

ANAEROBIC DIGESTION

CO-DIGESTION OF FOOD WASTE

Ridgeline Dairy

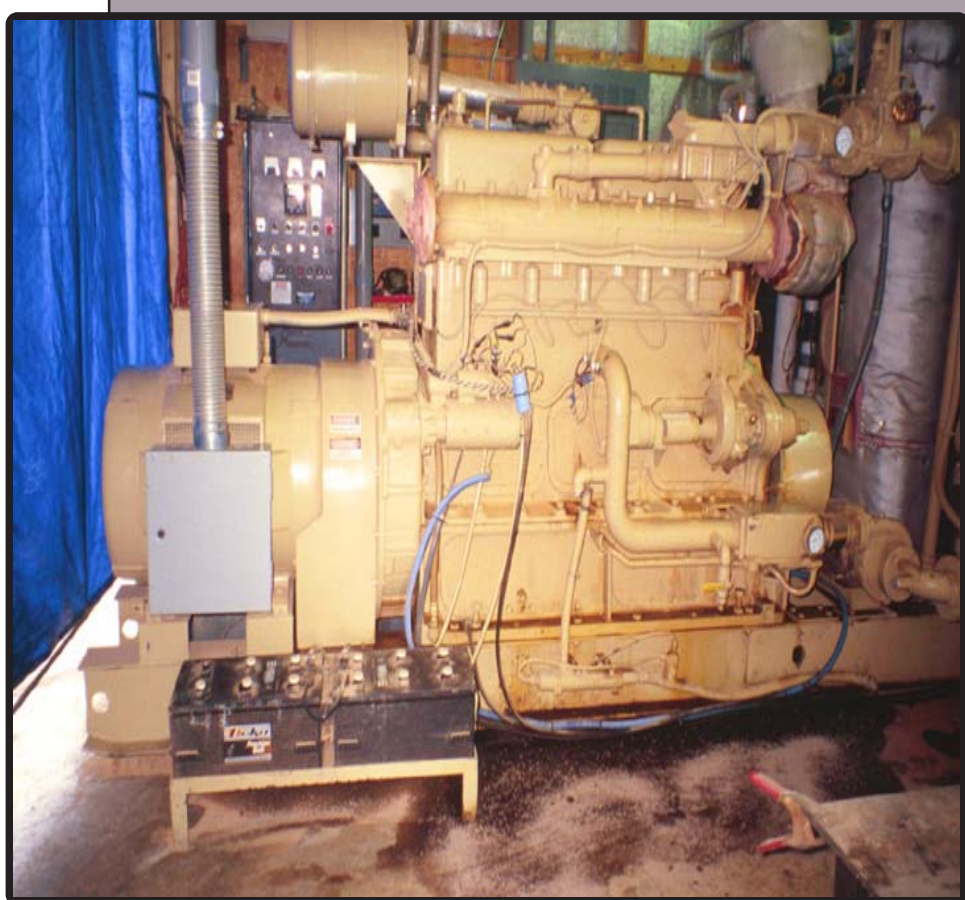
Clymer, Chautauqua County, NY



Twin digesters with separator building in background



Food waste pit and agitator



Engine-generator set

Digester type	Complete Mixed
Digester designer	RCM Digesters, Inc.
Influent	Manure & food waste (by-products from processing milk/ice cream, grapes and salad dressing)
Stall bedding material	Sawdust, digested separated manure solids, and coco shells
Number of cows	525 dairy cows
Rumensin® usage	Yes; dry cows only
Dimensions (width, length, height)	68' x 78' x 16'
Cover material	Soft top (Hypalon 45)
Design temperature	100°F
Estimated total loading rate	25,000 gallons per day
Treatment volume	634,900 gallons
Estimated hydraulic retention time	20 days
Solid-liquid separator	Not currently in use
Biogas utilization	Biogas boiler, Waukesha engine with 130-kW generator
Carbon credits sold/accumulated	Yes; AgCert™
Monitoring results to date	Yes; see page 5 of Case Study

Farm Background

- As of 2005, Matlink Dairy changed management and was renamed Ridgeline Farms.
- Ridgeline Farm is operated by Carl Neckers (dairy facility) and Vinny Howden (anaerobic digestion facility)
- The farm employs 16 people, and has a considerable impact on the local economy.
- The farm installed an anaerobic digester with support from NYSERDA to address a variety of issues including:
 - odor emissions
 - nutrient planning
 - creation of revenue source
- Matlink Dairy Farm started the construction of their anaerobic digester system in the summer of 2000; the system was commissioned in December 2001.

Lessons Learned

- Tipping fees from accepting food waste is highly profitable - it helps the farm produce more biogas and power, and helps the food company to export their waste in an environmentally responsible way.
- Shock loading the digester with food waste will create substantial amounts of foaming; this can be prevented by incrementally introducing a new substrate.
- Heat recovery from the engine-generator set is significant; this should be incorporated into the design plans to utilize this heat in a shop or in the barns.

