



May 18, 2020

Climate Action Reserve

Via electronic submittal

Subject: Soil Enrichment Protocol

To Whom It May Concern:

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to provide comment on the Climate Action Reserve's (CAR) draft Soil Enrichment Protocols which outline a program to quantify and earn credit for changes in agricultural practices which sequester carbon in soil and decrease greenhouse gas (GHG) emissions. CASA is an association of local agencies engaged in advancing the recycling of wastewater into usable water, as well as the generation and beneficial use of renewable energy, biosolids, and other valuable resources. Through these efforts, we help create a clean and sustainable environment for Californians.

An overarching concern is that the use of biosolids is not recognized anywhere in the protocol as an organic fertilizer/soil amendment that results in the reduction of GHG emissions and sequestration of carbon in the soil below. Biosolids are produced as an inherent part of the wastewater treatment process and can be land applied in agricultural settings helping to mitigate climate change by substituting for the use of fossil fuel intense inorganic fertilizer and by improving long-term sequestration of carbon in soil. Roughly 0.22 gallons of fossil fuel is required to produce every pound of inorganic nitrogen fertilizer, illustrating the tremendous offset gained by using biosolids for land application. Because biosolids are an organic matrix, rich in organic carbon and nitrogen as well as other valuable micro and macro nutrients, biosolids improve soil tilth, reduce the need for irrigation by increasing the soil's water holding capacity, and increase crop production. Reduced irrigation needs does seem captured in the protocol by virtue of organic fertilizers, like biosolids and compost. CASA strongly recommends explicit inclusion of biosolids, including Class B, Class A, and biosolids compost as an eligible source of organic nitrogen (offsetting the need for synthetic alternatives) and for their ability to sequester carbon as well as reduce GHG emissions, and irrigation needs.

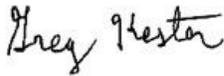
Specific comments:

1. Table 3.1 Soil Amendments: Recommend adding "Biosolids" to both the Qualitative and Quantitative columns.
2. Section 3.5 Requirements for Permanence: Requires that GHG emission reductions be quantified for 100 years from the beginning of the crediting period. It is unclear what happens if ownership changes with the new owner changing practices or if the land is developed for housing, commercial or other purposes. Must the buffer pool then be utilized for the remaining compliance period? Or should the Tonne-year accounting option be utilized?

3. Table 4.1 (3) Fertilizer Use – Only seems to look at N₂O emissions from fertilizer use. Recommend also including the carbon sequestration from organic fertilizers including biosolids. Please see Dr. Brown (U of WA) and Dr. Ryals (UC Merced) work on this.
4. Table 4.1 (7) – Fossil fuel use – Only considers fuel use for equipment. Should include benefit from avoiding the fossil fuel required to produce inorganic nitrogen fertilizer (~0.22 gallons per pound of inorganic nitrogen).
5. Section 5.1 – Modeling of Baseline – Appears not to consider current fertilizer practices (ie, synthetic versus organic) and thus cannot give credit when a switch is made to biosolids or other organic fertilizer.
6. Glossary of Terms – Replace “sewage sludge” with “biosolids” in the definition drafted for Organic nitrogen fertilizer.

Please feel free to contact me directly at gkester@casaweb.org or at 916-844-5262 for further information or with any questions. Thank you very much!

Sincerely,



Greg Kester
Director of Renewable Resource Programs