Cost of Bay Program Manure Treatment Technology "MTT-4 - High Temperature Gasification"
Also known as USDA-NRCS Conservation Practice Code 735 ("Waste Gasification Facilities")

Background: The CAST Model accepted BMP cost data from a N.C. State University Professor who attempted to determine the costs of MTT-4 by extrapolating from a lab-scale research project to a real-world manure gasification system that would process thousands of tons of manure or poultry litter per year. The current CAST Model significantly overstates both the capital and operating and maintenance costs of a large CAFO-scale manure or poultry litter gasification system.

Capital cost: The current CAST Model claims that the up-front, non-amortized capital cost of MTT-4 is $332.77 per ton. The CAST Model makes no attempt to differentiate between wet manure (e.g. dairy or hog) or dry manure (e.g. poultry litter).

The real-world, up-front, non-amortized, installed capital cost of MTT-4 (including personnel training) for drying and processing wet manure is approximately $65.00 per wet ton ($2.75 million divided by 42,000 wet tons per year) and approximately $137.50 per ton of poultry litter ($2.75 million divided by 20,000 tons of poultry litter per year).

Annual operating and maintenance costs: The CAST Model claims that the annual operating and maintenance cost of MTT-4 is $75.45 per ton of manure, again without differentiating between wet and dry manure.

The real-world annual operating and maintenance cost for drying and processing wet manure (e.g. dairy manure or hog manure solids) is approximately $10.71 per wet ton ($450,000 per year divided by 42,000 wet tons per year), and the operating and maintenance cost for processing dry manure such as poultry litter is approximately $22.50 per dry ton ($450,000 per year divided by 20,000 tons of litter per year).

Bottom line: Regardless of whether one is interested in understanding the costs of processing wet manures or poultry litter, the CAST Model currently overstates the capital cost and the annual operating and maintenance (O&M) costs of High Temperature Gasification (MTT-4) by 3- to 7-fold.