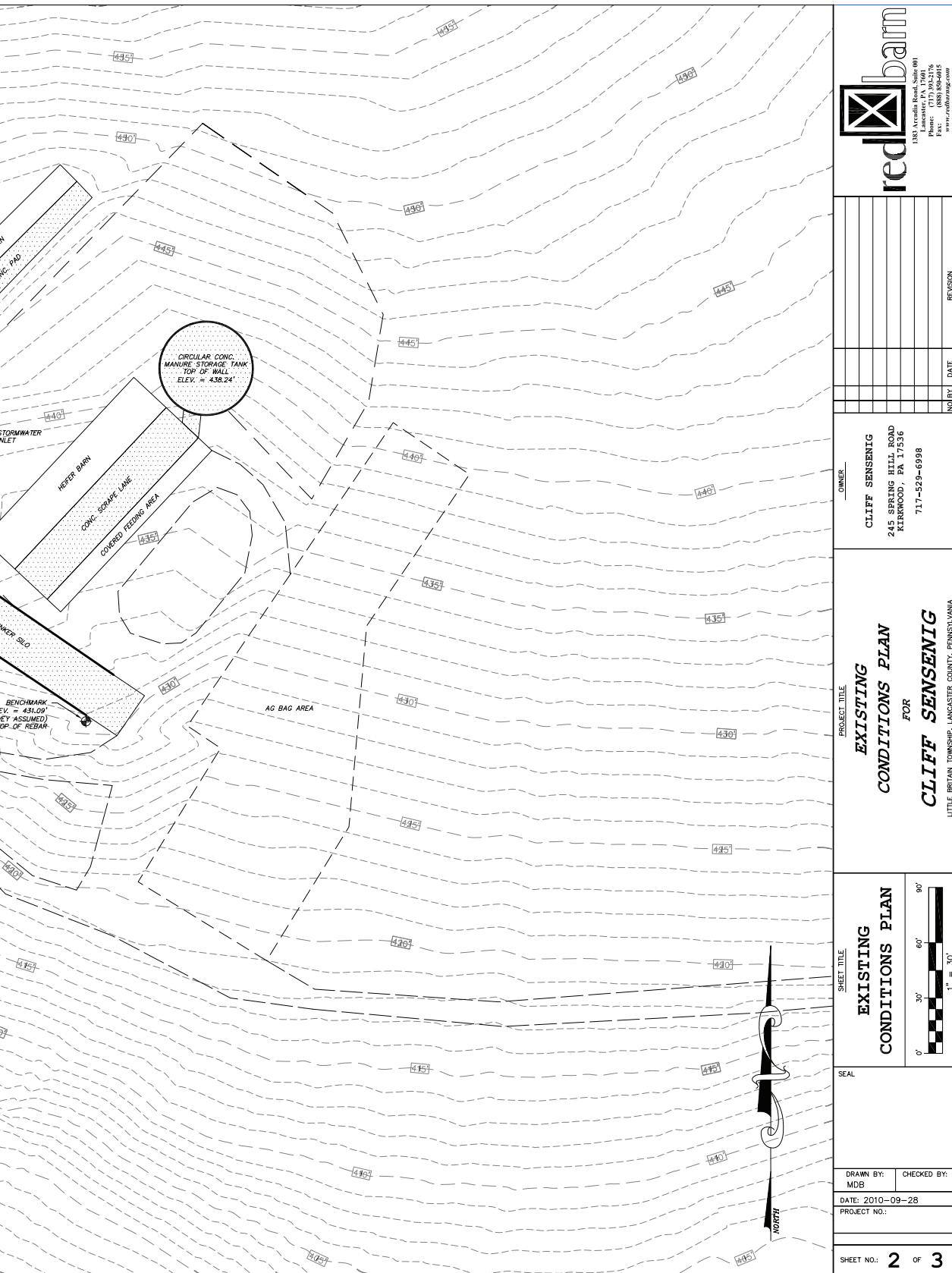


Resources and Contact Information

Blueprint



Resources and Contact Information...continued



Resources and Contact Information...continued

Open House Power Point

The Sensenig Family



Family & Farm Background



Family & Farm Background

- Andrea's background
- Cliff's background
- The history of our farm
 - 1990 – purchased by Earl
 - Purchasing cows
 - Trucking enterprise
- **Decision point #1 – trucking or farming?**
 - Farming! – 2008 signed papers to purchase the farm
 - Many rewards & many challenges

Family & Farm Background

- **Decision point #2 – how to grow the operation to improve our bottom line?**



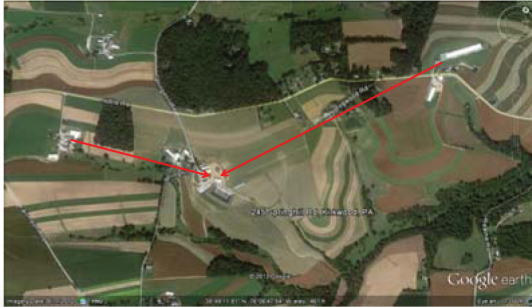
Family & Farm Background

- Digester?
 - Kreider Family experience
 - Economics
 - Diversification
 - How do we get there? Center for Dairy Excellence
- **Transformation Team**
 - Cliff & Andrea
 - Facilitator
 - Accountant
 - Lender
 - Other farm service providers
 - Extended family

Analyzing the Digester Opportunity

- Small farm - can it be feasible?
- Expand the base by incorporating other farms
 - Family & a history of working together
- Food waste
 - Opportunity
- Many logistical challenges
 - ~3600 LF to Cleason's / ~1500 LF to Elmer's
 - Dairy / Layer / Swine manure mixing

Analyzing the Digester Opportunity



Learnings...just to name a few!

- Permitting – time & cost
- Getting to contract
 - Attorney involvement
 - Time & cost
- Time commitment for Cliff during construction
- Challenges of running projections
 - Utility pay prices have not stayed the same
- Things that have “not been done before but should work!”
 - 3 species
 - Moving manure from and to the hog farm
 - Using our bedded pack
 - Calcium chips in layer manure
 - Splitting the existing heifer barn pit in 3 chambers

Jeff Ainslie

Transformation Team Facilitator
Permitting & Engineering



TT Process & Highlights

- **2** The most important people on the team – Cliff & Andrea
- **1** Facilitator to organize meetings, take notes & facilitate discussion
- **3** Wise minds that were critical to the process
 - Earl Sensenig
 - Herb Kreider
 - Roger Rohrer
- **6** The number of formal meetings we held
- **Countless** The number of informal meetings, phone conversations and early AM texts/emails, etc that took place
- **859** The number of days from concept to groundbreaking
- **19** The number of approvals needed to complete this project
- **9** The number of gov't agencies or entities involved in those approvals
- **30** The number of days since the generator sent power out the line

Robert Hostetter, CPA

Transformation Team Member
Financial Analysis



Sensenig Digester – Considerations for the Analysis

- What are the variables that impact the analysis?
- How are we arriving at the values we assumed?
 - Do they make sense?
 - Are there example farms we can use data from?
- What are the implications of any grants received?
 - Taxes, etc?
 - How do we plan around the uncertainty of funding?
- What does the sensitivity analysis tell us?
 - What variables have the biggest impact?
 - What does the operator have control over?
 - What do they not have control over?

Digester Analysis Example

Manure Digester Project - Example Cash Flow Analysis - 2012 Transformation Team Summary Financial Analysis			
Each farm's situation is different: consult your accountant/tax advisor for how this example may apply to you.			
Project Cost/Grants Received/Bank Financing:			
Total Project Cost:			1,500,000.00
Grants to Offset Cost:			
Grant # 1	(345,000.00)		
Sec. 1603 Federal Grant - 30%	(450,000.00)		
Grant # 2	(275,000.00)		
Grant # 3	(215,000.00)		
Total Grant Offsets:		(1,285,000.00)	
Difference = Bank Financing Needed for Project Cost			215,000.00
Due to Timing of Grant Receipts and Length of Project being 1 Year			
Additional Bank Bridge Financing Needed: 4.5% int for:	700,000.00		31,500.00
Total Bank Financing Needed:			246,500.00
Monthly Payment Calculation for Total Bank Financing:			
Term - Years:	11		
# of Monthly Pmts	132		
Annual Interest Rate	4.5%		
Monthly Payment:	\$2,371.02		

Annual Cash Inflows/Cost Savings from Digester:			
Electricity Generated 180 kw Capability	1,061,915 # of kwh	\$ 0.0670 cents / kwh	103,006.14
Electricity Savings	232,700 # of kwh	\$ 0.0670 cents / kwh	22,571.90
Renewable Energy Credits -REC Credits	- # of credits	\$ - / credit	3,000.00
Carbon Credits (\$ per metric ton)	2,000 metric tons	\$ 4.00 \$ / metric ton	8,000.00
Tipping Fees (\$ / ton) per week	20 tons	\$ 20.00 \$ / ton	20,800.00
Bedding Savings - Farm Cost Savings			8,000.00
Bedding Sales: \$/yard	600 yards	\$ 6.00 \$/yard	3,600.00
Heat Savings for Residence			2,000.00
Heat Value - Corn drying, etc. - Propane Cost			2,700.00
Tax Savings: Zero b/c income generated will offset depreciation benefit			-
Total Annual Cash Inflows/Cost Savings			173,678.04
Annual Cash Outflows from Digester:			
Manure Purchase Cost	400 # of tons	\$ 6.00 \$ / ton	2,400.00
Genset Operating Cost/Maintenance	1,061,915 # of kwh	\$ 0.03 \$ / kwh	31,857.57
Daily Labor Needs - includes labor and payroll tax cost needed for operation			35,000.00
Bank Loan Payments			38,452.19
Insurance Expense - Estimate			5,000.00
Total Annual Cash Outflow			(102,709.76)
Net Excess Annual Overall Cash Flow			70,968.28
Additional First Year (Costs/Savings Only):			
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and income tax			(36,988)
Net Cash Flow for First Year after First Year Costs Subtracted			33,979.97

Example – Reduced Funding

Manure Digester Project - Example Cash Flow Analysis - 2012 Transformation Team Summary Financial Analysis			
Each farm's situation is different: consult your accountant/tax advisor for how this example may apply to you.			
Project Cost/Grants Received/Bank Financing:			
Total Project Cost:			1,500,000.00
Grants to Offset Cost:			
Grant # 1	(345,000.00)		
Sec. 1603 Federal Grant - 30%	(450,000.00)		
Grant # 2	(275,000.00)		
Grant # 3	-		
Total Grant Offsets:		(1,070,000.00)	
Difference = Bank Financing Needed for Project Cost			430,000.00
Due to Timing of Grant Receipts and Length of Project being 1 Year			
Additional Bank Bridge Financing Needed: 4.5% int for:	880,000.00		39,600.00
Total Bank Financing Needed:			469,600.00
Monthly Payment Calculation for Total Bank Financing:			
Term - Years:	11		
# of Monthly Pmts	132		
Annual Interest Rate	4.5%		
Monthly Payment:	\$4,516.95		

Annual Cash Inflows/Cost Savings from Digester:			
Electricity Generated 180 kw Capability	1,061,915 # of kwh	\$ 0.0670 cents / kwh	103,006.14
Electricity Savings	232,700 # of kwh	\$ 0.0670 cents / kwh	22,571.90
Renewable Energy Credits -REC Credits	- # of credits	\$ - / credit	3,000.00
Carbon Credits (\$ per metric ton)	2,000 metric tons	\$ 4.00 \$ / metric ton	8,000.00
Tipping Fees (\$ / ton) per week	20 tons	\$ 20.00 \$ / ton	20,800.00
Bedding Savings - Farm Cost Savings			8,000.00
Bedding Sales: \$/yard	600 yards	\$ 6.00 \$/yard	3,600.00
Heat Savings for Residence			2,000.00
Heat Value - Corn drying, etc. - Propane Cost			2,700.00
Tax Savings: Zero b/c income generated will offset depreciation benefit			-
Total Annual Cash Inflows/Cost Savings			173,678.04
Annual Cash Outflows from Digester:			
Manure Purchase Cost	400 # of tons	\$ 6.00 \$ / ton	2,400.00
Genset Operating Cost/Maintenance	1,061,915 # of kwh	\$ 0.03 \$ / kwh	31,857.57
Daily Labor Needs - includes labor and payroll tax cost needed for operation			35,000.00
Bank Loan Payments			54,203.45
Insurance Expense - Estimate			5,000.00
Total Annual Cash Outflows			(128,461.02)
Net Excess Annual Overall Cash Flow			45,217.02
Additional First Year (Costs/Savings Only):			
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and income tax			(4,920)
Net Cash Flow for First Year after First Year Costs Subtracted			40,296.66

Example – \$.065/kwh vs. \$.08/kwh

Manure Digester Project - Example Cash Flow Analysis - 2012 Transformation Team Summary Financial Analysis			
Each farm's situation is different: consult your accountant/tax advisor for how this example may apply to you.			
Project Cost/Grants Received/Bank Financing:			
Total Project Cost:			1,500,000.00
Grants to Offset Cost:			
Grant # 1	(345,000.00)		
Sec. 1603 Federal Grant - 30%	(450,000.00)		
Grant # 2	(275,000.00)		
Grant # 3	(215,000.00)		
Total Grant Offsets:		(1,285,000.00)	
Difference = Bank Financing Needed for Project Cost			215,000.00
Due to Timing of Grant Receipts and Length of Project being 1 Year			
Additional Bank Bridge Financing Needed: 4.5% interest to carry 700,000			31,500.00
Total Bank Financing Needed:			246,500.00
Monthly Payment Calculation for Total Bank Financing:			
Term - Years:	11		
# of Monthly Pmts	132		
Annual Interest Rate	4.5%		
Monthly Payment:	\$2,371.02		

Annual Cash Inflows/Cost Savings from Digester:				
Electricity Generated 180 kw Capability	1,061,919	# of kwh	\$ 0.0650	cents / kwh
Electricity Savings	232,700	# of kwh	\$ 0.0650	cents / kwh
Renewable Energy Credits -REC Credits	-	# of credits	\$ -	\$ / credit
Carbon Credits (\$ per metric ton)	2,000	metric tons	\$ 4.00	\$ / metric ton
Tipping Fees (\$ / ton) per week	20	tons	\$ 20.00	\$ / ton
Bedding Savings - Farm Cost Savings	-	-	-	-
Bedding Sales: \$/yard	600	yards	\$ 6.00	\$/yard
Heat Savings for Residence	-	-	-	-
Heat Value - Com drying, etc. - Propane Cost	-	-	-	-
Tax Savings: Zero b/c income generated will offset depreciation benefit	-	-	-	-
Total Annual Cash Inflows/Cost Savings				132,250.24
Annual Cash Outflows from Digester:				
Manure Purchase Cost	400	# of tons	\$ 6.00	\$ / ton
Genset Operating Cost/Maintenance	1,061,919	# of kwh	\$ 0.03	\$ / kwh
Daily Labor Needs - includes labor and payroll tax cost needed for operation	-	-	-	-
Bank Loan Payments	-	-	-	-
Insurance Expense - Estimate	-	-	-	-
Total Annual Cash Outflows				(102,709.76)
Net Excess Annual Overall Cash Flow				29,540.47
Additional First Year (Costs/Savings) Only:				
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and Income Tax				(41,419)
Net Cash Flow for First Year after First Year Costs Subtracted				(11,878.91)

Annual Cash Inflows/Cost Savings from Digester:				
Electricity Generated 180 kw Capability	1,061,919	# of kwh	\$ 0.0800	cents / kwh
Electricity Savings	232,700	# of kwh	\$ 0.0800	cents / kwh
Renewable Energy Credits -REC Credits	-	# of credits	\$ -	\$ / credit
Carbon Credits (\$ per metric ton)	2,000	metric tons	\$ 4.00	\$ / metric ton
Tipping Fees (\$ / ton) per week	20	tons	\$ 20.00	\$ / ton
Bedding Savings - Farm Cost Savings	-	-	-	-
Bedding Sales: \$/yard	600	yards	\$ 6.00	\$/yard
Heat Savings for Residence	-	-	-	-
Heat Value - Com drying, etc. - Propane Cost	-	-	-	-
Tax Savings: Zero b/c income generated will offset depreciation benefit	-	-	-	-
Total Annual Cash Inflows/Cost Savings				151,669.52
Annual Cash Outflows from Digester:				
Manure Purchase Cost	400	# of tons	\$ 6.00	\$ / ton
Genset Operating Cost/Maintenance	1,061,919	# of kwh	\$ 0.03	\$ / kwh
Daily Labor Needs - includes labor and payroll tax cost needed for operation	-	-	-	-
Bank Loan Payments	-	-	-	-
Insurance Expense - Estimate	-	-	-	-
Total Annual Cash Outflows				(102,709.76)
Net Excess Annual Overall Cash Flow				48,959.76
Additional First Year (Costs/Savings) Only:				
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and Income Tax				(44,332)
Net Cash Flow for First Year after First Year Costs Subtracted				4,627.49

Example – Food Waste Volume

Manure Digester Project - Example Cash Flow Analysis - 2012				
Transformation Team Summary Financial Analysis				
Each farm's situation is different: consult your accountant/tax advisor for how this example may apply to you.				
Project Cost/Grants Received/Bank Financing:				
Total Project Cost:				1,600,000.00
Grants to Offset Cost:				
Grant # 1		(345,000.00)		
Sec. 1603 Federal Grant - 30%		(460,000.00)		
Grant # 2		(275,000.00)		
Grant # 3		(215,000.00)		
Total Grant Offsets:			(1,285,000.00)	
Difference = Bank Financing Needed for Project Cost				215,000.00
Due to Timing of Grant Receipts and Length of Project being 1 Year:				
Additional Bank Bridge Financing Needed: 4.5% interest to carry 700,000				31,500.00
Total Bank Financing Needed:				246,500.00
Monthly Payment Calculation for Total Bank Financing:				
Term - Years	11			
# of Monthly Payments	132			
Annual Interest Rate	4.5%			
Monthly Payment:	\$2,311.02			

Annual Cash Inflows/Cost Savings from Digester:				
Electricity Generated 180 kw Capability	1,061,919	# of kwh	\$ 0.0970	cents / kwh
Electricity Savings	232,700	# of kwh	\$ 0.0970	cents / kwh
Renewable Energy Credits -REC Credits	-	# of credits	\$ -	\$ / credit
Carbon Credits (\$ per metric ton)	2,000	metric tons	\$ 4.00	\$ / metric ton
Tipping Fees (\$ / ton) per week	40	tons	\$ 20.00	\$ / ton
Bedding Savings - Farm Cost Savings	-	-	-	-
Bedding Sales: \$/yard	600	yards	\$ 6.00	\$/yard
Heat Savings for Residence	-	-	-	-
Heat Value - Com drying, etc. - Propane Cost	-	-	-	-
Tax Savings: Zero b/c income generated will offset depreciation benefit	-	-	-	-
Total Annual Cash Inflows/Cost Savings				194,478.04
Annual Cash Outflows from Digester:				
Manure Purchase Cost	400	# of tons	\$ 6.00	\$ / ton
Genset Operating Cost/Maintenance	1,061,919	# of kwh	\$ 0.03	\$ / kwh
Daily Labor Needs - includes labor and payroll tax cost needed for operation	-	-	-	-
Bank Loan Payments	-	-	-	-
Insurance Expense - Estimate	-	-	-	-
Total Annual Cash Outflows				(102,709.76)
Net Excess Annual Overall Cash Flow				91,768.28
Additional First Year (Costs/Savings) Only:				
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and Income Tax				(50,754)
Net Cash Flow for First Year after First Year Costs Subtracted				41,014.73

Annual Cash Inflows/Cost Savings from Digester:				
Electricity Generated 180 kw Capability	1,061,919	# of kwh	\$ 0.0670	cents / kwh
Electricity Savings	232,700	# of kwh	\$ 0.0670	cents / kwh
Renewable Energy Credits -REC Credits	-	# of credits	\$ -	\$ / credit
Carbon Credits (\$ per metric ton)	2,000	metric tons	\$ 4.00	\$ / metric ton
Tipping Fees (\$ / ton) per week	60	tons	\$ 20.00	\$ / ton
Bedding Savings - Farm Cost Savings	-	-	-	-
Bedding Sales: \$/yard	600	yards	\$ 6.00	\$/yard
Heat Savings for Residence	-	-	-	-
Heat Value - Com drying, etc. - Propane Cost	-	-	-	-
Tax Savings: Zero b/c income generated will offset depreciation benefit	-	-	-	-
Total Annual Cash Inflows/Cost Savings				215,278.04
Annual Cash Outflows from Digester:				
Manure Purchase Cost	400	# of tons	\$ 6.00	\$ / ton
Genset Operating Cost/Maintenance	1,061,919	# of kwh	\$ 0.03	\$ / kwh
Daily Labor Needs - includes labor and payroll tax cost needed for operation	-	-	-	-
Bank Loan Payments	-	-	-	-
Insurance Expense - Estimate	-	-	-	-
Total Annual Cash Outflows				(102,709.76)
Net Excess Annual Overall Cash Flow				112,568.28
Additional First Year (Costs/Savings) Only:				
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and Income Tax				(53,874)
Net Cash Flow for First Year after First Year Costs Subtracted				58,694.73

Manure Digester Project - Example Cash Flow Analysis - 2012				
Transformation Team Summary Financial Analysis				
Each farm's situation is different: consult your accountant/tax advisor for how this example may apply to you.				
Project Cost/Grants Received/Bank Financing:				
Total Project Cost:				1,650,000.00
Grants to Offset Cost:				
Grant # 1		(345,000.00)		
Sec. 1603 Federal Grant - 30%		(460,000.00)		
Grant # 2		(275,000.00)		
Grant # 3		(215,000.00)		
Total Grant Offsets:			(1,330,000.00)	
Difference = Bank Financing Needed for Project Cost				320,000.00
Due to Timing of Grant Receipts and Length of Project being 1 Year:				
Additional Bank Bridge Financing Needed: 4.5% int for:				815,000.00
Total Bank Financing Needed:				356,675.00
Monthly Payment Calculation for Total Bank Financing:				
Term - Years	11			
# of Monthly Payments	132			
Annual Interest Rate	4.5%			
Monthly Payment:	\$3,430.76			

Annual Cash Inflows/Cost Savings from Digester:				
Electricity Generated 150 kw Capability	1,061,919	# of kwh	\$ 0.0650	cents / kwh
Electricity Savings	232,700	# of kwh	\$ 0.0650	cents / kwh
Renewable Energy Credits - REC Credits	-	# of credits	\$ -	\$ / credit
Carbon Credits (\$ per metric ton)	2,000	metric tons	\$ 4.00	\$ / metric ton
Tipping Fees (\$ / ton) per week	40	tons	\$ 20.00	\$ / ton
Bedding Savings - Farm Cost Savings				
Bedding Sales: \$/yard	600	yards	\$ 6.00	\$/yard
Heat Savings for Residence				
Heat Value - Corn drying, etc. - Propane Cost				
Tax Savings: Zero b/c income generated will offset depreciation benefit				
Total Annual Cash Inflows/Cost Savings				153,050.24
Annual Cash Outflows from Digester:				
Manure Purchase Cost	400	# of tons	\$ 6.00	\$ / ton
Genset Operating Cost/Maintenance	1,061,919	# of kwh	\$ 0.03	\$ / kwh
Daily Labor Needs - includes labor and payroll tax cost needed for operation				15,000.00
Bank Loan Payments				41,169.11
Insurance Expense - Estimate				5,000.00
Total Annual Cash Outflows				(65,425.66)
Net Excess Annual Overall Cash Flow				57,623.55
Additional First Year (Costs/Savings Only):				
Tax Estimate: Consider differences in grant taxability and Federal - PA depreciation differences and Income Tax				(34,242)
Net Cash Flow for First Year after First Year Costs Subtracted				23,381.33

Summary Conclusions

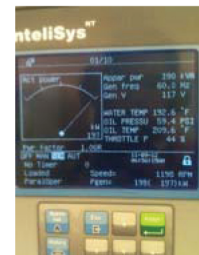
- Assemble a team to help you do your homework
- Identify all of the variables – you can't afford to miss any of them!
- Look to others with real experience to help you validate your assumptions
- Run a sensitivity analysis to determine the big impact factors in your analysis
- Engage your lender in the process

C. Lamar King

Transformation Team Member
Agricultural Lending Officer



The Sensenigs – What's Next?



Resources and Contact Information...continued

Video

2014 U.S. Dairy Innovation Sustainability Award Winner Video

<http://www.usdairy.com/sustainability/us-dairy-sustainability-awards/current-winners>

Case Study

Case study, 2014 U.S. Dairy Innovation Sustainability Award

http://www.usdairy.com/~media/usd/public/sensenig_casestudy_sust4012_r2.pdf

Article

Lancaster Farming, November 2012

<http://www.lancasterfarming.com/-Co-op-Digester-Has-Dairy-Couple-Hopeful-for-the-Future-#.VA3q0xZMGSo>

Contacts:

Please call the Center for Dairy Excellence to make contact with any of these individuals or organizations to learn more about their role in successfully completing this project.

Jeff Ainslie, Red Barn Consulting

Robert Hostetter, CPA, Hostetter and Hostetter

C. Lamar King, Fulton Bank

RCM International



CENTER FOR
DairyEXCELLENCE

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