}_{2\text{VOC}} = 10,000 \text{ wet-tons biosolids} \times 0.51 \text{ lb-VOC/wet-ton} \times (1 - 0.10)$$

$$\text{Annual PE}_{2\text{VOC}} = 4,590 \text{ lb-VOC/year}$$

$$\text{Annual PE}_{2\text{NH}_3} = 10,000 \text{ wet-tons biosolids} \times 0.35 \text{ lb-NH}_3/\text{wet-ton} \times (1 - 0.10)$$

$$\text{Annual PE}_{2\text{NH}_3} = 3,150 \text{ lb-NH}_3/\text{year}$$

PE Summary		
Pollutant	Daily PE (lb/day)	Annual PE (lb/year)
VOC	234.0	4,590
NH ₃	99.0	3,150

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

The PE values in the following table are from the application review for ATC N-7410-1-1, project N-1141208.

SSPE1 (lb/year)						
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC	NH ₃
N-7410-1-1 (ATC)	0	0	0	0	177,998	292,997
N-7410-2-0	0	0	0	0	0	0
N-7410-3-0	2,560	3	693	484	135	0
N-7410-4-0 (TREU for '3-0)	-	-	-	-	-	-
SSPE1	2,560	3	693	484	178,133	292,997

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

The PE value in the following table for N-7410-5-0 is from Section VII.C.2 of this application review. The PE values in the following table are from the application review for ATC N-7410-1-1, project N-1141208.

SSPE2 (lb/year)						
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC	NH ₃
N-7410-1-1 (ATC)	0	0	0	0	177,998	292,997
N-7410-2-0	0	0	0	0	0	0
N-7410-3-0	2,560	3	693	484	135	0
N-7410-4-0 (TREU for '3-0)	-	-	-	-	-	-
N-7410-5-0	0	0	0	0	4,590	3,150
SSPE2	2,560	3	693	484	182,723	296,147

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

ATC N-7410-1-1 is for an open windrow composting operation. As this operation existed prior to being subject to permits and is uncontrolled, the emissions are regarded as fugitive, and, therefore, will be excluded from the Major Source determination.

PTO N-7410-3-0 is for a transportable trommel screen powered by an IC engine. PM10 emissions from the trommel screen are fugitive, and the engine is classified as non-road. Therefore, all the emissions from this source will be excluded from the Major Source determination.

ATC N-7410-5-0 (this project) is for an uncontrolled biosolids storage operation. The emissions from uncontrolled storage piles are fugitive, and, therefore, will be excluded from the Major Source determination.

Rule 2201 Major Source Determination (lb/year)						
Permit No.	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
N-7410-1-1	0	0	0	0	0	(177,998) 0
N-7410-2-0	0	0	0	0	0	0
N-7410-3-0	(2,560) 0	(3) 0	(693) 0	(693) 0	(484) 0	(135)
N-7410-4-0 (TREU for '-3-0)	0	0	0	0	0	0
N-7410-5-0	0	0	0	0	0	(4,590) 0
Non-fugitive SSPE	0	0	0	0	0	0
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

Fugitive emissions and emissions from non-road engines are excluded from the Rule 2410 Major Source Determination.

PSD Major Source Determination (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase	0	0	0	0	0	0
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or

- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore BE = PE1.

BE (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
N-7410-5-0	0	0	0	0	0	0

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV are: (See 52.21 (b) (23) definition of significant)

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Lead
- Fluorides

- Sulfuric acid mist
- Hydrogen sulfide (H₂S)
- Total reduced sulfur (including H₂S)
- Reduced sulfur compounds
- Municipal waste combustor organics (measured as total tetra-through octa-chlorinated dibenzo-p-dioxins and dibenzofurans): 3.2×10^{-6} megagrams per year (3.5×10^{-6} tons per year)
- Municipal waste combustor metals (measured as particulate matter): 14 megagrams per year (15 tons per year)
- Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride): 36 megagrams per year (40 tons per year)
- Municipal solid waste landfills emissions (measured as nonmethane organic compounds): 45 megagrams per year (50 tons per year)

None of the above pollutants are emitted in this project; therefore, Rule 2410 is not applicable.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix D.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

The biosolids storage is a new emission unit and has a potential to emit of more than 2.0 lb-VOC and 2.0 lb-NH₃ per day. Therefore, BACT is triggered for VOC and NH₃.

b. Relocation of emissions units – PE > 2 lb/day

There are no emissions units being relocated from one stationary source to another. Therefore, BACT is not triggered for relocation of an emission unit.

c. Modification of emissions units – AIPE > 2 lb/day

There are no modified emissions units associated with this project. Therefore, BACT is not triggered for a modified emissions unit.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification. Therefore, BACT is not triggered for SB288/Federal Major Modification purposes.

2. BACT Guideline

As SJVAPCD does not have an existing BACT Guideline for long term storage of biosolids, a new guideline was developed for this project (see **Appendix E**)

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Appendix E**), BACT has been satisfied with the following:

VOC & NH₃: Cover the biosolids with a waterproof cover or 6 inches of finished compost within 3 hours of receipt at the facility.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	2,560	3	693	484	182,723
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for VOC only. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = $(\Sigma[PE2 - BE] + ICCE) \times DOR$, for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

The facility is proposing to install a new emissions unit; therefore BE = 0. Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) = $([PE2 - BE] + ICCE) \times DOR$

PE2 (VOC) = 4,590 lb/year

BE (VOC) = 0 lb/year

ICCE = 0 lb/year

The emission reduction credits proposed to offset the emission increases associated with this project were generated at a site more than 15 miles from Synagro; therefore, the correct distance offset ratio for VOC is 1.5:1.

Assuming an offset ratio of 1.5:1, the amount of VOC ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([4,590 - 0] + 0) \times 1.5 \\ &= 4,500 \times 1.5 \\ &= 6,885 \text{ lb VOC/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (6,885 \text{ lb NO}_x\text{/year}) \div (2 \text{ quarters/year}) \\ &= 3,442.5 \text{ lb/qtr} \end{aligned}$$

As shown in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed over two quarters, results in fractional pounds of offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The biosolids storage occurs only during the first two quarters of the year. Except during a leap year, the 1st quarter has 90 days, while the 2nd quarter has 91 days. Since the 2nd quarter has an extra day, the extra pound will be included in the 2nd quarter.

Therefore the appropriate quarterly emissions to be offset are as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
3,442	3,443	0	0	6,885

The applicant has stated that the facility plans to use ERC certificate N-1357-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #N-1357-1	3,450	995	2,495	0

Rule 2201, Section 4.13.8 allows actual emission reductions for NOx and VOC that occurred between April and November (i.e., 2nd and 3rd quarters) to be used to offset NOx and VOC increases during any period of the year. Thus, the 2nd quarter VOC credits plus the 3rd quarter VOC credits (995 lb + 2,495 lb = 3,490 lb) from ERC N-1357-1 can be used to offset the increase in 2nd quarter emissions (3,443 lb). As seen above,

the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter – 3,442 lb, 2nd quarter – 3,443 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number N-1357-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements.

As seen in Section VII.C.2 above, this project includes a new emissions unit which has daily emissions greater than 100 lb/day for VOC. Therefore, public noticing for having a PE > 100 lb-VOC/day is required.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	2,560	2,560	20,000 lb/year	No
SO _x	3	3	54,750 lb/year	No
PM ₁₀	693	693	29,200 lb/year	No
CO	484	484	200,000 lb/year	No
VOC	178,133	182,723	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	2,560	2,560	0	20,000 lb/year	No
SO _x	3	3	0	20,000 lb/year	No
PM ₁₀	693	693	0	20,000 lb/year	No
CO	484	484	0	20,000 lb/year	No
VOC	182,723	178,133	4,590	20,000 lb/year	No

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for VOC emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

The following conditions will ensure compliance with the assumptions relied on in this application review. The DEL is based on the 10,000 tons of biosolids being received on-site on the same day, or, to explain it another way, the DEL is based on all 10,000 tons of biosolids emitting at the highest rate on the same day. The daily throughput limit and the annual throughput limit of biosolids are both 10,000 wet-tons. Compliance with the annual throughput limit ensures compliance with the daily limit, so no separate daily throughput limit is necessary.

- The requirements of this permit do not apply to the biosolids received and stored for the purpose of co-composting that are subject to Permit to Operate N-7410-1. [District Rule 2201]
- The amount of biosolids received and stored shall not exceed 10,000 wet-tons per year. [District Rule 2201]
- Biosolids shall only be received and stored from January 1 through June 30. [District Rule 2201]
- Within 3 hours of receipt, all biosolids shall be covered with a waterproof covering or at least 6 inches of finished compost. The cover(s) shall remain in place for the duration of storage until the biosolids are removed for offsite transport or adjustments to the cover are necessary to accommodate the addition of newly received biosolids. [District Rule 2201]
- The VOC emissions from the storage of covered biosolids from the time the biosolids are received until they are removed from this site shall not exceed 0.459 lb/wet-ton.⁶ [District Rule 2201]
- The VOC emission rate from the storage of covered biosolids shall not exceed 0.026 lb/wet-ton/day. [District Rule 2201]
- The ammonia emissions from the storage of covered biosolids from the time the biosolids are received until they are removed from this site shall not exceed 0.315 lb/wet-ton.⁷ [District Rule 2201]

⁶ Covered biosolids VOC emission rate = uncontrolled $EF_{VOC} \times (1 - 0.10) = 0.51 \text{ lb-VOC/ton} (0.90) = 0.459 \text{ lb-VOC/ton}$. An extra significant figure is used for this emission factor so that when the emission factor is multiplied by the annual throughput, the annual PE for VOC is obtained.

- The ammonia emission rate from the storage of covered biosolids shall not exceed 0.011 lb/wet-ton/day. [District Rule 2201]
- Finished compost is material that meets at least one of the following criteria: (1) The material emits no more than 4 mg CO₂-C per gram of organic material per day, as measured using the TMECC Method 05-08-B – Carbon Dioxide Evolution Rate; or (2) The material has a Solvita® Maturity Index of 7 or greater, as measured using the TMECC Method 05-08-E – Solvita® Maturity Test; or (3) The material has completed both the active and curing phases of composting. [District Rules 2201 and 4565]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

The applicant will be required to maintain the following records to ensure compliance with the assumptions used to establish the potential to emit of this operation.

- The operator shall maintain records of: (1) the date and time biosolids were received on site; (2) the amount of biosolids received in wet-tons; (3) the date and time the biosolids were covered; (4) the type of cover; and (5) the cumulative wet-tons of biosolids received since January 1 of the current year. [District Rules 1070 and 2201]
- All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2520 Federally Mandated Operating Permits

Since this facility's SSPE does not exceed any Major Source thresholds of Rule 2201 (see Section VII.C.5 above), this facility is not a Major Source, and Rule 2520 does not apply.

⁷ Covered biosolids ammonia emission rate = uncontrolled $EF_{NH_3} \times (1 - 0.10) = 0.35 \text{ lb-NH}_3/\text{ton} (0.90) = 0.315 \text{ lb-NH}_3/\text{ton}$. An extra significant figure is used for this emission factor so that when the emission factor is multiplied by the annual throughput, the annual PE for NH₃ is obtained.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

There are no applicable NSPS subparts to a co-composting facility or its storage of biosolids.

Rule 4002 National Emission Standards for Hazardous Air Pollutants NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

There are no applicable NESHAPs subparts to a co-composting facility or its storage of biosolids.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 or 20% opacity.

The biosolids have a sufficient moisture content (~80%) that visible emissions from material handling are not expected. The following condition will ensure compliance with this requirement:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Since the District has issued permits for this facility, there have been no recorded public nuisance complaints in the District's PAS database. Public nuisance conditions are not expected as a result of the permit revisions proposed in this project. Therefore, the following condition will continue to be listed on the permit to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than 1.0. According to the Technical Services Memo for this project (see **Appendix F**), the total facility prioritization score including this project was greater than 1.0. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

A summary of the risk management review (RMR) presented below:

RMR Summary			
Categories	Bio Solid Storage (Unit '-5-0)	Project Totals	Facility Totals
Prioritization Score	0.55	0.55	>1.0
Acute Hazard Index	0.38	0.38	0.4
Chronic Hazard Index	0.01	0.01	0.01
Maximum Individual Cancer Risk (10 ⁻⁶)	0.15	0.15	3.11
T-BACT Required?	No		
Special Permit Conditions?	No		

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds 1.0×10^{-6} . As shown in the table above, T-BACT is not required for this project. No further risk analysis is required, and compliance with the District's Risk Management Policy is expected.

Rule 4565 Biosolids, Animal Manure, and Poultry Litter

Section 2.0, Applicability:

This rule applies to all facilities whose throughput consists entirely or in part of biosolids, animal manure, or poultry litter and the operator who landfills, land applies, composts, or co-composts these materials.

This *facility* co-composts biosolids; therefore, this rule applies.

Rule 4565 has requirements pertaining to *Landfills* (Section 5.1), *Land Application* (Section 5.2) and *Composting* (Section 5.3). However, Synagro is not engaged in any of these activities in this project at their site. Therefore, there are no requirements in this rule applicable to the storage of biosolids.

Rule 4566 Organic Material Composting Operations

The provisions of this rule apply to composting facilities that compost and/or stockpile organic material.

Composting operations that are subject to Rule 4565, Biosolids, Animal Manure, and Poultry Litter Operations are exempt from all requirements of this rule.

Since Synagro is subject to Rule 4565, it is exempt from the requirements of Rule 4566.

Rule 8011 General Requirements

The definitions, exemptions, requirements, administrative requirements, recordkeeping requirements, and test methods set forth in this rule are applicable to all rules under Regulation VIII (Fugitive PM10 Prohibitions) of the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District.

Regulation VIII requirements, as applicable, will be included on the ATC in this project.

Rule 8021 Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities

The purpose of this rule is to limit fugitive dust emissions from construction, demolition, excavation, and related activities.

Since none of the activities this rule applies to are proposed at this facility, this rule is not applicable to this project.

Rule 8031 Bulk Materials

This rule is applicable to the outdoor handling and storage of any bulk material, which emits visible dust when stored or handled.

The biosolids material in this project is deemed to have a low potential for visible emissions due to its high moisture content (~80%). Nevertheless, the following condition will be included on the ATC to ensure compliance with the requirements of this rule.

- All bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rule 8031]

Rule 8041 Carryout and Trackout

This rule is applicable to all sites that are subject to Rule 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities), Rule 8031 (Bulk Materials), and Rule 8071 (Unpaved Vehicle and Equipment Traffic Areas) where carryout or trackout has occurred or may occur.

The following condition will be included on the ATC to ensure compliance with the requirements of the rule:

- An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041, Section 5.0. [District Rules 8011 and 8041]

Rule 8051 Open Areas

This rule applies to any open area having 0.5 acres or more within urban areas (i.e. city limits), or 3.0 acres or more within rural areas; and contains at least 1,000 square feet of disturbed surface area.

Rule 8011 defines disturbed surface area as an area in which naturally occurring soils, or soils or other materials placed thereon, have been physically moved, uncovered, destabilized, or otherwise modified by grading, land leveling, scraping, cut and fill activities, excavation, brush and timber clearing, or grubbing, and soils on which vehicle traffic and/or equipment operation has occurred. An area is considered to be disturbed until the activity that caused the disturbance has been completed, and the disturbed area meets the stabilized surface conditions specified in this rule.

The storage operation proposed in this project is not expected to involve disturbed open areas. Therefore, the requirements of this rule do not apply.

Rule 8061 Paved and Unpaved Roads

This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.

Synagro does not have any on-site roads; therefore, this rule does not apply.

Rule 8071 Unpaved Vehicle/Equipment Traffic Areas

This rule applies to any unpaved vehicle/equipment traffic area.

Synagro does have equipment traffic areas; therefore, this rule applies. The following conditions will ensure compliance with this rule:

- For unpaved vehicle or equipment traffic areas that have 50 or more annual average daily trips (AADT), or 150 or more vehicle daily trips (VDT), or 25 or more VDT with vehicles having 3 axles or more, the operator shall implement at least one of following control measures to limit visible dust emissions (VDE) to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011: (1) Watering; (2) Uniform layer of washed gravel; (3) Chemical/organic dust stabilizers/suppressants; (4) Vegetative materials; (5) Paving; (6) Roadmix; or (7) Any other method that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road. [District Rules 8011 and 8071]
- Whenever any portion of the site becomes inactive, the operator shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in District Rule 8011. [District Rules 8011 and 8071]

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas Significance Determination

District is a Lead Agency and Project not Covered Under Cap-and-Trade

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions.⁸ The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

⁸The purpose of this project is to give Synagro an alternative to sending the biosolids to a landfill during the winter when demand for the material by farmers is low. Since reducing the amount of organic materials sent to landfills has been identified as a GHG reduction measure under the Waste Management category in the AB 32, California Global Warming Solutions Act of 2006, Scoping Plan, this project is expected to result in a net reduction of GHG emissions.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

The District and Synagro have executed an Indemnification Agreement effective December 31, 2015.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful Rule 2201 Public Noticing period, issue Authority to Construct N-7410-5-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix G.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-7410-5-0	3020-06-H	Miscellaneous	\$111.00

Appendixes

- A: Facility Site Map
- B: Los Angeles County Sanitation Districts Source Test Data
- C: Derivation of VOC and NH₃ Emission Factors
- D: Quarterly Net Emissions Change
- E: Top-Down Best Available Control Technology Determination
- F: Risk Management Review Memo
- G: Draft ATC N-7410-5-0

Appendix A
Facility Site Map

SYNAGRO



1 inch = 250 feet

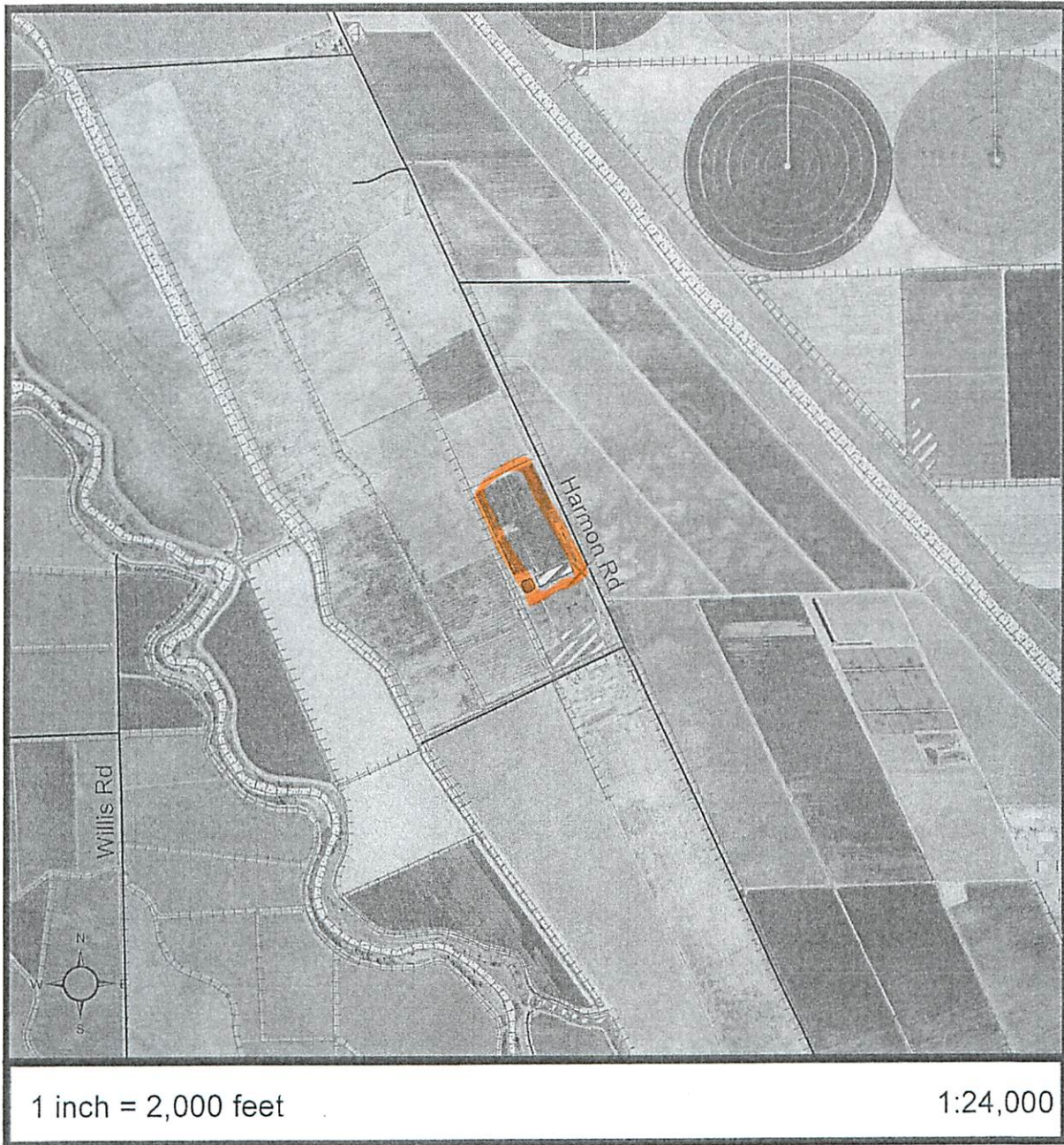
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AERIAL MAP

Legend Date: 12/29/2014

Site Entrance	Intermittent Stream/Water	Drainage Pond
Streets	Canal/River/Aqueduct	Intermittent Waterway/Pond
Road/Hwy	Storage Area	Reservoir

SYNAGRO



AERIAL MAP

Legend Date: 12/29/2014

Site Entrance	Intermittent Stream/Water	Drainage Pond
Streets	Canal/River/Aqueduct	Intermittent Waterway/Pond
Road/Hwy	Storage Area	Reservoir

Appendix B

Los Angeles County Sanitation Districts Source Test Data

CE Schmidt, Ph.D.
Environmental Consultant

TECHNICAL MEMORANDUM

**ASSESSMENT OF AIR EMISSIONS FROM
FROM FRESH AND AGED BIOSOLIDS
CARSON FACILITY**

Prepared For:

Mr. Greg Adams
Assistant Department Engineer
Air Quality Engineer
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24501 S. Figueroa Street
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Prepared By:

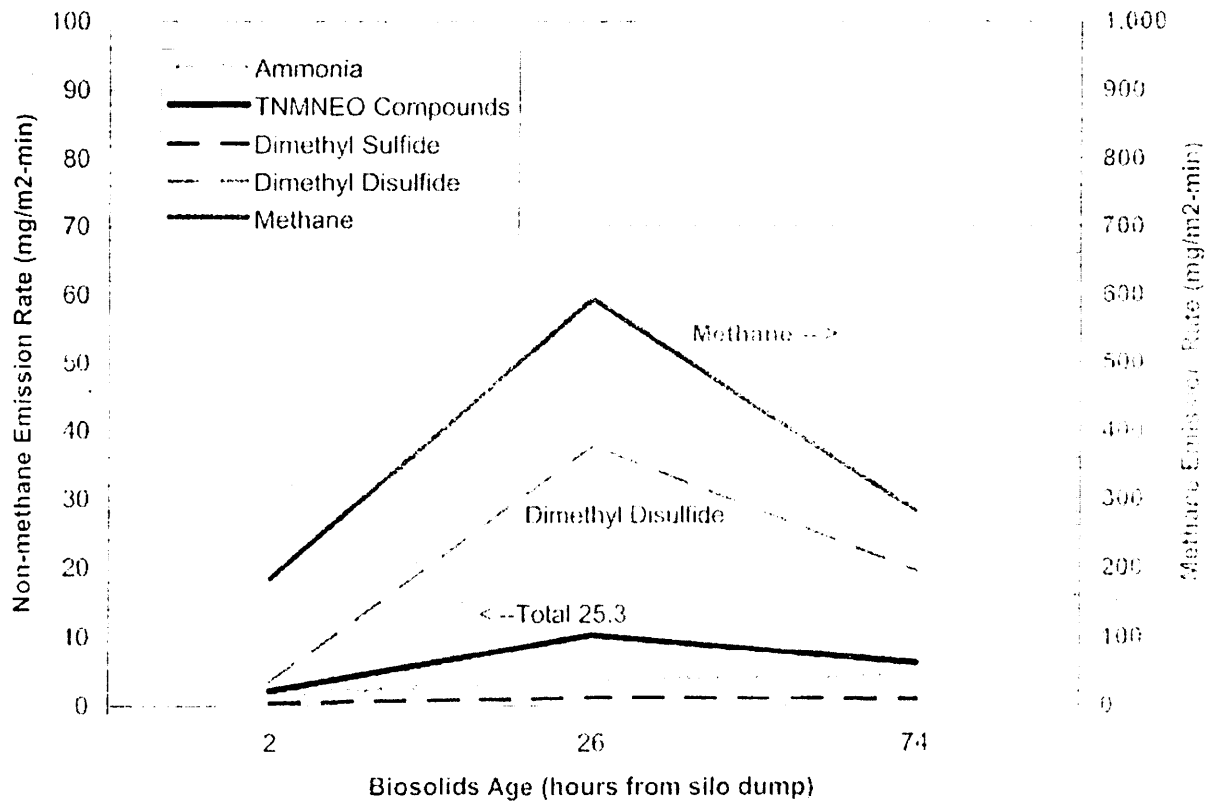
Dr. C.E. Schmidt
Environmental Consultant
19200 Live Oak Road
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Mr. Tom Card
Environmental Management Consulting
41125 278th Way SE
Enumclaw, WA 98022

October 2007

Surface Emissions (mg/m²-min)

Compound	Pile Age (hours)			Average
	2	26	74	
Ammonia	1.64	3.77	4.31	3.24
Methane	184.09	593.88	281.97	353.31
TNMNEO Compounds	2.10	10.24	6.13	6.16
Dimethyl Sulfide	0.39	1.16	0.93	0.83
Dimethyl Disulfide	3.25	37.92	19.38	20.18



CE Schmidt, Ph.D.
Environmental Consultant

EXECUTIVE SUMMARY

An air emissions test was conducted at the Los Angeles County Sanitation Districts' Joint Water Pollution Control Plant (JWPCP) located in Carson, California. Testing was conducted on fresh and aged biosolids material on August 29, 2007 in order to determine the air emissions of ammonia, total hydrocarbon compounds, and speciated hydrocarbon compounds. These data were collected for purpose of collecting air emission factors to be used in estimating air emissions from biosolids compost facilities.

The program consisted of testing air emissions from three different ages of biosolid material. Batches of biosolids were placed in the back of a truck trailer over a three day period and stored on site prior to testing. The material was representative of fresh biosolids (1-to-2 hours aged), one day old biosolids (26 hour aged), and three day old biosolids (74 hours aged). The testing is summarized below: Remove references to CSD TO-12 sampling

TEST	LOCATION	25.3	207.1	TO-14	TO-15
Fresh	Top 1	G-103	A-103	N/A	N/A
	Side 1	G-102	A-102	N/A	N/A
	Side 2	G-101	A-101	S-101	T-101
26 Hr Aged	Top 1	G-106	A-106	N/A	N/A
	Side 1	G-105	A-105	N/A	N/A
	Side 2	G-104	A-104	S-102	T-102
74 Hr Aged	Top 1	G-109	A-109	N/A	N/A
	Side 1	G-108	A-108	N/A	N/A
	Side 2	G-107/-110	A-107/-110	S-103/-105	T-103/-104
Blank		G-111	A-111	S-105	T-105

CE Schmidt, Ph.D.
Environmental Consultant

Project compounds were detected using a real time instrument for total hydrocarbon compounds, colorimetric tube for ammonia, SCAQMD Method 25.3 for total non-methane non-ethane organic compounds (TNMNEOCs), SCAQMD Method 207.1 for ammonia, USEPA Methods TO-14 for speciated sulfur compounds, and USEPA Method TO-15 (GC/MS) for speciated hydrocarbon compounds. Air emission testing was conducted using the USEPA surface emission isolation flux chamber (flux chamber) on all sources following the USEPA protocol. At equilibrium, all flux tests were screened for ammonia emissions using colorimetric tube detection (about 0.05 ppmv sensitivity) and hydrocarbon gases using a real-time field instrument (flame ionization detection- FID at about 0.010 ppmv sensitivity). Field testing also included field instrument calibration, blank sample collection (typically one blank per sample method per day), and replicate sample collection. Advective flow into the flux chamber was determined by using a tracer (10% helium) in the sweep air by the tracer-dilution method. Helium was reported as a study compound detected by GC/TCD in the SCAQMD 25.3 analysis.

Air emissions data are provided herein representing target species emissions from fresh and aged biosolids material. These data can be used as emission factors so that air emissions from biosolid sources on site can be added to the compost site emissions.

Appendix C

Derivation of VOC and NH₃ Emission Factors

VOC Emission Factor Calculation

Hours	Days	VOC Flux (mg/m ² -min) from Source Test	VOC (lb/ton/day) from Calculation (1)	Average VOC emission rate between measurements (lb/ton/day) (2)	# Days between "points"	VOC (lb/ton) Area under "Curve" (3)	Max. daily emission rate (used for daily PE)
0	0	0	0.0000				
2	0.08	2.1	0.0053	0.00266	0.0833	0.0002	
26	1.08	10.24	0.0259	0.01563	1.0000	0.0156	Lifetime emissions over storage duration (used for annual PE)
74	3.08	6.13	0.0155	0.02073	2.0000	0.0415	
1488	62.00	0	0.0000	0.00776	58.9167	0.4574	
Total area under curve =						0.5147	EF (VOC) Rounded to 0.51 lb-VOC/ton

density = 2095 lb/yd³
test depth : 3 ft

(1) Example Calculation, to convert flux rates to units of lb/ton/day; taking the data from hour 26: flux = 10.24 mg-VOC/m²-min (LA County Source Test). Material depth = 3 ft. (LA County Source Test); Material density = 2,095 lb/yd³ (Synagro).

$$\text{VOC (lb/ton/day)} = (10.24 \text{ mg-VOC/m}^2\text{-min}) \times (1 \text{ g/ 1,000 mg}) \times (1 \text{ lb/ 453.6 g}) \times (0.3048 \text{ m/ft})^2 \times (1/ 3 \text{ ft depth}) \times (1,440 \text{ min/ day}) \times$$

(2) Example Calculation, taking the data from hours 2 and 26:

$$\text{Average VOC emission rate between measurements (lb/ton/day)} = (0.0053 + 0.0259) / 2$$

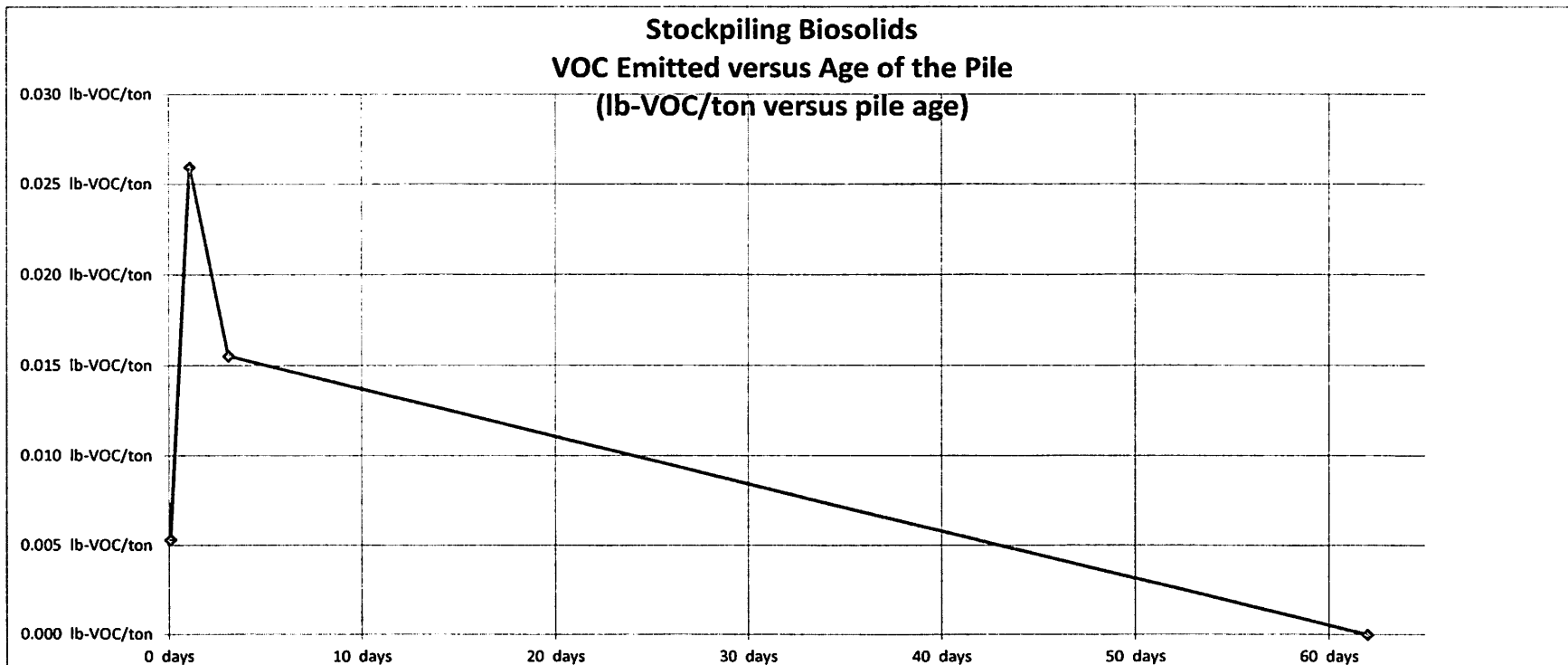
$$\text{Average VOC emission rate between measurements (lb/ton/day)} = 0.01563 \text{ lb/ton/day}$$

(3) Example Calculation for area under curve between hour 26 to hour 74

$$\text{Area (lb/ ton)} = \text{Average VOC emission rate between "points"} \times \# \text{ Days between "points"}$$

$$\text{Area (lb/ ton)} = 0.02073 \text{ lb/ton/day} \times 2.000 \text{ days}$$

$$\text{Area (lb/ ton)} = 0.0415 \text{ lb/ton}$$



Ammonia Emission Factor Calculation

Hours	Days	NH3 Flux (mg/m ² -min) from Source Test	NH3 (lb/ton/day) from Calculation (1)	Average NH3 emission rate between measurements (lb/ton/day) (2)	# Days between "points"	NH3 (lb/ton) Area under "Curve" (3)	
0	0.00	0	0.0000				Max. daily emission rate (used for daily PE)
2	0.08	1.64	0.0042	0.0021	0.0833	0.0002	Lifetime emissions over storage duration (used for annual PE)
26	1.08	3.77	0.0095	0.0069	1.0000	0.0069	
74	3.08	4.31	0.0109	0.0102	2.0000	0.0205	
1488	62.00	0	0.0000	0.0055	58.9167	0.3216	
Total Area under Curve =						0.3491	EF (NH3) Rounded to 0.35 lb-NH3/ton

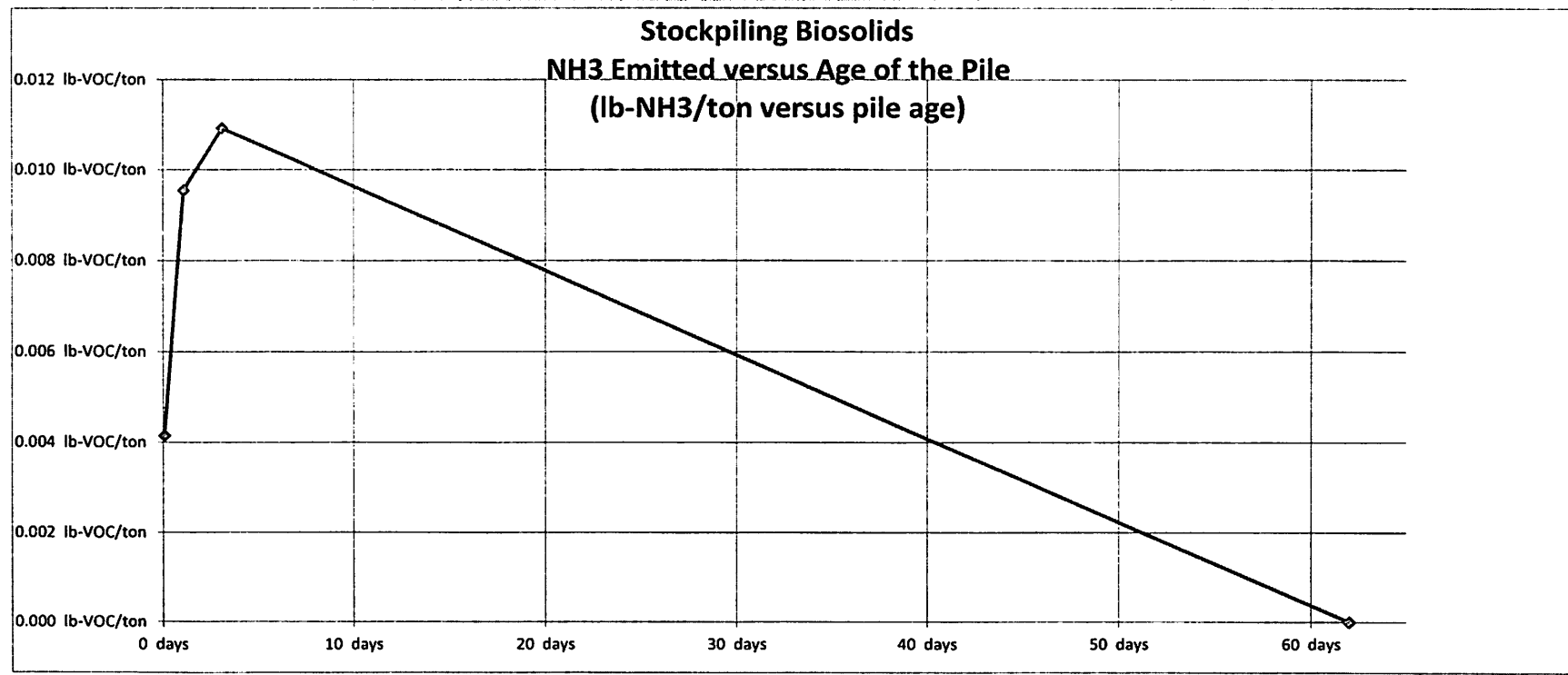
density = 2095 lb/yd³
test depth : 3 ft

(1) Example Calculation, to convert flux rates to units of lb/ton/day taking the data from hour 26: flux = 3.77 mg-NH₃/m²-min (LA County Source Test). Material depth = 3 ft. (LA County Source Test); Material density = 2,095 lb/yd³ (Synagro).

$$\text{NH}_3 \text{ (lb/ton/day)} = (3.77 \text{ mg-NH}_3/\text{m}^2\text{-min}) \times (1 \text{ g} / 1,000 \text{ mg}) \times (1 \text{ lb} / 453.6 \text{ g}) \times (0.3048 \text{ m}/\text{ft})^2 \times (1 / 3 \text{ ft depth}) \times (1,440 \text{ min}/\text{day}) \times (27 \text{ ft} / 1$$

(2) Example Calculation, taking the data from hours 2 and 26:
Average NH₃ emissions rate between measurements (lb/ton/day) = (0.0042 + 0.0095) / 2
Average NH₃ emissions rate between measurements (lb/ton/day) = 0.0069 lb/ton/day

(3) Example Calculation for area under curve between hour 26 to hour 74
Area (lb/ ton) = Average NH₃ emission rate between "points" × # Days between "points"
Area (lb/ ton) = 0.0102 lb/ton/day × 2.000 days
Area (lb/ ton) = 0.0205 lb/ton



Appendix D
Quarterly Net Emissions Change

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

As discussed in Section VII.A, this facility is a seasonal source that only operates during the 1st and 2nd quarters. Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 2 \text{ quarters/year} \\ &= 4,590 \text{ lb-VOC/year} \div 2 \text{ qtr/year} \\ &= 2,295 \text{ lb-VOC/qtr} \end{aligned}$$

$$\begin{aligned} \text{PE1}_{\text{quarterly}} &= \text{PE1}_{\text{annual}} \div 2 \text{ quarters/year} \\ &= 0 \text{ lb-VOC/year} \div 2 \text{ qtr/year} \\ &= 0 \text{ lb-VOC/qtr} \end{aligned}$$

Quarterly NEC [QNEC]					
	NO _x (lb/qtr)	SO _x (lb/qtr)	PM ₁₀ (lb/qtr)	CO (lb/qtr)	VOC (lb/qtr)
PE2	0	0	0	0	2,295
PE1	0	0	0	0	0
1 st Quarter	0	0	0	0	2,295
PE2	0	0	0	0	2,295
PE1	0	0	0	0	0
2 nd Quarter	0	0	0	0	2,295
PE2	0	0	0	0	0
PE1	0	0	0	0	0
3 rd Quarter	0	0	0	0	0
PE2	0	0	0	0	0
PE1	0	0	0	0	0
4 th Quarter	0	0	0	0	0

Appendix E

Top-Down Best Available Control Technology Determination

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 6.4.14

Emission Unit: Biosolids Storage (Not Intended for Composting)

Industry Type: Co-composting

Equipment Rating: Any

Last Update: April 14, 2016

Pollutants	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC and NH ₃	Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility. (10% VOC & NH ₃)	Store piles inside an enclosure venting to VOC & NH ₃ control device(s) (e.g. biofilter or equivalent). (80% VOC & NH ₃)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 6.4.14.a

Emission Unit: Biosolids Storage (Not Intended for Composting)

Equipment Rating: 10,000 wet-tons.

Facility: Synagro West, Inc. dba El Nido/Central Valley Compost

References: N-7410-5-0;
Project N-1150015

Location: 13757 South Harmon Road,
Dos Palos

Date of Determination: April 14, 2016

Pollutant(s)	BACT Requirements
VOC and NH ₃	Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility.

BACT Status: **Achieved in Practice** **Small Emitter** **TBACT**

Technologically Feasible

Store piles inside an enclosure venting to VOC & NH₃ control device(s) (e.g. biofilter or equivalent)

At the time of this determination achieved in practice BACT was equivalent to technologically feasible BACT

Contained in EPA approved SIP

The following technologically feasible option was not cost effective:
Store piles inside an enclosure venting to VOC & NH₃ control device(s) (e.g. biofilter or equivalent)

Mail to: CAPCOA BACT Clearinghouse Project Assessment Branch P.O. Box 2815 Sacramento, CA 95812	For CAPCOA use only		
	Record No.: _____ Codes - EPA Source: _____ ARB Sc: _____, Ctrl: _____	; Form No.: _____ ; SCAQMD: _____ ; BLIS Process: _____	; BLIS District Code: _____ ; EPA ID No.: _____ ; AIRS Facility No.: _____
CAPCOA BACT DETERMINATION REPORTING FORM			
Instructions: Complete this form when issuing an authority to construct. Please use one form per determination (i.e. pollutant). Please use one form per determination (i.e. pollutant) Section A need only be completed on one form in the case of a source with multiple determinations. See the reverse side for descriptions of the field identifiers used below. Please attach a copy of the permit or permit conditions if practical. Please call (916)327-5601 for clarification of any questions. (1/5/94)			

SECTION A. Source Information

Company and Project Name: Synagro West, Inc. dba El Nido/Central Valley Compost

Facility Address: 13757 South Harmon Road, Dos Palos
 Authority to Construct No.: N-7410-5-0
 SIC Code: _____
 Authority to Construct Issue Date: June 2016
 Application No.: N-1150015 ;
 District: SJVUAPCD ; District Contact: Arnaud Marjollet; Phone No.: (559) 230-5900

Est. Startup Date: 2016; Today's Date: 4/14/16; Permit Unit Status: New

Basic Equip./Process: Storage of Biosolids (not serving as a co-compost feedstock)

Rated Capacity: 10,000 wet-tons.; Output: N/A ; SCC Code: _____

Fuel Type: n/a; Backup Fuel(s): N/A ; Project Cost: est.

SECTION B. Control Data Pollutants: VOC and NH₃

Control Equip. Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt.

Emissions: Uncontrolled: 260.0 lb-VOC/day and 110.0 lb-NH₃/day
 Controlled Limits: 234.0 lb-VOC/day and 99.0 lb-NH₃/day

Enforceable Permit Emissions Limit(s): Maximum throughput 10,000 wet-tons/year

Emission Type: area; Cost of Control Equipment:-

Regulatory Requirement: *District-Defined BACT* *District-Defined LAER* *Other: N/A*

BACT/LAER Specification: Reference or Basis: SJVUAPCD

Mass Emission Rate: N/A ; Destruction efficiency (%): N/A

Normalized Mass Emission Rate: N/A lbm/MMBtu; N/A g/bhp-hr; N/A lbm per ton input

Emission Concentration: N/A Other: N/A

Method of Compliance Verification: Records

Other Relevant Permit Limits: Time of Operation: N/A Fuel use: N/A Percent Capacity/Use: N/A

BACT ANALYSIS

Biosolids Storage

Facility Name: Synagro West, Inc. dba El Nido/Central Valley Compost

Date: March 16, 2016

Mailing Address: 6943 N Golden State Blvd
Fresno, CA 93722

Engineer: Brian Clerico
Lead Engineer: Joven Refuerzo

Location Address: 13757 S. Harmon Road
Dos Palos, CA

Contact Person: Dale Gretzinger, Western Region General Manager

Telephone: (916) 838 - 9501

Application #(s): N-7410-5-0

Project #: N-1150015

Deemed Complete: September 3, 2015

I. Proposal

Synagro West, Inc. dba El Nido/ Central Valley Compost (Synagro) has requested an Authority to Construct permit for the seasonal storage of up to 10,000 wet-tons of biosolids at their existing co-composting facility. The proposed storage period is January 1 through June 30.

At present, Synagro trucks the biosolids it accepts from waste water treatment plants either directly to farms for land application or to landfills when demand for the biosolids from farmers is low during the cold weather months. Instead of disposing of the biosolids in a landfill, Synagro proposes to bring the material to its composting facility to store temporarily until the demand from farms for the biosolids picks up, which usually occurs during Spring and early Summer.

The biosolids material stream proposed in this project will be kept separate from the biosolids stream used for the co-composting operation. None of the biosolids received for this project will be composted or become part of the existing co-composting operation permitted under N-7410-1.

This project will trigger Best Available Control Technology requirements for VOC and ammonia (NH₃).

II. Process Description

The biosolids storage will be in separate, lined and bermed section from the biosolids used for co-composting. Beginning January 1 of each year, when demand for land application of biosolids from farming operations is low. Synagro will truck surplus biosolids from waste water treatment plants to its co-composting facility in Dos Palos. The maximum amount of biosolids that will be received in any one day will be 250 wet-tons (10 trucks at 25 wet-tons per truck). The biosolids will be piled in extended windrows of dimensions 100' by 200' by 5' in the southeast corner of the site. Within 3 hours of receipt, the biosolids will be covered under a waterproof tarp or at least 6 inches of finished compost. The biosolids will remain covered until they are loaded out for removal from the site. As demand for the material picks up, Synagro will remove the biosolids from the site until all the biosolids are gone by June 30 of each year.

Operating schedule: 24 hours/day, 180 days/year (January through June)

III. EMISSION CONTROL TECHNOLOGY EVALUATION:

A. BACT Applicability

District Rule 2201 requires BACT to be applied to any new emissions unit with a potential to emit of any pollutant greater than 2.0 lb/day. Since the potential to emit for the biosolids storage operation is greater than 2.0 lb/day for VOC and for NH₃, BACT is triggered for these pollutants.

B. BACT Policy

The District does not have any BACT Guidelines in its Clearinghouse that would cover biosolids storage. The District developed a BACT Guideline for "Biosolids Receiving and Feedstocks Mixing" for Los Angeles County Sanitation Districts (LACSD), C-6048, project C-1111582. However, that guideline applies to co-composting operations receiving > 300,000 wet-tons annually of biosolids. In the present project, Synagro has proposed to receive and store up to 10,000 wet-tons seasonally, a rate which is 30 times less than LACSD. Therefore, a new BACT guideline is being developed with this project.

The following other published BACT Guidelines were consulted to determine potential control technologies for this class and category of operation:

- The U.S. Environmental Protection Agency (USEPA) RACT/BACT/LAER Clearinghouse,
- California Air Resources Board (CARB) BACT Clearinghouse,
- California Air Pollution Control Officers Association (CAPCOA) BACT Clearinghouse,
- Sacramento Metropolitan Air Quality Management District (SMAQMD),
- Santa Barbara County Air Pollution Control District (SBCAPCD),
- South Coast Air Quality Management District (SCAQMD),
- Bay Area Air Quality Management District (BAAQMD), and
- Yolo-Solano Air Quality Management District (YSAQMD)

However, none of the above sources had a published BACT guideline for biosolids storage operations.

Technology Transfer Analysis

The BACT guideline developed for LACSD is reviewed below for potential technology transfer.

LACSD, project C-1111582 Guideline, Biosolids Receiving and Feedstocks Mixing, lists the following controls for VOC and NH₃:

Achieved in Practice (VOC and NH₃)

1. ≥ 80% overall control (enclosed vented to biofilter with ≥ 80% control)

Technologically Feasible (VOC)

1. 98% overall control (enclosed vented to thermal/catalytic oxidizer)
2. 95% overall control (enclose vented to carbon adsorption unit)

Technologically Feasible (NH₃)

1. 99% overall control (enclose vented to wet scrubber)

First, regarding the Achieved-in-Practice option, total enclosure venting to a biofilter is not an Achieved-in-Practice option for an operation of the size Synagro is proposing; therefore, in the guideline proposed for this project, it will be classified as Technologically Feasible.

Second, as will be discussed below, the control device listed as Achieved-in-Practice – the biofilter – controls both VOC and NH₃, whereas the control devices listed under the Technologically Feasible options are only effective against either VOC or NH₃. This is an important consideration because most likely BACT will be triggered for both pollutants.

The top Technologically Feasible control option for VOC is thermal or catalytic oxidation. However, biosolids storage produces significant amounts of NH₃ along with the VOC. This NH₃ is a potential source of NO_x emissions if it is not removed before the oxidation of VOC or treated (as NO_x) after the oxidation of VOC. Thus, the thermal oxidizer would also require either the use of a wet scrubber to remove the NH₃ prior to entering the thermal/catalytic oxidizer or a reducing catalyst (e.g. similar to SCR) after the thermal/catalytic oxidizer capable of reducing the NO_x to N₂. By itself, thermal or catalytic incineration is not a Technologically Feasible option because of the potential for large amount of collateral NO_x emissions.

Carbon adsorption is listed as a Technologically Feasible VOC control option. Generally speaking, activated carbon is a feasible control where the mass flow rates are relatively low (e.g. soil remediation). In the present project, the potential VOC emissions are similar to what are found in soil remediation operations, so carbon may be a feasible option for VOC control. However, carbon is not an effective control for NH₃.¹

Similarly, wet scrubbers are effective for control of NH₃ because NH₃ is very soluble in water; however, their effectiveness on VOC is highly dependent on the types of VOC compounds emitted. Hence, wet scrubbing was listed as control for NH₃ but not for VOC.

An additional consideration is that carbon adsorption and wet scrubbers also have a disadvantage in that both technologies work by phase transfer of contaminants (i.e. cross-media contamination) from the air into a solid or liquid medium so that the spent carbon or scrubber solution must be disposed of or treated in such a way to avoid re-emitting the adsorbed air contaminants. By comparison, a biofilter controls the air contaminants by biological degradation, thereby eliminating the contaminant disposal problem.

¹ "Ammonia adsorption in a fixed bed of activated carbon," *Bioresour Technol.* 2007 Mar;98(4):886-91. Epub 2006 Jun 5. The highest ammonia adsorption rate on activated carbon was less than 0.002 g ammonia/ g carbon, which is 100 times less than the generally accepted factor for most VOCs of ~0.2 g/ g carbon.

Therefore, thermal/catalytic oxidation, carbon adsorption, and wet scrubbing will not be listed as Technologically Feasible control in the guideline developed here because (1) the potential for collateral NOx emissions from thermal/catalytic oxidation; (2) thermal/catalytic oxidation, carbon adsorption, and wet scrubbing cannot be used alone to treat both VOC and NH₃; and (3) the problem of cross media contamination from carbon adsorption and wet scrubbing.

The biofilter does not have any of the above disadvantages; therefore, the biofilter will be listed as the preferred control device in this guideline. However, the guideline will include language allowing "or equivalent" control devices which would allow the use of thermal/catalytic oxidation, carbon adsorption, and wet scrubbing should project specific circumstances warrant their use.

Applicable Rules:

District Rule 4565 Biosolids, Animal Manure, and Poultry Litter Operations, has two sections that touch on the storage of biosolids: Section 5.1, Landfill Requirements and Section 5.2, Land Application Requirements.

Section 5.1, Landfill requires an operator to cover biosolids with 6 inches of finished compost, 6 inches of soil, or a waterproof covering within 24 hours of receipt.

Section 5.2 Land Application requires an operator to cover biosolids with 6 inches of finished compost, 6 inches of soil, or a waterproof covering within 3 hours of receipt for material not immediately land applied.

Although Synagro is not land applying the material at their facility, what they are proposing can be regarded as a version of land application with their site serving as the storage location.

South Coast Rule 1133.2, Emission Reductions from Co-Composting Operations, does not have any requirements related to the storage of biosolids.

SJVAPCD Permits

Los Angeles County Sanitation Districts have commenced construction on two co-composting feedstocks mixing buildings (C-6048-19-7 and '-8) venting to biofilter(s). The permitted capacity of the operation is 500,000 wet-tons of biosolids per year.

South Kern Industrial Center has a co-composting feedstocks mixing building venting to a biofilter (S-4212-1). The permitted capacity of the operation is 350,000 wet-tons of biosolids per year.

SCAQMD Permits

The Inland Empire Regional Composting Authority (IERCA) is a public entity operating an enclosed composting facility receiving up to 150,000 tons of biosolids inside a 410,000 sq. ft. building with a subsurface aeration system (800,000 cfm) venting to a biofilter. Because the capital and operating costs of this facility were subsidized by public funds, it should not be

used as an indicator for what is Achieved-in-Practice for private entities. For example, IERCA budgets \$1,000,000 annually for the maintenance of biofilter media.²

C. BACT Analysis for VOC

VOC is emitted from the off-gassing and decomposition of the biosolids.

Step 1 - Identify All Possible Control Technologies

The control technology options include:

- Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility. (Achieved in Practice)
- Store piles inside an enclosure venting to a VOC control device (e.g. biofilter or equivalent). (Technologically Feasible, ≤ 300,000 tons)

The “or equivalent” designation would allow for the flexibility to install a wet scrubber, carbon adsorption, or a thermal/catalytic oxidizer should project specific circumstances warrant.

The enclosure in this case cannot be a flexible cover drawing air to the biofilter (or other control) because that would entail drawing air through or immediately around the pile, thereby inducing the biosolids to compost. The intent is to store the material without chemically or physically altering it; composting the material would alter it.

Step 2 - Eliminate Technologically Infeasible Options

None of the options are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Control Option #1 in the table below based on (1) 100% capture of emissions by the enclosure, and (2) the biofilter achieving 80% control of VOC emissions. Biofilters for LACSD (C-6048-7 and -8) and South Kern Industrial Center (S-4212-1) are required to achieve 80% control of VOC by permit condition. South Kern has demonstrated an ability to meet the 80% VOC control limit consistently.

The 10% control of VOC attributed to the cover is based on Rule 4565, Section 5.1.2 and Table 1, Mitigation Measure #4, where any alternative VOC mitigation measure proposed by an applicant that would be accepted as equal to covering must demonstrate at least a 10% reduction in VOC emissions.

² 2015/2016 IERCA Adopted budget. <http://www.ierca.org/rpt/reports.html>.

Finished compost has been used as a pseudo-biofilter and shown to be an effective control for VOC and NH₃, reducing VOC more than the 10% reduction attributed here.^{3, 4} However, the amount of VOC reductions achieved by applying at least 6 inches of finished compost cover on a static pile of biosolids has not been established by source testing, and the applicant is not proposing to meet greater than the 10% reduction indicated in Rule 4565, which would require source testing to verify; therefore, the 10% reduction will be assumed.

Technology Rank by Control Effectiveness			
Rank	Option	% VOC Control	Source
1.	Store piles inside an enclosure venting to a VOC control device (e.g. biofilter or equivalent).	80	BACT Guideline for ATC project C-1111582 and PTO S-4212-1-3
2.	Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility.	10	Rule 4565, Section 5.1.2 and Table 1, #4

Step 4 - Cost Effectiveness Analysis

The applicant has proposed option #2 from the table above. Option #1 is a more effective control; therefore, a cost analysis must be performed to determine if option #1 is cost effective control for VOC.

Cost of Reductions

The applicant supplied capital costs for an enclosure building (\$200,000) and a biofilter (\$150,000).

No operating costs were provided, and none will be assumed.

Using the District's BACT Cost Effectiveness Worksheet, the following entries were made:

Capital Costs = \$350,000
Interest Rate = 10%
Finance Period = 10 years

³ Emissions Testing of Volatile Organic Compounds from Greenwaste Composting at the Modesto Compost Facility in the San Joaquin Valley, 2008 CalRecycle Report (<http://www.calrecycle.ca.gov/Publications/Documents/Organics/44207009.pdf>)

⁴ Greenwaste Compost Site Emissions Reductions from Solar Powered Aeration and Biofilter Layer, SJVAPCD Technology Advancement Program (http://www.valleyair.org/Grant_Programs/TAP/documents/C-15636-ACP/C-15636_ACP_FinalReport.pdf)

Under the above assumptions, the annualized capital cost is for option #1 is \$56,961 (**Attachment A**).

VOC Reductions⁵

Emission Reduction = District Standard Emissions – Emissions (w/Technologically Feasible BACT) (ton/year)

District Standard Emissions would be the emission level resulting from the application of District prohibitory rules or the emission level “from similar equipment that is commonly available.” District Rule 4565 does not apply to the storage of biosolids per se; however, the mitigation practices in the rule could be considered commonly available and what would apply to a similar source.

Therefore, the emission level for this project that represents District Standard Emissions would be equal to the potential to emit calculated (PE2) in the application review applying the 10% reduction from the mitigation measures from Rule 4565.

Annual PE2 = Maximum biosolids on site × Biosolids emission rate/ton × (1 – Control efficiency of cover)

Annual PE2_{VOC} = 10,000 ton biosolids × 0.51 lb-VOC/ton⁶ × (1 – 0.10)

Annual PE2_{VOC} = District Standard Emissions = 4,590 lb-VOC/yr

VOC emissions with Technologically Feasible BACT = 10,000 ton biosolids × 0.51 lb-VOC/ton × (1 – 0.80)

VOC emissions with Technologically Feasible BACT = 1,020 lb-VOC/yr

VOC emissions reduction = District Standard Emissions – Emissions (w/Technologically Feasible BACT) (ton/year)

VOC emissions reduction = 4,590 lb-VOC/yr - 1,020 lb-VOC/yr = 3,570 lb-VOC/yr = 1.785 ton/yr

Cost Effectiveness Ratio Calculation

Cost Effectiveness Ratio = Annualized Control Cost / VOC reductions

⁵ Although the control option being considered will control VOC and NH₃ emissions, the District does not have a cost effective threshold for NH₃ emissions, and a surrogate cost effective threshold, e.g. using the cost effective threshold for PM₁₀ or VOC as a substitute, is not appropriate because a strong relationship between NH₃ emissions and any other pollutant has not been demonstrated under the atmospheric conditions that prevail within the San Joaquin Valley. In the January 2016 Final Staff Report for Proposed Amendments to Rule 2201, the District cited “extensive scientific research and technical analysis” in support of the conclusion that NH₃ was not a significant precursor to PM_{2.5} in the Valley. Therefore, a multi-pollutant cost effectiveness threshold (MCET) will not be performed here. This treatment of NH₃ is consistent with previous BACT determinations performed by the District for dairy sources where NH₃ is emitted along with VOC.

⁶ See page 3 of the application review for ATC N-7410-5-0, project N-1150015 for derivation of the VOC emission factor.

Cost Effectiveness Ratio = \$56,961/ 1.785 ton-VOC/yr

Cost Effectiveness Ratio = \$31,911/ ton-VOC reduced

Since cost effectiveness ratio for Option #1 exceeds the cost effectiveness threshold for VOC (\$17,500/ ton-reduced), Option #1 is not cost effective.

Step 5 - Select BACT

BACT for VOC for the Synagro project is satisfied with covering the biosolids with a waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility.

D. BACT Analysis for NH₃

NH₃ is emitted from the off-gassing and decomposition of biosolids.

Step 1 - Identify All Possible Control Technologies

The control technology options include:

- Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility. (Achieved in Practice)
- Store piles inside an enclosure venting to a VOC control device (e.g. biofilter or equivalent). (Technologically Feasible, ≤ 300,000 tons)

The "or equivalent" designation would allow for the flexibility to install a wet scrubber, carbon adsorption, or a thermal/catalytic oxidizer should project specific circumstances warrant.

The enclosure in this case cannot be a flexible cover drawing air to the biofilter (or other control) because that would entail drawing air through or immediately around the pile, thereby inducing the biosolids to compost. The intent is to store the material without chemically or physically altering it; composting the material would alter it.

Step 2 - Eliminate Technologically Infeasible Options

None of the options are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The ranking and control efficiencies for NH₃ are the same as the ranking and control efficiencies for VOC. That the NH₃ control efficiency is the same as the VOC is a reasonable assumption in light of the limited available data. ARB Emissions Inventory Methodology for Composting Facilities, Table III-3 (**Attachment B**) lists the VOC and NH₃ control efficiencies for various composting technologies, and the VOC and NH₃ control efficiencies are frequently the same.

Technology Rank by Control Effectiveness			
Rank	Option	% NH₃ Control	Source
1.	Store piles inside an enclosure venting to a NH ₃ control device (e.g. biofilter or equivalent).	80	BACT Guideline for ATC project C-1111582 and PTO S-4212-1-3
2.	Cover piles with waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility.	10	Rule 4565, Section 5.1.2 and Table 1, #4

Step 4 - Cost Effectiveness Analysis

The applicant has proposed option #2 from the table above. Option #1 is a more effective NH₃ control. However, the District does not have a cost effective threshold for NH₃ emissions, and a surrogate value is not appropriate for use since a direct relationship is not available for any of the other pollutants. Therefore, no cost effective analysis for NH₃ controls will be performed. The District only required Achieved-in-Practice controls; a cost analysis cannot be performed.

Step 5 - Select BACT

BACT for NH₃ for the Synagro project is satisfied with covering the biosolids with a waterproof cover, at least 6 inches of finished compost, or at least 6 inches of soil within 3 hours of receipt at the facility.

Attachment A

District BACT Cost Effectiveness Worksheet

BACT Cost Effectiveness Worksheet

Capital Costs (P) to be financed (supplied by applicant)	\$350,000.00 (1)
Interest rate for financing (assume 10%)	0.10 (i)
time period of financing (assume 10 years)	10 (n)
annualization factor = $\frac{i(1+i)^n}{(1+i)^n - 1}$	0.16 (2)
annualized capital costs [Calculated as (1) X (2)]	\$56,960.89 (3)
annual cost of operation and maintenance (includes monitoring, inspection, permitting fees, waste disposal charges, repair, administration and replacement)	\$0.00 (4)
total cost of control technology [(3) + (4)]	\$56,960.89 (5)
tons/year reduced by control technology being analyzed	1.785 (6)
cost effectiveness (\$/ton) [(5) / (6)]	\$31,910.86 (7)

Pollutant	Cost Effectiveness Threshold
VOC	17500
NOx	24500
PM10	11400
SOX	18300
CO	300

Attachment B

ARB Emissions Inventory Methodology for Composting Facilities, Table III-3

Table III-3: Control Techniques for Composting Operations

Control Type	Aeration	VOC Control Efficiency	NH3 Control Efficiency
<i>Windrow</i>			
Static Pile – No Biofilter	Passive	0%	0%
Managed Windrow – No Biofilter	Passive	0%	0%
Water Management Requirements ¹	Passive	19%	19%
Static Pile/Passively Aerated Windrow covered 15 days with a biofilter ²	Passive	40%	20%
Static Pile/Passively Aerated Windrow covered 22 days with a biofilter ¹	Passive	60%	20%
<i>Aerated Static Pile (ASP)</i>			
Negative ASP with Biofilter (classic)	Forced, Negative Air	26%	23%
Positive ASP with Biofilter Cover	Forced, Positive Air	80%-98%	53%
<i>Enclosed Aerated Static Pile</i>			
Enclosed, Negative ASP with Biofilter (e.g., ECS)	Forced, Negative Air	80%-98%	70%-78%
Negative ASP with Biofilter (indoor)	Forced, Negative Air	80%-98%	80%-99%
Enclosed, Positive ASP (e.g., GORE Cover)	Forced, Positive Air	80%	70%
Ag Bag	Forced, Positive Air	80%	70%
General Enclosed Pile vented through a Biofilter	Forced	80%	70%

¹Requires compliance with pile management and/or watering requirements in SJVAPCD's rule 4566.

²Requires compliance with pile management and/or watering requirements in SCAQMD's rule 1133.3.

Appendix F
Risk Management Review

Revised
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Brian Clerico – Permit Services
 From: Tadeh Issakhanian – Technical Services
 Date: April 8, 2016
 Facility Name: Synagro
 Location: 13757 South Harmon Rd., Dos Palos
 Application #(s): N-7410-5-0
 Project #: N-1150015

A. RMR SUMMARY

RMR Summary			
Categories	Bio Solid Storage (Unit 5-0)	Project Totals	Facility Totals
Prioritization Score	0.55	0.55	>1.0
Acute Hazard Index	0.38	0.38	0.4
Chronic Hazard Index	0.01	0.01	0.01
Maximum Individual Cancer Risk	1.51E-07	1.51E-07	3.11E-06
T-BACT Required?	No		
Special Permit Requirements?	No		

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 5-0

No special requirements are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on April 6, 2016, to revise a Risk Management Review for a proposed modification to a bio-solid storage operation. The revision consisted of increasing the daily VOC from 73.8lb/day to 260lb/day and daily NH₃ from 50.8lb/day to 110lb/day.

II. Analysis

Toxic emissions for this proposed unit were calculated using emission factors generated from a 1997 source test conducted on the Griffith Park Bio solids Composting Plant, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for the facility is greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2009-2011 from Madera to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 5 - 0			
Source Type	Area	Location Type	Rural
Area Source Area (m)	3,336	Closest Receptor (m)	213
Release Height (m)	1.5	Type of Receptor	Business
VOC Emission Rate	10.8 lb/hr	NH₃ Emission Rate	4.6 lb/hr
VOC Emission Rate	4590 lb/year	NH₃ Emission Rate	3150 lb/year

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary

Appendix G
Draft ATC N-7410-5-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7410-5-0

LEGAL OWNER OR OPERATOR: SYNAGRO WEST, INC DBA CENTRL VLY COMPOST
MAILING ADDRESS: 13757 S HARMON RD
DOS PALOS, CA 93620

LOCATION: 13757 S HARMON RD
DOS PALOS, CA 93620

EQUIPMENT DESCRIPTION:
SEASONAL BIOSOLIDS STORAGE OPERATION UTILIZING WATERPROOF TARPS OR FINISHED COMPOST AS A COVER

CONDITIONS

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 3,442 lb, 2nd quarter - 3,443 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
2. ERC Certificate Number N-1357-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. The requirements of this permit do not apply to the biosolids received and stored for the purpose of co-composting that are subject to Permit to Operate N-7410-1. [District Rule 2201]
6. The amount of biosolids received and stored shall not exceed 10,000 wet-tons per year. [District Rule 2201]
7. Biosolids shall only be received and stored from January 1 through June 30. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

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Arnaud Marjollet, Director of Permit Services
N-7410-5-0 : Apr 22 2016 11:54AM - CLERIC08 : Joint Inspection NOT Required

8. Within 3 hours of receipt, all biosolids shall be covered with a waterproof covering or at least 6 inches of finished compost. The cover(s) shall remain in place for the duration of storage until the biosolids are removed for offsite transport or adjustments to the cover are necessary to accommodate the addition of newly received biosolids. [District Rule 2201]
9. The VOC emissions from the storage of covered biosolids from the time the biosolids are received until they are removed from this site shall not exceed 0.459 lb/wet-ton. [District Rule 2201]
10. The VOC emission rate from the storage of covered biosolids shall not exceed 0.026 lb/wet-ton/day. [District Rule 2201]
11. The ammonia emissions from the storage of covered biosolids from the time the biosolids are received until they are removed from this site shall not exceed 0.315 lb/wet-ton. [District Rule 2201]
12. The ammonia emission rate from the storage of covered biosolids shall not exceed 0.011 lb/wet-ton/day. [District Rule 2201]
13. Finished compost is material that meets at least one of the following criteria: (1) The material emits no more than 4 mg CO₂-C per gram of organic material per day, as measured using the TMECC Method 05-08-B - Carbon Dioxide Evolution Rate; or (2) The material has a Solvita® Maturity Index of 7 or greater, as measured using the TMECC Method 05-08-E - Solvita® Maturity Test; or (3) The material has completed both the active and curing phases of composting. [District Rules 2201 and 4565]
14. The operator shall maintain records of: (1) the date and time biosolids were received on site; (2) the amount of biosolids received in wet-tons; (3) the date and time the biosolids were covered; (4) the type of cover; and (5) the cumulative wet-tons of biosolids received since January 1 of the current year. [District Rules 1070 and 2201]
15. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]
16. All bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rule 8031]
17. An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041, Section 5.0. [District Rules 8031 and 8041]
18. For unpaved vehicle or equipment traffic areas that have 50 or more annual average daily trips (AADT), or 150 or more vehicle daily trips (VDT), or 25 or more VDT with vehicles having 3 axles or more, the operator shall implement at least one of following control measures to limit visible dust emissions (VDE) to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in District Rule 8011: (1) Watering; (2) Uniform layer of washed gravel; (3) Chemical/organic dust stabilizers/suppressants; (4) Vegetative materials; (5) Paving; (6) Roadmix; or (7) Any other method that can be demonstrated to the satisfaction of the APCO that effectively limits VDE to 20% opacity and meets the conditions of a stabilized unpaved road. [District Rules 8011 and 8071]
19. Whenever any portion of the site becomes inactive, the operator shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in District Rule 8011. [District Rules 8011 and 8071]

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