

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

RULE 496 – LARGE CONFINED ANIMAL FACILITIES

(Adopted 08-24-06)

INDEX

100	GENERAL
101	PURPOSE
102	APPLICABILITY
103	SEVERABILITY
200	DEFINITIONS
201	AERATED STATIC PILE
202	AEROBIC LAGOON
203	ANAEROBIC DIGESTER
204	ANAEROBIC LAGOON
205	ANIMAL HOUSING
206	ANIMAL WASTE
207	BEST AVAILABLE RETROFIT CONTROL TECHNOLOGY
208	CALF
209	CAPTURE EFFICIENCY
210	CLASS ONE MITIGATION MEASURES
211	CLASS TWO MITIGATION MEASURES
212	COMBINED CAPTURE AND CONTROL EFFICIENCY
213	CONFINED ANIMAL FACILITY
214	CONTROL EFFICIENCY
215	CORRAL
216	DAIRY
217	DRY ANIMAL WASTE/DRY SEPARATED SOLIDS
218	DRY COW
219	EMISSION MITIGATION PLAN
220	FEED APRON
221	FEED BUNK
222	FREESTALL
223	HEIFER
224	HIGH MOISTURE CORN
225	IN-CORRAL MOUNDS
226	LAGOON
227	LAND INCORPORATE
228	LARGE CONFINED ANIMAL FACILITY
229	LEAK
230	MILKING PARLOR
231	MITIGATION MEASURE
232	NRCS
233	PEN
234	PHOTOTROPIC LAGOON
235	POULTRY
236	SEPARATED SOLIDS
237	SILAGE
238	SOLID SEPARATOR SYSTEM
239	STEAM-FLAKED CORN
240	STORAGE POND
241	VOC CONTROL DEVICE
242	WEATHERPROOF COVERING/STORAGE STRUCTURE
300	STANDARDS
301	EMISSION MITIGATION PLAN REQUIREMENTS
302	BARCT REQUIREMENTS
303	EMISSION MITIGATION MEASURES

304 ALTERNATIVE EMISSION MITIGATION PLAN
305 OPERATING AND DESIGN STANDARDS

400 **ADMINISTRATIVE REQUIREMENTS**

401 PERMIT APPLICATION
402 IMPLEMENTATION SCHEDULE
403 EMISSION MITIGATION PLAN UPDATE
404 CALCULATION FOR DETERMINING PERCENT OF ANIMAL WASTE OR SEPARATED
SOLIDS BEING SENT TO AN ANAEROBIC DIGESTER

500 **MONITORING AND RECORDS**

501 MONITORING AND RECORDKEEPING
502 TEST METHODS

100 GENERAL

101 **PURPOSE:** To limit volatile organic compound (VOC) emissions from large confined animal facilities.

102 **APPLICABILITY:** The requirements of this Rule shall apply to large confined animal facilities, as defined in Section 228, and feed suppliers as referenced in Section 303.2(a).

103 **SEVERABILITY:** If a court of competent jurisdiction issues an order that any provision of this rule is invalid, it is the intent of the Board of Directors of the District that other provisions of this rule remain in full force and affect to the extent allowed by law.

200 DEFINITIONS: Unless otherwise defined below, the terms in this rule are defined in Rule 215, AGRICULTURAL PERMIT REQUIREMENTS AND NEW AGRICULTURAL PERMIT REVIEW.

201 **AERATED STATIC PILE:** A system designed, constructed, maintained, and operated for decomposing organic material in which the material is placed on top of perforated plates or pipes that are connected to blowers that either push or pull air through the piles. The system shall operate under negative or positive pressure for not less than 90% of its blower operation cycle and the exhaust shall be vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.

202 **AEROBIC LAGOON:** A lagoon designed, constructed, maintained, and operated in accordance with the applicable standards for aerobic lagoons in the Natural Resource Conservation Service (NRCS) California Field Office Technical Guide Code 359 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

203 **ANAEROBIC DIGESTER:** A basin or tank designed, constructed, maintained, and operated for the anaerobic treatment of liquid or solid animal waste in accordance with the applicable standards for anaerobic digesters in the NRCS California Field Office Technical Guide Code 365 or 366 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

204 **ANAEROBIC LAGOON:** A lagoon designed, constructed, maintained, and operated in accordance with the applicable standards for anaerobic lagoons in the NRCS California Field Office Technical Guide Code 359 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

205 **ANIMAL HOUSING:** Any area, except milking parlors, where animals live or allowed to roam including, but not limited to, freestalls, corrals, drylots, pens, loafing barns, or open lots.

206 **ANIMAL WASTE:** Any animal excretions and mixtures containing animal excretions, except for material meeting the definition of separated solids.

207 **BEST AVAILABLE RETROFIT CONTROL TECHNOLOGY (BARCT):** Best Available Retrofit Control Technology, as defined in Section 40406 of the California Health and Safety Code, is "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source."

208 **CALF:** A cow or bull younger than six months.

209 **CAPTURE EFFICIENCY:** Expressed in percent, the capture efficiency is the ratio of the weight of the VOC entering the control device to the weight of VOC emitted from a piece or pieces of equipment, both measured simultaneously. Capture efficiency is calculated by the following equation:

$$E_{cap} = \frac{W_c}{W_e} \times 100$$

Where: E_{cap} = Capture efficiency, %
 W_c = Weight of VOC entering the control device
 W_e = Weight of VOC emitted, uncontrolled, from the equipment

210 **CLASS ONE MITIGATION MEASURES:** A mitigation measure or combination of measures for specific source category that, at the time of rule adoption, are considered to be BARCT for VOC.

211 **CLASS TWO MITIGATION MEASURES:** A mitigation measure or combination of measures for the specific source category that achieve VOC reductions equal to or greater than those achieved by Class One Mitigation Measures, but are considered beyond the BARCT standards for existing facilities after taking into account environmental, energy, economic, legal, social, and technological factors. These measures are considered to be between BARCT (the standard for existing facilities) and Best Available Control Technology (BACT) or equivalent to BACT.

212 **COMBINED CAPTURE AND CONTROL EFFICIENCY:** Expressed in percent, the combined capture and control efficiency is the ratio of the weight of the VOC captured and removed by the control device to the weight of VOC emitted from a piece or pieces of equipment. The combined capture and control efficiency is calculated by the following equation:

$$E_{comb} = \frac{E_{cap} \times E_{ctrl}}{100}$$

Where: E_{comb} = Combined capture and control efficiency, %
 E_{cap} = Capture efficiency, %
 E_{ctrl} = Control efficiency, %

213 **CONFINED ANIMAL FACILITY (CAF):** An agricultural stationary source where domesticated animals, including but not limited to, cattle, calves, horses, sheep, goats, swine, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

214 **CONTROL EFFICIENCY:** Expressed in percent, the control efficiency is the ratio of the weight of the VOC removed by the control device to the weight of VOC entering the control device, both measured simultaneously. Control efficiency is calculated by the following equation:

$$E_{ctrl} = \frac{W_c - W_a}{W_c} \times 100$$

Where: E_{ctrl} = Control efficiency, %
 W_a = Weight of VOC discharged from the control device
 W_c = Weight of VOC entering the control device

215 **CORRAL:** An area where animals are confined without separate stalls in which the animals may rest, including, but not limited to, drylots, pens, loafing barns, and open lots.

216 **DAIRY:** A CAF that is primarily concerned with the production of milk, butter, or cheese for commercial purposes.

- 217 **DRY ANIMAL WASTE/DRY SEPARATED SOLIDS:** Animal waste with less than 50% moisture by weight.
- 218 **DRY COW:** A dairy cow who already given birth to its first calf but is not producing milk.
- 219 **EMISSION MITIGATION PLAN:** A plan that outlines the activities or procedures for reducing air pollutants normally emitted from a CAF.
- 220 **FEED APRON:** The area where the animals stand to consume feed in non-poultry operations.
- 221 **FEED BUNK:** The area where feed is placed for the animals to eat.
- 222 **FREESTALL:** A structure for housing animals in which the animals are contained in large pens under a roof and have free access to feed bunks, waterers, and stalls for resting.
- 223 **HEIFER:** A young dairy cow that is six months or older but has not given birth to its first calf.
- 224 **HIGH MOISTURE CORN:** Corn harvested wet with a kernel moisture content of 24 to 33%.
- 225 **IN-CORRAL MOUNDS:** Mounds of animal waste and/or soil which are constructed, designed, maintained, and operated to allow animals to have a dry area to lay and rest during the wet season.
- 226 **LAGOON:** A basin designed, constructed, maintained, and operated to store and treat animal waste. This does not include basins primarily used to collect runoff and storm water.
- 227 **LAND INCORPORATE:** Use of a method, such as tilling, injecting, or plowing, that covers animal waste with soil.
- 228 **LARGE CONFINED ANIMAL FACILITY:** Any confined animal facility that maintains on any one day any one or more of the following:
- 228.1 1,000 or more milk-producing dairy cows;
 - 228.2 3,500 or more beef cattle;
 - 228.3 7,500 or more calves, heifers, or other cattle;
 - 228.4 100,000 or more turkeys;
 - 228.5 650,000 or more chickens other than laying hens;
 - 228.6 650,000 or more laying hens;
 - 228.7 3,000 or more swine;
 - 228.8 15,000 or more sheep, lambs, or goats;
 - 228.9 2,500 or more horses;
 - 228.10 650,000 or more ducks;
 - 228.11 30,000 or more rabbits or other animals
- 229 **LEAK:** A liquid drip greater than 3 drops per minute, visible mist, or liquid flow.
- 230 **MILKING PARLOR:** A structure specifically used for milking dairy cows.
- 231 **MITIGATION MEASURE:** An activity, practice, or technology that reduces air pollutants normally emitted from a CAF.
- 232 **NRCS:** The National Resources Conservation Service operated under the United States Department of Agriculture.
- 233 **PEN:** An area where animals are confined without separate stalls in which the animals may rest.

- 234 **PHOTOTROPIC LAGOON:** A lagoon where at least 10% of the bacteria in the lagoon are photosynthetic bacteria; the bacteriochlorophyll *a* concentration is above 1081 µg/L; or that is designed, constructed, maintained, and operated according the most recent NRCS guidelines or to other standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 235 **POULTRY:** Any domesticated birds kept or raised for eggs or meat.
- 236 **SEPARATED SOLIDS:** Solids removed from animal waste by a solid separator system.
- 237 **SILAGE:** Food for livestock processed through acid fermentation.
- 238 **SOLID SEPARATOR SYSTEM:** A system for separating solid animal waste from liquid animal waste products that is designed, constructed, operated, and maintained in accordance with the NRCS California Field Office Technical Guide Code 632 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency. Solid separator systems may include, but are not limited to, flat belt separators, roller press separators, vibrating screen separators, stationary inclined screen separators, and settling basins.
- 239 **STEAM-FLAKED CORN:** Corn grain that has been cooked with steam and flaked by rollers.
- 240 **STORAGE POND:** A basin constructed, maintained, and operated to store animal waste after it has been treated or processed in a lagoon.
- 241 **VOC CONTROL DEVICE:** A device, into which captured air is vented, that reduces the VOC content in the air prior to the air being released into the atmosphere.
- 242 **WEATHERPROOF COVERING/STORAGE STRUCTURE:** A covering, such as a building or tarp, constructed, installed, maintained, and operated such that the material inside or underneath the covering is not moved or moistened by weather conditions outside of the covering including, but not limited to, wind and rain. The covering shall be maintained according to manufacturer recommendations and adhere to applicable standards in NRCS California Field Office Technical Guide Code 313 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

300 STANDARDS

- 301 **EMISSION MITIGATION PLAN REQUIREMENTS:** Any owner/operator of a large CAF shall implement an emission mitigation plan in accordance with the requirements set forth in Section 302, 303, and 304. The emission mitigation plan shall apply to all animals in numbers equal to or exceeding the thresholds in Section 228, and their associated support stock, livestock feed, animal waste, or animal waste management at the large CAF.
- 302 **BARCT REQUIREMENTS:** The emission mitigation plan shall include measures that meet the requirements of BARCT for VOC emissions. For the initial emission mitigation plan, BARCT shall be achieved through the requirements and mitigation measures set forth in Section 303.
- 303 **EMISSION MITIGATION MEASURES:**
- 303.1 **DAIRIES:** Dairies shall include the following emission mitigation measures, as required in Sections (a) through (h), in the emission mitigation plan:
- a. The owner/operator shall incorporate at least four of the following feed mitigation measures. Measures 1 through 7 are classified as class one mitigation measures.

1. Feed according to National Research Council guidelines specified in "Nutrient Requirements of Dairy Cattle: Seventh Revised Edition, 2001," or a more recent edition.
 2. Feed animals high moisture corn or steam-flaked corn and not feed animals dry rolled corn.
 3. At least once every 14 days, remove feed from the area where animals stand to eat feed.
 4. At least once every 14 days, remove spilled feed from the area where equipment travels to place feed in the feed bunks.
 5. Remove uneaten wet feed from feed bunks within 24 hours of feed becoming wet due to rain.
 6. Feed or dispose of rations within 48 hours of grinding or mixing rations.
 7. Store grain in a weatherproof storage structure from October through May.
- b. The owner/operator shall incorporate at least one of the following silage mitigation measures. Measures 1 and 2 are classified as class one mitigation measures and measure 3 is classified as a class two mitigation measure.
1. Cover the horizontal surface of silage piles, except for the area where feed is being removed from the silage pile.
 2. Collect leachate from silage piles and send it to a waste treatment system such as a lagoon at least once every 24 hours.
 3. Choose one of the following measures:
 - a) Enclose silage in a bag and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or
 - b) Enclose silage in a weatherproof structure and vent to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%, or
 - c) Eliminate silage from animal diet.
- c. The owner/operator shall incorporate at least one of the following mitigation measures to implement in each milking parlor. Measure 1 is classified as a class one mitigation measure and measure 2 is classified as a class two mitigation measure.
1. Flush or hose milking parlor immediately prior to, immediately after, or during each milking.
 2. Enclose and vent the milk parlor to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80% when animals are in the parlor.
- d. The owner/operator of a dairy which houses animals in freestalls shall incorporate at least two of the following mitigation measures in each freestall. Measures 1 through 8 are classified as class one mitigation measures and measure 9 is classified as a class two mitigation measure.
1. Vacuum or scrape freestall flush lanes immediately prior to, immediately after, or during each milking.
 2. Inspect water pipes and troughs and repair leaks at least once every day.
 3. Use non-manure-based bedding for at least 90% of the bedding material, by weight, for freestalls (e.g. rubber mats, almond hulls, sand, or waterbeds).
 4. Remove animal waste that is not dry from individual cow freestall beds at least once every 14 days.
 5. Rake, harrow, scrape, or grade bedding in freestalls at least once every 14 days.
 6. Use a dry animal waste handling system, such as scraping, instead of a liquid animal waste handling system such as a flush system.
 7. Have no animals in corrals at any time.

8. Flush freestalls more frequently than the milking schedule.
 9. Vacuum animal waste instead of flushing or scraping and apply animal waste directly to land either through injection or incorporation within 72 hours of removal from animal housing or vacuum truck.
- e. The owner/operator of a dairy which houses animals in corrals shall incorporate at least six of the following mitigation measures in each corral where animals have been housed in the last thirty days. Measures 1 through 10 are classified as class one mitigation measures and measures 11 and 12 are classified as class two mitigation measures.
1. Choose one of the following measures:
 - a) Clean animal waste from corrals at least four times per year with at least 60 days between cleanings, or
 - b) Clean corrals at least once between April and July and at least once between October and December, or
 - c) Clean concrete areas such that the depth of animal waste does not exceed twelve inches at any point or time, except for in-corral mounding.
 2. Manage corrals such that the animal waste depth in the corral does not exceed twelve inches at any point or time, except for in-corral mounding.
 3. Knock down fence line animal waste build-up prior to it exceeding a height of twelve inches at any point or time.
 4. Scrape or flush feed aprons in corrals at least once every seven days.
 5. Slope the surface of the corrals at least 3% where the available space for each animal is 400 square feet or less. Slope the surface of the corrals at least 1.5% where the available space for each animal is more than 400 square feet per animal.
 6. Choose one of the following measures:
 - a) Maintain corrals to ensure drainage and to prevent water from standing more than 48 hours, or
 - b) Maintain corrals so that there are not indentations in the surface where standing water may form and remain for more than 48 hours.
 7. Install floats on the troughs or use another method approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency to ensure that the water in the troughs does not intentionally or unintentionally overflow or spill onto an earthen ground.
 8. Inspect water pipes and troughs and repair leaks at least once every day.
 9. Harrow, rake, or scrape corrals sufficiently to maintain a dry surface.
 10. Choose one of the following measures:
 - a) Install no shade structures in the corrals, or
 - b) Install shade structures such that they are constructed with a light permeable roofing material, or
 - c) Install all shade structures uphill of any slope in the corral.
 11. Choose one of the following measures:
 - a) Use lime or a similar absorbent material in the corrals according to the manufacturer's recommendations to minimize moisture in the corrals, or
 - b) Apply thymol to corral soil in accordance with the manufacturer's recommendation.
 12. House animals in an enclosure vented to a VOC control device with a combined VOC capture and VOC control efficiency of at least 80%.

- f. The owner/operator of a dairy that handles or stores solid animal waste or separated solids outside the animal housing shall incorporate at least two of the following mitigation measures. Measures 1 through 4 are classified as class one mitigation measures and measures 5 through 7 are classified as class two mitigation measures.
1. Cover any dry animal waste piles outside of the corrals with a waterproof covering from October through May, except for times, not to exceed 24 hours, when wind removes the covering.
 2. Cover any dry separated solids outside the corrals with a waterproof covering from October through May, except for times, not to exceed 24 hours, when wind removes the covering.
 3. Remove animal waste from the facility within 72 hours of removal from the corrals.
 4. Choose one of the following measures:
 - a) Remove separated solids from the facility within 72 hours of separation with a solid separation system, or
 - b) Store no separated solids outside of anaerobic digesters.
 5. Compost animal waste removed from corrals with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
 6. Store all removed animal waste in an enclosure vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
 7. Send at least 51% of the animal waste removed from animal housing to an anaerobic digester, with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- g. The owner/operator of a dairy that handles animal waste in a liquid form shall incorporate at least one of the following measures. Measures 1 through 4 are classified as class one mitigation measures and measures 5 through 8 are classified as class two mitigation measures.
1. Manage the facility such that there are no lagoons at the facility.
 2. Choose one of the following measures:
 - a) Use phototropic lagoons, or
 - b) Use an anaerobic lagoon.
 3. Remove solids from the waste system with a solid separator system, prior to the waste entering the lagoon.
 4. Maintain lagoon with a pH between 6.5 and 7.5.
 5. Choose one of the following measures:
 - a) Use an aerobic lagoon, or
 - b) Use a lagoon that is mechanically aerated.
 6. Maintain organic loading in the lagoon such that the total solids is less than 3.5 mg (dry weight)/mL.
 7. Use additional non-standard equipment or chemicals on the solid separator system, such as a roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and is approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
 8. Cover the lagoon or storage pond and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- h. Owner/operators who land apply dry or liquid animal waste to land on the facility shall incorporate at least two of the following mitigation measures. Measures 1 through 4 are classified as class one mitigation measures.
1. Land incorporate all solid animal waste within 72 hours of removal from animal housing.
 2. Only apply solid or liquid animal waste that has been treated with an anaerobic or aerobic lagoon or an anaerobic digester system.

3. Choose one of the following measures:
 - a) Apply and manage the liquid animal waste so it stands in the fields no more than 24 hours after application, or
 - b) Apply no liquid animal waste.
4. Choose one of the following measures:
 - a) Apply no solid animal waste that has a moisture content of more than 50%, or
 - b) Apply no solid animal waste.

303.2 **POULTRY RANCHES:** Poultry ranches shall include the following emission mitigation measures, as required in Sections (a) through (d), in the emission mitigation plan:

- a. The owner/operator shall incorporate at least five of the following feed mitigation measures. Measures 1 through 9 are classified as class one mitigation measures. If any of measures 1 through 5 are being utilized in the emission mitigation plan and the owner/operator is contractually obligated to use proprietary feed, the supplier of that feed must provide a quarterly certification to the owner/operator that the provided feed meets the mitigation measure(s). Additionally, the supplier must provide notice to the owner/operator 90 days before the provided feed ceases to meet the requirements of the mitigation measure. If the supplier fails to notify the owner/operator of such change the supplier will be responsible for any resulting violations.
 1. Feed according to National Research Council guidelines specified in "Nutrient Requirements of Poultry: Ninth Revised Edition, 1994," or a more recent edition.
 2. Feed animals probiotics designed to improve digestion according to manufacturer recommendations.
 3. Feed animals an amino acid supplement diet to meet their nutrient requirements.
 4. Feed animals feed additives such as amylase, xylanase, and protease, designed to maximize digestive efficiency according to manufacturer recommendations.
 5. Use feed additives designed to reduce feed decomposition or oxidation.
 6. Remove spilled feed from animal housing at least once every seven days.
 7. Enclose grain in a weatherproof storage structure from October through May.
 8. Feed or dispose of feed within 48 hours of grinding and mixing feed.
 9. Remove uneaten wet feed from the animal housing within 24 hours of feed becoming wet due to rain.
- b. The owner/operator shall incorporate four of the following mitigation measures in all animal housing. Measures 1 through 12 are classified as class one mitigation measures and measures 13 through 16 are classified as class two mitigation measures.
 1. Remove caked animal waste at least once every 14 days.
 2. Clean under poultry cages at least once every 14 days.
 3. Use poultry litter additives designed to reduce air emissions or moisture content in litter, such as aluminum sulfate or sodium bisulfate, according to manufacturer recommendations.
 4. Use a dry housing cleaning method at all times, except when a wet cleaning method is required for animal health or biosecurity issues.
 5. Use drinkers that do not have a drip system.
 6. Adjust the height, volume, and location of drinkers at least once every 14 days.
 7. Use no foggers in the house.

8. Only use fogger systems designed, operated and maintained according to manufacturer recommendations that provide water droplets with an average size of 50 microns or less.
 9. Slope the floor of the house 3%.
 10. Install mounds or berms up gradient to prevent the runoff of storm water into pens (only an option for animals allowed to freely move between indoor housing structures and outdoor pens).
 11. Inspect water pipes and drinkers and repair leaks at least once every day.
 12. Maintain the roof structure and manage roof runoff in accordance with the applicable standards in the NRCS Field Office Technical Guide Code 558 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
 13. Vent animal housing to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
 14. Use a belt litter removal system that dries the litter.
 15. House animals in a tunnel ventilated house with mechanical ventilation.
 16. Use a litter drying system, such as a flat bed drying system.
- c. The owner/operator of a poultry ranch that handles or stores solid animal waste or separated solids outside the animal housing shall incorporate at least one of the following mitigation measures. Measures 1 through 3 are classified as class one mitigation measures and measures 4 and 5 are classified as class two mitigation measures.
1. Choose one of the following measures:
 - a) Remove all animal waste from facility within 72 hours of removal from animal housing, or
 - b) Send all animal waste to a lagoon within 72 hours of removal from animal housing.
 2. Cover animal waste outside the animal housing with a waterproof covering from October through May, except for times, not to exceed 24 hours, when wind removes the covering.
 3. Use a solid animal waste handling system in housing, such as stockpiles, solid land application, or a thin bed animal waste drying system, instead of a liquid system such as flushing, animal waste storage ponds, or animal waste treatment lagoons.
 4. Send at least 51% of the animal waste removed from site to an anaerobic digester, with a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
 5. Compost animal waste removed from the animal housing with an aerated static pile vented to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- d. The owner/operator of a poultry ranch that handles animal waste in a liquid form shall incorporate at least one of the following mitigation measures. Measures 1 through 4 are classified as class one mitigation measures and measures 5 through 8 are classified as class two mitigation measures.
1. Manage the facility such that there are no lagoons at the facility.
 2. Choose one of the following measures:
 - a) Use phototropic lagoons, or
 - b) Use an anaerobic lagoon.
 3. Remove solids from the waste system with a solid separator system, prior to waste entering the lagoon.
 4. Maintain lagoon pH between 6.5 and 7.5.
 5. Choose one of the following measures:
 - a) Use an aerobic lagoon, or
 - b) Use a mechanically aerated lagoon.

6. Maintain organic loading in the lagoon that is less than 3.5 mg (dry weight)/mL.
 7. Use additional non-standard equipment or chemicals on the solid separator system, such as roller or screw presses or chemical coagulants and flocculants, that increase the percent of solid separation achieved by the separator and is approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
 8. Cover the lagoon or storage pond and vent to a VOC control device with an overall VOC capture and VOC control efficiency of at least 80%.
- 303.3 **OTHER CONFINED ANIMAL FACILITIES:** Any other large CAF that is not mentioned in Sections 303.1 or 303.2 shall submit an emission mitigation plan to the District demonstrating BARCT in accordance with Section 302. The emission mitigation plan must achieve equal or greater emission reduction as the minimum percent attained by a facility complying with either Section 303.1 or 303.2. The emission mitigation plan must be approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 303.4 **MEASURE SUBSTITUTION:** An owner/operator may substitute a mitigation measure from one of the subsections in Sections 303.1 or 303.2 for another mitigation measure in a different subsection for the same type of CAF, if it can be shown that the substitution results in greater or equal emission reduction than without the substitution. The measure substitution must be approved by the Air Pollution Control Officer, Air Resources Board, and U.S. Environmental Protection Agency.
- 304 **ALTERNATIVE EMISSION MITIGATION PLAN:** An owner/operator may submit an alternative emission mitigation plan in lieu of complying with Sections 303.1 and 303.2 that can achieve equal or greater emission reduction than the minimum amount of reduction that would have been achieved by complying with the applicable section. The alternative emission mitigation plan must be approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 305 **OPERATING, MAINTENANCE, AND DESIGN**
- 305.1 **AEROBIC, ANAEROBIC, AND MECHANICALLY AERATED LAGOONS:** Any aerobic, anaerobic, or mechanically aerated lagoon used in the implementation of a mitigation measure shall be designed, constructed, maintained, and operated in accordance with the applicable standards in the NRCS California Field Office Technical Guide Code 359 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 305.2 **ANAEROBIC DIGESTERS:** Any anaerobic digester used in the implementation of a mitigation measure shall be designed, constructed, maintained, and operated in accordance with the applicable standards in the NRCS California Field Office Technical Guide Code 365 or 366 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 305.3 **PHOTOTROPIC LAGOONS:** Any phototropic lagoon used in the implementation of a mitigation measure must be designed, constructed, maintained, and operated in accordance with the applicable standards in the most recent NRCS code or guidelines or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 305.4 **SOLID SEPARATOR SYSTEMS:** Any solid separator system used in the implementation of a mitigation measure shall be designed, constructed, operated, and maintained in accordance with the NRCS California Field Office Technical Guide Code 632 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

- 305.5 **WEATHERPROOF COVERINGS/STORAGE STRUCTURES:** Any weatherproof covering or storage structure used in the implementation of a mitigation measure shall be maintained according to manufacturer recommendations and adhere to applicable standards in NRCS California Field Office Technical Guide Code 313 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 305.6 **VOC CONTROL DEVICES:** Any VOC control device used in the implementation of a mitigation measure shall be operated and maintained according to the manufacturer's specifications.

400 ADMINISTRATIVE REQUIREMENTS

- 401 **PERMIT APPLICATION:** The owner/operator of a large CAF shall submit to the Air Pollution Control Officer, pursuant to Rule 215, AGRICULTURAL PERMIT REQUIREMENTS AND NEW AGRICULTURAL PERMIT REVIEW, an application for a permit by February 20, 2007, which in addition shall include the following:
- 401.1 The average number of animals in the large CAF, for the previous 12 month period, in each of the following categories: milk-producing dairy cows, beef cattle, calves, heifers, other cattle, turkeys, laying hens, chickens other than laying hens, swine, sheep, lambs, goats, horses, ducks, or rabbits, or other animals.
- 401.2 The maximum number of animals in the large CAF, for any given day in the previous 12 month period, in each of the following categories: milk-producing dairy cows, beef cattle, calves, heifers, other cattle, turkeys, laying hens, chickens other than laying hens, swine, sheep, lambs, goats, horses, ducks, or rabbits, or other animals.
- 401.3 An emission mitigation plan that identifies the mitigation measures selected to meet the requirements of Section 302, 303, and 304.
- 402 **IMPLEMENTATION SCHEDULE:** Upon approval of the permit, the owner/operator of the large CAF shall implement the emission mitigation plan according to a schedule outlined by the Air Pollution Control Officer, and shall complete implementation of the emission mitigation plan within one year.
- 403 **EMISSION MITIGATION PLAN UPDATE:**
- 403.1 **UPDATE:** The owner/operator of a large CAF shall submit an emission mitigation plan update 27 months after the approval of the permit. Subsequent updates will be submitted 27 months after the approval of the previous update or a permit modification.
- a. The emission mitigation plan update shall include:
1. information showing complete compliance with the permit,
 2. animal inventories as defined in Sections 401.1 and 401.2,
 3. proposed changes to the emission mitigation plan, and,
 4. additional measures to meet the requirements of Section 302, if required.
- b. The Air Pollution Control Officer shall determine whether the update is complete no later than 30 days after receipt of the update or after such time as agreed in writing. Completeness shall also be determined based on a payment of a fee pursuant to Rule 310, PERMIT FEES – AGRICULTURAL SOURCE, Section 312. If the Air Pollution Control Officer determines that the update is not complete, the owner/operator shall be notified in writing of the decision specifying the information required. The Air Pollution Control Officer may, during the processing of the update, request an owner/operator to clarify, amplify, correct, or otherwise supplement the information submitted in the update.
- c. Upon receipt of any re-submittal of the update pursuant to Section 403.1.b, a new 30-day period to determine completeness shall begin.
- d. If the Air Pollution Control Officer determines the application is still incomplete, the applicant may appeal this decision to the Sacramento Metropolitan Air Quality Management District Board of Directors.

- e. In the event that a written determination of incompleteness is not made within 30 days of the filing of the application, or within 30 days of providing further information as required by Section 403.1, the update shall be deemed complete.

403.2 **APPROVAL:** Following the acceptance of the update as complete, the Air Pollution Control Officer shall perform evaluations to determine compliance of the facility with the current BARCT.

- a. If the update proposes changes to the mitigation measures, or if the Air Pollution Control Officer determines that changes to the mitigation measures will be required the owner/operator will be required to:
 - 1. submit an application for a permit modification pursuant to Rule 215, AGRICULTURAL PERMIT REQUIREMENTS AND NEW AGRICULTURAL PERMIT REVIEW; and
 - 2. show that the changes meet the requirements of Section 302 and that the new emission mitigation plan will not result in less emission reduction than the previous emission mitigation plan.
- b. If no changes to the permit are required the Air Pollution Control Officer will take final action on the update no later than 90 days after acceptance of the update as complete or after such longer time as both the owner/operator and the Air Pollution Control Officer have agreed in writing.
- c. The Air Pollution Control Officer shall consider all written comments prior to taking final action on the update.

403.3 **PUBLIC NOTIFICATION:** The Air Pollution Control Officer shall make available for public inspection at the District's office the information submitted by the owner/operator of the large CAF. Notice of the intent to approve shall be published in at least one newspaper of general circulation in the District and shall note how pertinent information can be obtained, and inviting written public comment for a 30-day period following the date of publication. All such information shall be transmitted to the California Air Resources Board and to any party which requests such information. Information that contains trade secrets shall be handled in accordance with Section 6254.7 of the California Government Code and relevant sections of the California Administrative Code.

403.4 **FINAL PUBLIC NOTIFICATION:** The Air Pollution Control Officer shall provide written notice of the final action taken on updates subject to the Public Notification requirement of Section 403.3 to the owner/operator of the large CAF, the California Air Resources Board and to any person who submitted written comments pursuant to Section 403.3. A notice shall be published in at least one newspaper of general circulation in the District and shall note how pertinent information can be obtained.

403.5 **DENIAL:** In the event of denial of the emission mitigation plan update, the Air Pollution Control Officer shall notify the owner/operator of the large CAF in writing of the reasons therefore. Service of this notification may be made in person or by mail, and such service may be provided by the written acknowledgement of the persons served or affidavit of the person making the service.

403.6 **APPEALS:** Within thirty days after notice, by the Air Pollution Control Officer, of denial of an emission mitigation plan update the owner/operator or any other aggrieved person who participated in the update process may petition the Hearing Board, in writing, for an order modifying or reversing that decision. The Hearing Board, after notice and a public hearing held within thirty days after filing the petition, may sustain or reverse the action of the Air Pollution Control Officer; such order may be subject to specified conditions.

404 **CALCULATION FOR DETERMINING PERCENT OF ANIMAL WASTE OR SEPARATED SOLIDS BEING SENT TO AN ANAEROBIC DIGESTER:**

404.1 **DAIRIES:** The percent of animal waste or separated solids being sent to the anaerobic digester on a dairy will be determined by the following equation:

$$\%W = \frac{M}{150 \times N_M + 83 \times N_D + 33.5 \times N_H + 13.5 \times N_C} \times 100$$

- Where: %W = percent of animal waste or separated solids being sent to the digester on a daily basis.
M = the rate of animal waste or separated solids being sent to the digester, in lb/day
N_M = the number of milk-producing cows at the dairy
N_D = the number of dry cows at the dairy
N_H = the number of heifers at the dairy
N_C = the number of calves at the dairy

404.2 **POULTRY RANCHES:** The percent of animal waste or separated solids being sent to the anaerobic digester on a poultry ranch will be determined by the following equation:

$$\%W = \frac{M}{M_T} \times 100$$

- Where: %W = percent of animal waste or separated solids being sent to the digester
M = the rate of animal waste or separated solids being sent to the digester, in lb per house cleaning
M_T = the total amount of animal waste or separated solids produced at the poultry ranch, in lb per house cleaning

500 MONITORING AND RECORDS

501 **MONITORING AND RECORDKEEPING:** The following records will be kept on site for a minimum of five years and shall be made available when requested by the Air Pollution Control Officer. All records must be sufficient to demonstrate compliance with the permit.

501.1 GENERAL

- a. **ANIMAL COUNT:** The owner/operator must keep a record of the total number of animals in each of the following categories, upon approval of the permit: milk-producing dairy cows, heifers, calves, beef cattle, other cattle, laying hens, chickens other than laying hens, turkeys, swine, sheep, lambs, goats, horses, ducks, rabbits, or other animal. The record shall be updated, once per day, if needed, to reflect any change in the total animal count including when animals are bought, sold, born, die, or are transferred from the CAF for any other reason.
- b. **MANUFACTURERS INFORMATION:** The owner/operator must keep any information provided by the manufacturer regarding the operation or implementation of a product used in an emission mitigation measure.
- c. **DESIGN SPECIFICATIONS:** The owner/operator must keep any design specifications related to anything built or created specifically for the facility in order to implement an emission mitigation measure.
- d. **TEST RECORDS:** All records of any monitoring or testing must be kept on site.
- e. **ADDITIONAL MONITORING:** An owner/operator shall test any other parameters determined necessary by the Air Pollution Control Officer to demonstrate compliance with rule requirements as frequently as determined necessary.
- f. **ADDITIONAL INFORMATION:** The owner/operator must keep any additional supporting information, determined by the Air Pollution Control Officer, necessary to confirm the implementation of the emission mitigation plan.

501.2 MULTIPLE CATEGORIES

- a. **PERIODICALLY PERFORMED MEASURES:** Any owner/operator who implements a mitigation measure that requires periodic actions, as in Sections 303.1(a)(3), 303.1(a)(4), 303.1(d)(1), 303.1(d)(4), 303.1(d)(5), 303.1(d)(8), 303.1(e)(1)(a or b), 303.1(e)(4), 303.2(a)(5), 303.2(b)(1), 303.2(b)(2), and 303.2(b)(6), must keep a log of when those actions were performed.
- b. **VOC CONTROL DEVICES:** Any owner/operator who is using a VOC control device as part of a mitigation measure, as in Sections 303.1(b)(3)(a or b), 303.1(c)(2), 303.1(e)(12), 303.1(f)(5), 303.1(f)(6), 303.1(f)(7), 303.1(g)(8), 303.2(b)(13), 303.2(c)(4), 303.2(c)(5), and 303.2(d)(8), shall conduct an initial source test of all VOC control devices not later than twelve months after the date of installation, and at least once every twelve months thereafter. All test records will be kept on site.
- c. **ANAEROBIC DIGESTERS:** Any owner/operator who implements a mitigation measure related to using an anaerobic digester, as in Sections 303.1(f)(4)(b), 303.1(f)(7), 303.1(h)(2), and 303.2(c)(4), shall keep records of the pounds of solid animal waste and separated solids being sent to the digester. Additionally, records will be kept to show the digester meets the specifications listed in the NRCS California Field Office Technical Guide Code 365 or 366 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

501.3 FEED AND SILAGE

- a. **FEED CONTENT:** Any owner/operator who implements a mitigation measure related to feed content, as in Sections 303.1(a)(1), 303.1(a)(2), 303.1(b)(3)(c), 303.2(a)(1) through 303.2(a)(4), and 303.2(a)(8), shall keep:
 1. records of feed content, formulation, supplements and/or quantity of feed additive utilized, as applicable; or
 2. if the owner/operator is contractually obligated to use proprietary feed, then the quarterly certifications as required in Section 303.2(a) shall be kept on site and the supplier will make all records of feed content, formulation, supplements and/or quantity of additive utilized, as applicable, available upon request by the Air Pollution Control Officer.
- b. **FEED PROCESSING:** Any owner/operator who implements a mitigation measure related to feed processing, as in Sections 303.1(a)(6) and 303.2(a)(7), must keep a log of when feed is processed and when that processed feed is either fed to the animals or disposed.
- c. **UNEATEN WET FEED:** Any owner/operator who implements a mitigation measure related to removing wet feed, as in Sections 303.1(a)(5) and 303.2(a)(9), must record when any wet feed was removed.
- d. **SILAGE LEACHATE:** Any owner/operator who implements a mitigation measure related to collecting silage leachate, as in Section 303.1(b)(2), and is actively collecting the leachate must keep a log of the date and the manner in which the leachate was collected.

501.4 ANIMAL HOUSING

- a. **CORRAL USAGE:** Any owner/operator who houses animals in corrals must keep a record of when a corral stops being used for animal housing.
- b. **LEAK INSPECTION AND REPAIR:** Any owner/operator who implements a mitigation measure related to water leak inspection and repair, as in Sections 303.1(d)(2), 303.1(e)(8), and 303.2(b)(11), shall keep a log of when inspections took place and a description of any repairs that took place.
- c. **ANIMAL WASTE DEPTH:** Any owner/operator who implements a mitigation measure related to animal waste depth, as in Sections 303.1(e)(1)(c), 303.1(e)(2), and 303.1(e)(3), must record when the animal waste is cleaned from the area.

- d. **LIME, THYMOL, OR OTHER ABSORBENT MATERIAL:** Any owner/operator who implements a mitigation measure related to the application of lime, thymol, or some other absorbent material, as in Section 303.1(e)(11), shall keep records of amount, date and location of where material was applied.
 - e. **POULTRY LITTER ADDITIVES:** Any owner/operator who implements a mitigation measure related to poultry litter additives, as in Section 303.2(b)(3), must record the date and location of where the additive was applied and the quantity of additive applied.
 - f. **ROOF MAINTENANCE AND RUNOFF:** Any owner/operator implementing a mitigation measure related to roof maintenance and runoff, as in Section 303.2(b)(12), must keep all information showing compliance with the standards in the NRCS Field Office Technical Guide Code 558 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
- 501.5 **SOLID ANIMAL WASTE AND SEPARATED SOLIDS**
- a. **ANIMAL WASTE OR SEPARATED SOLIDS REMOVAL:** Any owner/operator who implements a mitigation measure related to removal of animal waste or separated solids from the facility, as in Sections 303.1(f)(3), 303.1(f)(4)(a), and 303.2(c)(1)(a), or if poultry animal waste is being sent to a lagoon, as in Section 303.2(c)(1)(b), must record when the animal waste or separated solids were removed from the animal housing or the solids separator, when they were removed from the facility or sent to the lagoon, and the amount removed.
- 501.6 **LIQUID ANIMAL WASTE**
- a. **PHOTOTROPIC LAGOONS:** Any owner/operator who is using a phototropic lagoon as a mitigation measure, as in Sections 303.1(g)(2)(a) or 303.2(d)(2)(a), shall test and record the lagoon for bacteria concentration, bacteriochlorophyll a concentration, or a surrogate parameter according to the most recent NRCS guidelines no later than twelve months after issuance of the permit and at least once every twelve months thereafter.
 - b. **AEROBIC LAGOONS:** Any owner/operator who is using an aerobic lagoon as a mitigation measure, as in Sections 303.1(g)(5)(a), 303.1(h)(2) and 303.2(d)(5)(a), shall test and record the lagoon for dissolved oxygen content no later than twelve months after the date of issuance of the permit, and at least once every three months thereafter. All information must be kept showing compliance with the standards in the NRCS California Field Office Technical Guide Code 359 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
 - c. **ANAEROBIC LAGOONS:** Any owner/operator who is using an anaerobic lagoon as a mitigation measure, as in Sections 303.1(g)(2)(b), 303.1(h)(2) and 303.2(d)(2)(b), shall keep all information showing compliance with the standards in the NRCS California Field Office Technical Guide Code 359 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
 - d. **SOLID SEPARATORS:** Any owner/operator who implements a mitigation measure related to using a solid separator, as in Sections 303.1(g)(3) and 303.2(d)(3), must keep all information showing compliance with the standards set forth in the NRCS California Field Office Technical Guide Code 632 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.
 - e. **MECHANICALLY AERATED LAGOONS:** Any owner/operator who is using a mechanically aerated lagoon as a mitigation measure, as in Sections 303.1(g)(5)(b) and 303.2(d)(5)(b), shall test and record the lagoon for biological oxygen demand within twelve months after the date of issuance of the permit and at least once every twelve months thereafter. All information

must be kept showing compliance with the standards in the NRCS California Field Office Technical Guide Code 359 or other applicable standards approved by the Air Pollution Control Officer, California Air Resources Board, and U.S. Environmental Protection Agency.

- f. **LAGOON PH:** Any owner/operator who is controlling the pH of their lagoon as a mitigation measure, as in Sections 303.1(g)(4) and 303.2(d)(4), shall test and record the lagoon for pH no later than twelve months after issuance of the permit and at least once every three months thereafter.
- g. **ORGANIC LOADING:** Any owner/operator who is controlling the organic loading of their lagoon as a mitigation measure, as in Sections 303.1(g)(6) and 303.2(d)(6), shall test and record the organic content of the lagoon no later than twelve months after issuance of the permit and at least once every three months thereafter.

501.7 **LAND APPLICATION**

- a. **ANIMAL WASTE LAND APPLICATION:** Any owner/operator who implements a mitigation measure related to animal waste land application, as in Sections 303.1(d)(9), 303.1(h)(1), 303.1(h)(2), and 303.1(h)(3)(a), shall keep records of the date, location, and quantity of animal waste that is applied to the land. In addition, if implementing the mitigation measures in Sections 303.1(d)(9) or 303.1(h)(1), a record of when solid animal waste is removed from animal housing shall be kept.

502 **TEST METHODS:** The following test methods shall be used to determine compliance with applicable emission mitigation measures:

- 502.1 **BIOLOGICAL OXYGEN DEMAND:** The biological oxygen demand shall be determined by U.S. Environmental Protection Agency Method 405.1.
- 502.2 **DISSOLVED OXYGEN:** The dissolved oxygen content shall be determined by U.S. Environmental Protection Agency Method 360.1 or 360.2.
- 502.3 **PH:** The pH shall be determined by U.S. Environmental Protection Agency Method 150.1 or ASTM method D4980-89.
- 502.4 **MOISTURE CONTENT:** The moisture content shall be determined by the difference from the percent residue using U.S. Environmental Protection Agency Method 160.3.
- 502.5 **ORGANIC LOADING:** The organic loading rate shall be determined by the Standard Methods of the Examination of Water and Wastewater Method 2540 G – Solids.
- 502.6 **PHOTOTROPIC LAGOONS:** Phototropic lagoons will be tested according to the most recent NRCS guidelines.
- 502.7 **VOLATILE ORGANIC COMPOUNDS:** Volatile organic compound emissions shall be determined using U.S. Environmental Protection Agency Test Method 25 or 25A. If U.S. Environmental Protection Agency Test Method 25A is used, U.S. Environmental Protection Agency Test Method 18 shall be used to determine methane content.
- 502.8 **TRAVERSE POINTS AND FLOW RATES:** Traverse points and flow rates for source tests and traverses shall be determined by U.S. Environmental Protection Agency Methods 1 or 1A and 2 or 2C, as applicable.
- 502.9 **DETERMINATION OF CAPTURE EFFICIENCY:** Efficiency of the collection system shall be determined in accordance with U.S. EPA “Guidelines for Determining Capture Efficiency, January 9, 1995”. Individual collection efficiency test runs subject to the U.S. EPA technical guidelines shall be determined by:
 - a. Applicable U.S. EPA methods 204, 204A, 204B, 204C, 204E, and/or 204F; or
 - b. The South Coast Air Quality Management District “Protocol for Determination of Volatile Organic Compound (VOC) Capture Efficiency”; or
 - c. Any other method approved by the U.S. EPA, the California Air Resources Board, and the Air Pollution Control Officer.

This Page Intentionally Left Blank