



Farm Pilot Project Coordination, Inc.
"Technologies for Nutrient Management"

April 22nd, 2009

To: Mr. William Boyd - Leader, Manure Management Team
East National Technical Support Center - NRCS

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Re: Quarterly Report for period from January 1st through March 31st, 2009

This report is intended to update the NRCS and the FPPC Board of Directors on the status of the innovative technology pilot projects.

Executive Summary

During the first quarter of 2009, FPPC completed three (3) projects and final reports were drafted to document project results. Progress continues on the renewable energy front and at five (5) approved projects in the limited resource farmer category.

Efforts have intensified to identify new funding opportunities for FPPC including various submittals of grant applications. FPPC continues to collaborate with others while seeking diversified sources of revenue.

OPERATIONS -----

- 1. Energy conversion projects:** Progress has been made on the Dual Use Pellet Project including site visits by FPPC representatives to assess the solid separators use at the Vermont and New York project sites. FPPC continues to work to mold the scope of work to insure a successful pilot project. Over the second quarter, FPPC anticipates finalizing plans, visiting multiple pelletizers, and evaluating different energy components.

Contacts provide from Kent Schien, of Innoventor have been introduced and follow up meetings at University of North West Missouri State University have been scheduled. Preston Burnette attended the Renewable Energy World Conference and Expo on March 10th in Las Vegas to meet and evaluate various equipment suppliers. Subsequently, a system design was submitted in a grant application for converting animal waste to heat and electrical energy for a poultry farmer in South Carolina.

All energy audits have been completed as FPPC continues to develop a complete thermal conversion project and expects to present a proposed project at the next Board meeting.

FPPC continued its due diligence on liquid fuels by meeting with Dr. Brad Plantz enzyme researcher from University of Nebraska and with an update from Steve McCorkle who is reporting progress on small scale applications being pursued for gasification/Fischer Tropsch.

- 2. Advisory Board:** The first meeting of the newly formed Professional Advisory Board (PAB) will be held in conjunction with the next FPPC Board of Directors meeting. The meeting has been scheduled in May 2009.
- 3. Technology Summit:** FPPC has scheduled this year's event for August 26th thru 28th at the Don CeSar Beach Resort in St. Petersburg, Florida. Save the date notification and early registration details will be posted next month. Speakers will be invited to address this year's theme "Renewable Energy at the Farm".

A. Progress at active pilot demonstration sites is summarized below:

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Dairy, Pennsylvania (#5.07) -----
Nutrient Control Systems, Integrity
Mercer Vu Farms in Mercersburg, Pennsylvania

Process description:

- Upgrading and enhancing the existing nutrient management system, making waste treatment of manure user friendly and cost effective.
- Capability for fine sand removal, additional solids separation capability, conveyor, blower & controls, building expansion, windrow turner and curing pad sufficient to support a viable composting operation.

Project Status:

During the first quarter the technology provider performed the primary testing of the decanter centrifuge, adjusting variables to acquire the best solids and nutrient capture rates. A decision will be made during the second quarter what system would be best for permanent installation at the Mercer Vu dairy. The technology project is in its final stage and a final report is expected at the end of the second quarter.

Dairy, Florida (#5.09 & #5.09a)-----
White Technologies Inc.
U.S. Environmental Products, Inc.
North Florida Holstein, Bell, Florida

Process description:

- Installation and development of solids removal capability via vacuum dewatering bed augmented by polymer additions
- Project 5.09a provides for on-site effort to optimize polymer addition and to debug current dewatering bed process

Project Status:

During the month of February, FPPC conducted a site visit to a similar dewatering facility in Orlando that utilizes the vacuum beds for municipal waste. This trip helped determine the average sludge concentration rate of 2-3% that White Technologies has designed the system to handle. FPPC found that the average dairy waste concentration was a mean average of 17%.

FPPC collected jar samples during the first quarter and anticipates filling the bed for test trials during the second quarter after some tile joints are re-caulked and repaired.



Laboratory and jar testing at the North Florida Holstein FPPC Lab

Dairy, Texas (#4.16)-----
Reaction Energy Corp.
Fisher Dairy, Yantis, Texas

Process description:

- Limited resource farm technology
- Development of struvite formation on a limited resource farm.
- Initial testing will provide a performance milestone for continuing the project.

Project Status:

During the second phase of this project the technology provider modified the system to make it less labor intensive by adding a 1,200 gallon staging tank to help facilitate filling the crystallization tanks.

During the months of January and February the technology provider struggled with automatic chemical feeder systems. The Magnesium Hydroxide being used is particularly fine and is dispensed unevenly. Too much time and effort was being wasted that the vendor elected to abandon that system. He is currently searching for another chemical dispensing system.

Dairy, Florida (#4.12)-----
AWS, LLC and FPPC
Dual purpose pellets derived from dairy solids

Process description:

- FPPC will work with AWS, LLC to develop a mobile pellet plant leveraging the knowledge gained during the previous belt press demonstrations.
- The system will consist of a belt press, pelletizer, and fluidized bed dryer.

Project Status:

FPPC continues to work with AWS to determine the best path forward for the dual use pellet project. Methods for pelletization are being researched as well as the quickest solution to obtain dry solids for testing.

Swine, Hawaii (#6.13)-----
University of Hawaii
Janong Natural Farms, Kurtistown, Hawaii

Process description:

- Pigs will be housed on green litter for limited resource farm applications
- Liquids will be absorbed by green waste material
- Project will identify the primary indigenous microorganisms
- Economic analysis of construction and design of a solar and naturally ventilated facility in Hawaii.

Project Status:

The project is making progress and is planning an open house in April 2009. FPPC is currently evaluating the best options to cover a site visit.

Swine, North Carolina (#4.14)-----
North Carolina A&T
University Farm, Greensboro, North Carolina

Process description:

- Process will incorporate solid separation, effluent treatment and wetland conservation.
- Designed for a limited resource farm.

Project Status:

During the first quarter of 2009, NC A&T has undertaken site preparation. Working closely with the local NRCS, the technology provider has laid the gravel and anticipates having the construction complete during the second quarter.

Poultry, Wisconsin (#5.04) -----
R&J Partnership
Creekwood Farms, near Madison
Weiss Poultry Farm in Kewaskum, Wisconsin

Process description:

- Utilizes chicken manure and mortality carcasses, along with a carbon source for conversion into a stable, organic fertilizer derived from laying hen facility.
- A bio-filter acts as a scrubbing mechanism to take out noxious odors associated with composting process.
- A key element in the process is the ammonia capture and the re-introduction of Nitrogen into the final composting process.
- Leachate is collected in tanks and is re-used during the process. The net effect is that the process is optimized so that Nitrogen values remain elevated.

Project Status:

FPPC conducted a site visit during the first quarter of 2009. The project is progressing and the electrical components were being installed during the visit. The manure and carcass containers are scheduled for fill during the Spring 2009.

Dairy, Ohio (#4.07)-----
Crossroads RC&D / Wastewater Services, Inc.
Andreas Farm, Royer Farm

Process description:

- Microbial enhancement.
- Flushed and dry scrape dairy sites.
- Package plant to treat effluent.
- Able to achieve nutrient and water quality levels acceptable for discharge.

Project Status:

FPPC monitored the project during the first quarter and is working with the technology providers to collect valid samples in order to determine the total suspended solids level. The laboratory results will be analyzed during the second quarter and a meeting has been scheduled on site to review results to date and to consider feasibility of continuing the project.

Poultry, Virginia (#4.06)-----
Virginia Polytechnic Institute and State University
Heatwole Poultry Farm

Process Description:

- Pyrolysis conversion of poultry litter to bio-fuel for on-site use
- Unit employs a fluidized bed and modern controls to operate the system

Project Status:

The pilot project is continuing on schedule and will be completed by September this year. FPPC staff is scheduled to visit the site during the second quarter.

Dairy, Virginia (#4.15)-----
Virginia Dairymen's Association
D&D Dairy, Dayton, Virginia

Process description:

- Limited resource farm technology
- Demonstrate and evaluate a high-efficiency screw press to remove solids.
- In conjunction with a struvite precipitation system to remove Phosphorus from the liquid stream

Project Status:

The project is in its final phase, FPPC is scheduled to conduct a site visit during the second quarter.

Swine, Iowa (#4.03)-----
Puck Custom Enterprises (PCE)
Muhlbauer Farm
Greenflash II Farm
Langle Farm

Project Description:

This project will develop and study geotextile as a means of collecting and dewatering and employs high pressure and rapid filling methods with metal salt/polymer flocculation. Comparative testing and evaluation is now being planned for three (3) separate swine sites in Iowa.

Project Status:

This project continues to move forward and next fill is scheduled before September of 2009.

Swine and Dairy, Michigan (#6.06)-----
Phase 3 Developments & Investments, LLC
Geerlings Hillside Farm

Process Description:

- Treatment of mixed animal waste from both swine and dairy.
- A series of waste treatment technologies (i.e. screw press and dissolved air flotation) have been integrated with an anaerobic digester to provide a complete system.
- Ultimately producing electrical power may be incorporated at a later date.
- Pelletization and transport of nutrients off site to organic fruit farms and other potential end users.

Project Status:

This project is completed and the technology provider is writing the final report.

Dairy/Mixed Waste, California (#5.06)-----
Agricultural Waste Solutions, Inc.
Inland Empire Municipal Site, Chino

Process description:

This project utilizes a regional model and a centralized location at the Inland Empire Utilities Agency site in Chino, California. Key elements of the pilot demonstration include the AWS centrifuge and gasification unit. The one-year testing program will test dairy, swine, beef, poultry, horse, digested sludge, food waste and mixes of wastes for their produced energy value. The demonstrations and tests will simulate a large range of farm waste systems, from high-volume flushes to dry-lot manure systems, in order to evaluate energy production, efficiency, costs, automation and maintainability. The improved centrifuge will remove moisture and is designed to uniformly condition the feed stock entering the gasifier.

The system consists of a skid-mounted centrifuge, a skid-mounted gasifier, an intermediate solids hopper, and augers from the centrifuge to the hopper as well as from the hopper to the gasifier. The unique centrifuge removes 98% of the suspended solids with 70% moisture. It is designed to uniformly condition the feedstock entering the gasifier.

Project Status:

The project is completed and the technology provider continues to work on the final report. .

Swine, North Carolina (#4.05) -----
Super Soil Systems
Goshen Ridge Farms in North Carolina

Process description:

- This 2nd generation technology system proposed a “mobile” solid separation capability

Project Status: During the first quarter FPPC met with NRCS to review outstanding invoices and determined appropriate payment to Super Soil Systems. A final report has been requested and will be a condition precedent to any further remittance of funds.

Attachment A

Final report status of twenty completed pilot demonstration projects is listed below:

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- A. Swine, North Carolina -----**
Super Soil Systems, USA (#3.09)
Goshen Ridge Farms, LLC - in Clinton, NC
“Solids Removal System to Reduce Environmental Impact of Swine Production”
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- B. Swine, North Carolina -----**
Air Diffusion Systems (#3.02)
Cavanaugh Farm No. 1 - swine farm in Wallace, NC
“Advanced Microbial Treatment System (AMTS) at Cavanaugh Farm No. 1”
Report Status: The final report has been reviewed, issued and posted on the FPPC website
- C. Swine, Iowa -----**
Global Resource Recovery Organization (GRRO) (#3.05)
Burt Farm & Livestock Co. - swine farm in Marshalltown, IA
“Pork Nutrient Management Demonstration”
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- D. Dairy, Florida -----**
Royal Consulting Services, Inc. (#3.08)
Posey Dairy in Lake Placid, FL
“Florida Dairy Nutrient Management Demonstration”
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- E. Poultry, North Carolina -----**
McGill Environmental Systems (#3.06)
Farms in Sampson County, NC
“Nutrient Management Technology for Animal Feeding Operations”
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- F. Poultry, North Carolina -----**
Cape Fear Resource Conservation (#3.03)
Central Processing Facility in Duplin County
“Demonstration Optimum Fertilizer of Ash from the BEST Solution for Swine and Poultry Manure Management”
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- G. Poultry, North Carolina -----**
Mountain Organic Materials (MOM) (#3.10)
Randy Johnson and David Parsons Farms, Wilkesboro, NC
“Demonstration of Poultry Manure and Mortality Forced Aeration Composting Bin Systems”
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- H. Poultry, Alabama-----**
Renewable Oil, Inc. (ROI) (#3.07)
Mills Poultry Farm in Russellville, AL
“Demonstrating BioOil Technology for Poultry Litter Nutrient Management”
Report Status: The final report has been reviewed, issued and posted on the FPPC website.

- I. Poultry, Texas -----
RMG Strategies, Ltd and Microganics (#3.11)
Jacobs Ranch in Carmine, TX
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- J. Dairy, Florida -----
AJT/Agrimond (#3.01)
Watson Dairy in Trenton, FL
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- K. Dairy, Wisconsin -----
Skill Associates – Phase I & II(#5.08)
Weise Farms in Greenleaf, WI
Report Status: The final report is currently under review.
- L. Dairy, Florida -----
Royal Consulting, Inc. (#4.01)
Butler Oaks in Lorida, Florida
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- M. Dairy, Florida -----
QED Occtech (#4.02)
Branford–DPS Dairy in High Springs, Florida
Report Status: The final report is currently under review to be re-posted on the FPPC website.
- N. Dairy, Florida -----
Chemical Lime Co. (#3.04)
Aprile Dairy in Riverview, Florida
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- O. Swine, Iowa -----
Global Resource Recovery Organization, Inc. (#3.13)
Mobile Deployment System, Eldora, Iowa
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- P. Dairy, Colorado -----
Applied Chemical Magnesias Corp. (ACM) (#3.12)
Bella Holsteins, Inc. in Platteville, Colorado
Report Status: The final report has been issued, reviewed, and posted on the FPPC website.
- Q. Dairy, Utah -----
Utah State University (#5.4.04)
Blaine Wade Dairy near Ogden, Utah
Report Status: A final report has been issued, reviewed, and will be posted on the FPPC website.
- R. Dairy, Vermont -----
AWS, LLC (#6.02)
North Williston Cattle Company (Whitcomb Farm)
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.

S. Dairy, New York -----
AWS, LLC (#5.05)
Noblehurst Farms
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.

T. Dairy, Vermont -----
BioProcess Technologies (#5.02)
North Williston Cattle Co.
Report Status: A final report has been submitted and is currently under review.

U. Swine, Illinois -----
Envirowaste Technology, Inc. (#4.09)
Rensing Family Farms, Inc.
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.