

# Haubenschild Dairy Methane Digester

By: Jake Fischer

# Farm Background

- Near Princeton, MN
- Family owned and operated.
- 850 Cows in production, 100 in dry lot
- Milk 3x per day
  - Produces 59,500 pounds or 7000 gallons per day

# Project Formation

- Selected as “charter farm” by AgSTAR (EPA/DOE/USDA)
  - Assistance from AgSTAR, MDA, Dept. of Commerce
  - Constructed in 1999.
  - Total construction cost \$355,000
    - Grant: 127,500
    - 0% Loan: 150,000
    - Haubenschild Equity: \$77,000
      - 10-12 years ago.
      - Increases in labor and materials costs since then.
      - Haubenschilds contributed a lot of labor.

# Anaerobic Digestion System

- Manure Collection Pit
- Mix Tank
- Plug Flow Digester
  - ~20,000 gallons per day
  - ~15-20 days to move through
  - Produces ~72,500 cf of biogas per day
- Effluent Storage
- Gas Utilization
  - Generator (135 kW)
  - Flare

# Project benefits

- Reduced Odor
- Electricity
  - Enough for dairy and 70 households
  - Net Metering?
- Balanced waste product
- Reduced propane costs
  - Hot water heating
  - Facility/Floor heating
  - Predigestion Waste Heating
- Has been extremely efficient
  - 1999-2005 ran 96.8% of time.

# Photos



# Inside the Barn



# Plug Flow Digester



# Digester and Barn



# Genset



# Questions/Comments

Thank You!

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