FARM Environmental Stewardship

Version 2 Data Collection Sheet

Instructions: The following spreadsheet can be used to collect data for FARM ES when access to the database is limited. The sheet can also be sent to producers to begin data collection; however, a second party evaluator must review the data prior to entering into FARM ES and discuss questions directly with the producer. Fields highlighted in blue are new in FARM ES Version 2. The grey boxes are where data should be entered.

FARM ES Inputs	Data	Notes / Guidance
EVALUATION INFO:		
Evaluation Date		Please enter the date on which the evaluation / data collection is taking place.
Evaluation Period Start Date (12 month period)		Please enter the starting date for the 12 month period that this evaluation represents. Often, this is the same as the January 1 to December 31 calendar year. In which case, you would enter "January 1" of that year.
Evaluator Name		
Evaluator Phone		Field auto-populates in database based on the evaluator name.
Evaluator Email		Field auto-populates in database based on the evaluator name.
Evaluator Company		Field auto-populates in database based on the evaluator name.
FACILITY INFO:		
Facility Name		
Facility Street Address		Field auto-populates in database based on the facility name.
Facility City		Field auto-populates in database based on the facility name.
Facility State		Field auto-populates in database based on the facility name.
Facility Zip-5		Field auto-populates in database based on the facility name.

Notes:

REMINDER: All data should reflect the 12 month evaluation period.

MILK PRODUCTION:

Total Annual Milk Production (lbs.)	lbs.	Total annual pounds of milk shipped, used on-farm, or other.
Avg milk protein content (%) | from 1% to 5%	%	Enter true protein content.
Avg milk fat content (%) | from 1.8% to 5.5%	%	

Notes:

HERD PROFILE:

For heifers and calves, record the running herd average of the replacement animals, not the annual total. In other words, how many heifers / calves are typically present at any one time -- not the total number born that year.

Annual Avg # of Lactating & Dry cows		The average herd size includes both lactating and dry cows.
Annual Avg of Dry cows (% of herd) | range from 0% to 30%	%	The % of the herd that is typically dry. Values typically in the 8 to 12% range.
Annual Avg # of Heifer calves (< 2 months old / pre-wean) raised ON farm		ON-farm: Calves and heifers raised on the farm where the milk production is occurring.
Annual Avg # of Heifer calves (< 2 months old / pre-wean) raised OFF farm		OFF-farm: Calves and heifers raised elsewhere such as at a neighbor's farm down the road or another operation many miles away.
Annual Avg # of Heifers (2 months to first calf) raised ON farm		ON-farm: Calves and heifers raised on the farm where the milk production is occurring.
Annual Avg # of Heifers (2 months to first calf) raised OFF farm		OFF-farm: Calves and heifers raised elsewhere such as at a neighbor's farm down the road or another operation many miles away.

Notes:

BEEF PRODUCTION:

Annual # of mature cows culled for beef		For mature cows culled for beef, exclude cows sold to other farms for additional production as well as cows that die of natural causes or are otherwise euthanized.
Average weight per cow (lbs) | range from 700 to 2,000 lbs.	lbs.	
Total annual number of calves sold for beef		For calves sold for beef, do not include calves sold as replacement animals to other dairies.
Average weight at time of sale (lbs) | range from 50 to 700 lbs.	lbs.	

Notes:

RENEWABLE ENERGY:

If the farm does not generate solar / wind, skip this section. Renewble Energy Certificates (RECs): The lease or installation contract should say who owns the RECs. If the farm participates in a state incentive program, this database (http://www.dsireusa.org/) may show who owns the REC for that type of project. If the farm is unsure if they generate RECs or if they do not generate RECs, select 'none generated'.

Total Annual Solar Energy Generated on-site (kwh)	kWh	
If the farm generates solar energy:		
Does the farm own the REC or other energy certificates associated with the solar energy?	Owns / Sold / None Generated	See notes on REC above.
Does the farm participate in net metering?	Yes / No	
(if **not** participating in net metering) Is the solar energy used on-site or exported off-site?	On-Site / Off-Site	
Total wind energy generated on-site (kwh)	kWh	
If the farm generates wind energy:		
Does the farm own the REC or other energy certificates associated with the wind energy?	Owns / Sold / None Generated	See notes on REC above.
Does the farm participate in net metering?	Yes / No	
(if **not** participating in net metering) Is the wind energy used on-site or exported off-site?	On-Site / Off-Site	

ENERGY SOURCES:

Energy used for heating water, milking, scraping, fans, grinding, or other dairy activities. Exclude energy for crop production activities. You can specify an estimated % used on dairy activities for each energy type. More information and guidance is found in the FARM ES User Guide.

Electricity - Total annual on-farm use (KWh)	kWh	Exclude on-site solar, wind, or anaerobic digester energy. If participate in net metering, enter total electricity consumed from annual summary -- do not enter the 'net' electricity.
Electricity - % used for dairy activities	%	
Diesel - Total annual on-farm use (Gal)	Gal	
Diesel - % used for dairy activities	%	
Biodiesel - Total annual on-farm use (Gal)	Gal	
Biodiesel - % used for dairy activities	%	
Fuel Oil - Total annual on-farm use (Gal)	Gal	
Fuel Oil - % used for dairy activities	%	
Propane - Total annual on-farm use (Gal)	Gal	
Propane - % used for dairy activities	%	
Natural Gas - Total annual on-farm use (therms)	therms	
Natural Gas - % used for dairy activities	%	
Gasoline - Total annual on-farm use (Gal)	Gal	
Gasoline - % used for dairy activities	%	

Notes:

REMINDER: All data should reflect the 12 month evaluation period.

PASTURE:

If you pasture your animals, fill in the following:		
Lactating - # Weeks/Year and Hours/Day Pastured	weeks / yr	hrs / day
Dry - # Weeks/Year and Hours/Day Pastured	weeks / yr	hrs / day
Young Stock - # Weeks/Year and Hours/Day Pastured	weeks / yr	hrs / day

Notes:

AVERAGE LACTATING COW DRY MATTER INTAKE (DMI):

Average daily DMI for the production period (lbs./day) | range from 25.0 to 70.0 lbs / day	lbs. / day	Average Dry Matter Intake (DMI) per head per day for lactating animals (excluding dry cows and young stock).

Notes:

LACTATING COW RATION DRY MATTER MAKE-UP

Enter % of each feed ingredient on a dry matter basis that makes up the average dry matter intake. Must add up to 100%.

Corn Grain % | ranges from 0% to 40%	%	
Corn Silage % | ranges from 0% to 60%	%	
Wet DGS %| ranges from 0% to 40%	%	
Dry DGS % | ranges from 0% to 30%	%	
Soybean % | ranges from 0% to 15%	%	
Soybean Meal % | | ranges from 0% to 30%	%	
Alfalfa Hay % | ranges from 0% to 80%	%	
Alfalfa Silage % | ranges from 0% to 70%	%	
Grass Hay % | ranges from 0% to 40%	%	
Grass Silage % | ranges from 0% to 40%	%	
Pasture % | ranges from 0% to 100%	%	
All Other Feed % | ranges from 0% to 90%	%	

Notes:

SELF-PRODUCED CROPS

This section refers to the crops produced on the farm that are used as feed for the dairy operation. For each crop type listed used as dairy feed, specify the % that is self-produced. For the purpose of FARM ES, self-produced= crop production where the dairy owner has operational control over crop production decisions, such as production on dairy itself, or on a related LLC or entity. Purchased would be anything where the dairy does not have any operational control; for example grain or forage purchased from a neighbor.

Soybean - % Self-Produced	%	
Corn Grain - % Self-Produced	%	
Corn Silage - % Self-Produced	%	
Alfalfa Hay - % Self-Produced	%	
Alfalfa Silage - % Self-Produced	%	
Grass Hay - % Self-Produced	%	
Grass Silage - % Self-Produced	%	

REMINDER: All data should reflect the 12 month evaluation period.

NUTRIENT MANAGEMENT PLANS

Does the farm have a written nutrient management plan?	Yes / No	Indicate 'yes' if the farm has a Nutrient Management Plan (NMP), Comprehensive Nutrient Management Plan (CNMP), or Manure Management Plan (MMP).
If yes, select a type of Nutrient Management Plan	☐ Manure Mgmt. Plan ☐ Nutrient Mgmt. Plan ☐ Comprehensive Nutrient Mgmt. Plan	Select one.
Does the farm maintain the NMP? Maintained means it is reviewed regularly and updated as needed.		Maintained means it is reviewed regularly and updated as needed. Indicate 'yes' if the NMP is reviewed at least every five years to determine if updates are needed. State or local regulations may require the plan to be updated more frequently.
Does the farm implement the NMP?		Implementation means that the farm follows the NMP's guidance around nutrient testing, nutrient application, recordkeeping and any other requirements.

Notes:

MANURE MANAGEMENT SYSTEMS

This spreadsheet includes space for 4 manure management systems. If the farm has more than 4 systems, record them in the notes field. Up to 18 can be entered into FARM ES. For each MMS, enter the estimated % of manure going to that system. Include all manure from the dairy operation (i.e. manure from from lactating cows, dry cows, heifers, and calves). See the User Guide for more information.

Manure Management Systems # 1		
MMS #1 Estimated %	%	
Manure Management Systems # 2		
MMS #2 Estimated %	%	
Manure Management Systems # 3		
MMS #3 Estimated %	%	
Manure Management Systems # 4		
MMS #4 Estimated %	%	

If the farm uses solid-liquid separation or anaerobic digestion, please complete the appropriate sections on the next page.

Notes:

SOLID-LIQUID SEPARATION (applicable for solid-liquid separators)

Specify how the solid and liquid fractions are managed after going through solid-liquid separation. Do not duplicate the manure management strategy in this section and the second above. In other words, if all manure goes through the solid-liquid separator, select SLS on the previous page and mark it as 100%.

Does the SLS happen before or after an AD?	Before / After / Without Digester	
Separation Efficiency - %	%	Separation efficiency varies greatly based on many factors, such as separator type and design, manure consistency, total solids content, and flow rates. Talk to the manufacturer for more information. Suggested values for separation efficiency: screw press (25% to 45%); centrifuge (50% to 61%); stationary screens (15% to 50%), rotating screens (1% to 14%); belt press (30% to 50%); roller press (10% to 40%).
Liquids Management type		
Solids Management 1 type		FARM ES can accommodate up to 2 systems of solids management post-solid-liquid-separation. Specify the % of the solids that go into each system -- total must equal 100%.
Solids Management 1 - %	%	
Solids Management 2 type		
Solids Management 2 - %	%	
Which type of solid-liquid separator does the farm use?	Belt press / Centrifuge / Gravity settling / Roller press / Rotating screens / Screw press / Stationary screens / Other (please specify): _____	Circle one

Notes:

ANAEROBIC DIGESTERS (applicable for anaerobic Digesters):

Volatile Solids Conversion Efficiency | range from 20% to 65%	%	Solids-to-gas conversion efficiency of the digester.
MMS for Effluent		Select the manure management system (MMS) that best describes how the effluent is treated after exiting the digester.
% Electricity Generation Potential Utilized | range from 0% to 40%	%	
Is the electricity generated used on-site or sold off-site?	On-Site / Off-Site	
Does the farm own the RECs or other energy certificates associated with the electricity generated from the digester?	Owns / Sold / None Generated	See 'Renewable Energy' section for more information about RECs.
% of Heating Potential Utilized| range 0% to 40%	%	

Notes: