

LIST OF MANURE MANAGEMENT PRACTICES INCENTIVIZED THROUGH THE ALTERNATIVE MANURE MANAGEMENT PROGRAM

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The Alternative Manure Management Program (AMMP) supports several project types for which there are methods to quantify greenhouse gas (GHG) emission reductions – this program follows the Quantification Methodology and Benefits Calculator Tool developed by the California Air Resources Board (<https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials>). Methane is produced when volatile manure solids are stored in wet, anaerobic conditions; consequently, conditions that lead to methane production must currently exist at a dairy or livestock operation in order for methane emission reductions to be achieved through an AMMP project.

While solid separation or conversion from flush to dry scrape manure collection can be a critical component of an AMMP project, these practices are not considered to be stand-alone projects because they relate only to how manure is separated or collected. To calculate baseline GHG emissions and projected emission reductions, it is also necessary to identify how the separated or collected manure volatile solids will be treated and/or stored (e.g., open solar drying, composting in vessel). The storage or further treatment of the collected solids produces methane to varying degrees, as determined by the Methane Conversion Factor (MCF) for each method.

The following manure management practices are currently incentivized through the AMMP:

1. **Pasture-based management** including (i) conversion of a non-pasture dairy or livestock operation to pasture-based management and/or (ii) increasing the amount of time livestock spend at pasture at an existing pasture operation.

Note: All pasture-based management projects must currently manage/store some manure in anaerobic conditions and introduce new practices that reduce the quantity of manure managed under such conditions.

2. **Alternative manure treatment and storage** practices including:
 - a) Installation of a **compost bedded pack barn** that composts manure in situ;
or
 - b) Installation of **slatted floor pit storage manure collection** that must be cleaned out at least monthly.
3. **Solid separation** of manure solids prior to entry into a wet/anaerobic environment (e.g., lagoon, settling pond, settling basin) at a dairy or livestock operation in

conjunction with one of the manure treatment and/or storage practices listed below. Eligible solid separation technologies include:

- a) **Weeping Wall** (system must have a minimum of at least two cells)
- b) **Stationary Screen**
- c) **Vibrating Screen**
- d) **Screw Press**
- e) **Centrifuge**
- f) **Roller Drum**
- g) **Belt Press/Screen**
- h) **Advanced solid-liquid separation assisted by flocculants and/or bead filters.** This practice must be implemented in conjunction with a primary mechanical separator.
- i) **Vermifiltration.** This practice must be implemented in conjunction with a primary mechanical separator.

Note: Either the installation of a new solid separation system at a dairy or livestock operation that does not currently employ solid separation, or the installation of a new solid separation system with significantly higher separation efficiency than the existing solid separation technology may be eligible.

- 4. **Conversion from a flush to scrape** manure collection system in conjunction with one of the manure treatment and/or storage practices listed below.

Manure Treatment, Drying and/or Storage

- a) **Open solar drying** of manure (manure is dried in a paved or unpaved open confinement area without any significant vegetative cover where accumulating manure may be removed periodically);
- b) **Closed solar drying** (drying of manure in enclosed environment);
- c) **Forced evaporation with natural-gas fueled dryers;**
- d) **Daily spread** (manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion);
- e) **Solid Storage** (storage of manure, typically for a period of several months, in unconfined piles or stacks);
- f) **Composting in vessel** (composting in an enclosed vessel, with forced aeration and continuous mixing);
- g) **Composting in aerated static pile** (composting in piles with forced aeration but no mixing);
- h) **Composting in intensive windrows** (with regular turning for mixing and aeration);
- i) **Composting in passive windrows** (with infrequent turning for mixing and aeration).
- j) **Composting in aerated vermifiltration system** (solids separated by vermifilter are also processed by worms within the vermifilter)