INVENTORY OF ENVIRONMENTAL TECHNOLOGIES FOR THE HOG INDUSTRY

APPENDIX A: Inventory of Technologies

SUBMITTED BY:

CETAC-WEST



March 31, 1999

Inventory Questionnaire

Canada

i. Technology/Product Name: EnviStim

Tech ID: C-03

ii. Party responsible for promotion/distribution/developer of product:

Company	/:	Cortex Im	nporting L	td.	
Contact Name: Mr. H			Holvay		
Address:		32 Cassels Avenue			
		Toronto		ON	M4E 1Y1
Phone:	416-690	-6978	Email:	hito@:	sympatico.ca
Fax:	416-690-	6737	Website:		

iii. Technology Description:

The natural system that converts manure into compost inside the stable. EnviStim is a biotechnologically prepared enzyme additive. When applied to a 16" bed of sawdust or chopped straw, it digests the feces and urine converting them into harmless atmospheric gases, protein and energy.

iv. Product Performance or Benefits:

Our practical experience in Europe has shown that EnviStim reduces the volume of manure by 80 to 90%. This reduction results in considerable savings on manure storage and handling. At the same time, ammonia emission is reduced by up to 70%, resulting in a healthier environment for the animal and the farmer.

Additional information provided	Claims Substantiated	Signed Property Agreement
achnology/product requirements in terms of		

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 25 finishing pigs and up

(b) Space of farm: it works directly in pig pens

(c) Utilities (energy input, materials, etc.): no extra input in energy, it lowers the heating cost

(d) Staff/training: no special training

(e) 0ther (please specify): The EnviStim sawdust bed functions for a minimum of three finishing periods (about 1 year).

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:	not applied vet in Canada	

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

it is the housing that will determine whether the animals and bedding material perform well. If the pen design is not appropriate, the mixing up of the material might be difficult, leading to poor performance of the bedding. EnviStim can be used in a variety of different housing systems.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

search E	ingineering	Testing	Demonstration
ff N	larketing	Financial (e.g.	need for capital)
	search E ff N	search Engineering ff Marketing	search Engineering Testing ff Marketing Financial (e.g.

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: company website farm publications/journals farm/trade shows
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products:

Similar to other compost products for gardening applications. When the conversion is very effective, nitrogen levels will be low, the N-P-K values favourable, and there will be no smell.

- xv. Market research undertaken concerning by-products: none.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

All of our existing EnviStim barns are in Europe.

Company	/:	PDK Proj	ects, Inc.			
Contact	Name:	Dr. Diane	F. Malley	/		
Address: 30		365 Wildv	365 Wildwood Park			
		Winnipeg		MB	R3T 0E7	
Phone:	204-475	-2899	Email:	pdk@r	nb.sympatico.ca	a
Fax:	204-475	-6090	Website:			

iii. Technology Description:

Near-infrared spectroscopy (NIRS) has the capability of determining quantities of (usually) organic constituents in liquids, slurries, and solids. The potential role of NIRS in the management of hog manure is in rapid, low-cost, accurate analysis of the nutrient and salt content of manure. Two scenarios for the use of NIRS by manure mangers are:

a) samples of manure taken periodically during land application to monitor nutrient loading for compliance monitoring and to influence the composition and amount of subsequent applications of conventional fertilizer.
 B) continuously monitoring the composition by fibre-optic probes in the manure stream and an on-site NIR instrument, allowing for augmenting of the manure with additional nutrients as the manure may change during application, or may differ from one lagoon to another.

iv. Product Performance or Benefits:

Successful calibrations were developed for ammonium-N, total dissolved N, suspended N, soluble reactive P, total dissolved P, suspended P, suspended C, Na, and Mg. Also predicted, but less precisely, were conductivity, pH, K, and Ca. Results to be reported March 1999.

Additional information provided

Claims Substantiated

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): n/a
 - (b) Space of farm: one cubic metre
 - (c) Utilities (energy input, materials, etc.): 120 volts power source, generator, or battery
 - (d) Staff/training: short training period would be required for operating staff, e.g. several days
 - (e) 0ther (please specify): capital cost outlay to have equipment on site; otherwise samples can be analyzed in the laboratory

vi. Capital and operating costs:

Capital Costs (per sow equiv.)	Annual Operating Costs
	(per sow equiv.)
n/a	n/a
	Capital Costs (per sow equiv.) n/a

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

The main factors are regulatory or economic incentives that make it important to know the composition of manure. Manure has to be viewed as a valuable resource, not a waste material to be disposed of. viii. Stage of development: Development (technical feasibility established)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capita

Financial (e.g. need for capital) Marketing

Details: When marketing opportunities arise, securing capital for the establishment of an NIRS laboratory will be required.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: customized presentations media releases/commercial advertising company website

targeted mailings/brochures

- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: none
- xv. Market research undertaken concerning by-products: Informal discussions with manure applicators and consultants in the hog industry.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: verification of results by conventional methods

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

1. The application of hog manure, by virtue of its nutrients, has to be seen to replace part or all of conventional fertilizers.

2. Hog producers, farmers, and regulators need to accept NIRS as a legitimate analytical alternative to conventional analyses done by existing laboratories.

i. Technology/Product Name: Two-stage anaerobic digestion of organic wastes

ii. Party responsible for promotion/distribution/developer of product:

Company		Andrey Le	evin, Inde	pender	t Inventor/Cons	sulter
Contact N	lame:	A. Levin				
Address:		#118 - 8460 Lansdowne Rd.				
		Richmond	ł	BC	V6X 3G8	
Phone:	604-214-	8164	Email:	anlevir	n@sprint.ca	
Fax:	604-214-	8164	Website:			

iii. Technology Description:

Proposed method of anaerobic digestion of high-solid mixes of organic wastes comprises of two consequent stages of digestion which are carried out in same temperature mode: primary digestion in conventional high-rate anaerobic digester with completely mixed media, followed by digestion of partly digested and sufficiently seeded effluent from primary digester in longitudinally-shaped consequent-flow digester. Anaerobic digestion provides recycling of raw manure / agricultural waste in organic fertilizer, with full energy recovery, odour and pathogenic bacteria control.

iv. Product Performance or Benefits:

Presented in the "Description of method" mathematical model of the anaerobic digestion provides that invented modification of anaerobic digester three times more efficient than conventional one-stage digester and one and a half times more efficient than modern state-of-the-art two-stage digesters.

Additional information provided Claims Substantiated Si

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.):
 - (b) Space of farm:
 - (c) Utilities (energy input, materials, etc.):
 - (d) Staff/training:
 - (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:		

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Proposed method of anaerobic digestion could easily be realized by inexpensive modification of existing anaerobic digesters. So this method of anaerobic digestion generally has the same advantages and limitations of established digesters to treat livestock manure.

viii. Stage of development: Concept of improvement for well established technology (patent filed)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology? Engineering

Research Staff

Testing Demonstration

Marketing Financial (e.g. need for capital)

Details: modifications to existing digesters should be designed, carried out (does not require facility stop-off), and tested.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: demonstrations joint ventures with local companies
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant biogas heat / electricity
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

In cold climate, value of on-site gaseous fuel for heating purposes is invaluable.

Company:	C2C Min	ing Corporation			
Contact Name	: Vern Hog	19			
Address:	503, 604	- 1st St. SW			
	Calgary	AB	T2P 3B1		
Phone: 403 Fax: 403	3-264-5352 3-237-9260	Email: c2c@ezı Website:	post.com		
iii. Technology Desc Molecular er	ription: ncapsulation by	zeolites			
iv. Product Perform	nance or Benefits				
Reduces od	ors as per appli	cation rates. Works	s under aerobic and	d anaerobic conditions.	
Additional inf	formation provide	ed Claims	Substantiated	Signed Property Agreement	
v. Technology/prod (a) Minimum f	uct requirements Farm size (in sow	s in terms of: equiv.): any			
(b) Space of f	arm: storage fo	or product 6' x 4'			
(c) Utilities (e (d) Staff/tra	nergy input, mat ning: user frien	erials, etc.): dly - minimal			
(e) Other (ple	ase specify):	5			
vi. Capital and opera	ating costs:				
Size of Ope	ration	Capital Costs	Annual Opera	ting Costs	
(sow equiv	·) (t	ber sow equiv.)	(per sow)	equiv)	
100 Sow	., ~	\$225 per tonne	as requ	ired	
300 Sow					
600 Sow					
1200 Sov	N				
Cost Descrip	tion:				
vii. Special Circums Can be field livestock op	stances that will farmed after us erations.	affect the economic e; benefits soils an	or technical feasibili d reduces nitrate d	ty of the technology/product: evelopment. Useful in permitting new in	ntensive
viii. Stage of devel	opment: Comi	mercial launch has	been carried out		
ix. If your technolo technolo	gy is at the pre-o	commercial phase, wl	nat further activities	s are required to make this a commercially	v viable
	Research Staff	Engineering Marketing	Testing Financial (e.c	Demonstration J. need for capital)	
Details: R&D	ongoing				

x. Do you have a business plan for commercializing your technology?

March 31, 1999

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers direct marketing/sales
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products: consumer tests
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Establishment of cost benefits against regulations.

i. Technology/Product Name: Manure Away

ii. Party responsible for promotion/distribution/developer of product:

Company:	Cyrus Consulting			
Contact Name:	Dr. John Olubobok	un		
Address:	180 St. Lawrence (Cres.		
	Saskatoon	SK	S7K 3W7	
Phone: 306-2 Fax: 306-2	244-9787 Email: 244-1036 Website:			
iii. Technology Descrip Microbial pit or	tion: lagoon additive. Conve	erts odo	rous end products to nor	n-odorous or less odorous products.
iv. Product Performat Reduces level	nce or Benefits: of nitrogen, phosphate,	, and vo	latile fatty acids (odors).	
Additional infor	mation provided	Clain	ns Substantiated	Signed Property Agreement
v. Technology/produc (a) Minimum far (b) Space of far (c) Utilities (ene (d) Staff/trainin (e) Other (pleas	t requirements in terms of m size (in sow equiv.): m: storage facility (10' : rgy input, materials, etc.) ng: dilution & mixing rat e specify):	of: none x 10')): mixe ios. Fre	er, sprayer equency of spraying.	
vi. Capital and operati	ng costs:			
Size of Opera	tion Capital Co (per sow e	osts quiv.)	Annual Operating	Costs
(sow equiv.) 100 Sow	u de la	. ,	(per sow equi	v.)
300 Sow				

600 Sow

1200 Sow

Cost Description: not currently available.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Harsh winters might be a concern

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research Engineering Testing Demonstration Staff Marketing Financial (e.g. need for capital)

Details:

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

Inventory Questionnaire Responses

Page 9 of 258

- xii. Current/Planned Marketing Strategies: direct marketing/sales licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: manure with reduced organic matter & ash content
- xiv. Value / Selling Price of by-products: less than for untreated manure
- xv. Market research undertaken concerning by-products: Spoken to 3 major players in the hog industry. All have the same problems & all want a solution.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: testing protocol field tests

Convincing local trials and financing

Company:	Sanither	m Engineering Ltd.			
Contact Nam	Ne: R. Smith				
Address:	431 MTN	IHWY			
	North Va	ncouver BC V	2J 2L1		
Phone: 60 Fax: 60	4-986-9168 4-986-5377	Email: saneng@ Website:	direct.ca		
iii. Technology Des The techno	cription: logy stabilizes a	nd disinfects hog ma	nure for use as	a biosolid.	
iv. Product Perfor	mance or Benefits	S:			
Additional ir	formation provid	ed Claims S	Substantiated	Signed Property Agreeme	nt
v. Technology/pro (a) Minimum (b) Space of (c) Utilities ((d) Staff/tra (e) Other (pl	duct requirement farm size (in sow farm: n/a energy input, mat aining: n/a ease specify):	s in terms of: r equiv.): n/a erials, etc.): n/a			
vi. Capital and oper	rating costs:				
Size of Op	eration	Capital Costs	Annual Oper	rating Costs	
(sow equi 100 Sov	v.) v	Jer sow equiv.)	(per sov	v equiv.)	
300 Sov	v				
600 Sov	v				
1200 Sc	w				
Cost Descri vii. Special Circum	ption: ostances that will	affect the economic o	r technical feasib	ility of the technology/product:	
avab to anet2 iiiv	lonmont [,] Com	moreial launch has h	oon carried out		
ix. If your technol	ogy is at the pre-	commercial phase, what	at further activit	ies are required to make this a co	mmercially viable
technology?	Research Staff	Engineering Marketing	Testing Financial (e	Demonstration	
Details:					
x. Do you have a b	usiness plan for c	ommercializing your to	echnology?		
xi. Have you perfo	ormed any market	t research to determir	e the feasibility o	of the technology for livestock op	erations?
xii. Current/Planr	ed Marketing Str	ategies:			
March 31, 1999		Inventory C	Questionnaire Res	ponses	Page 11 of 258

- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: $_{\rm n/a}$

Too expensive for livestock operations

i. Technology/Product Name: Ecofluid USBF

ii. Party responsible for promotion/distribution/developer of product:

	5 1	•			•		
	Company:	Pures	tream / Ecof	uid LLC	:		
	Contact Name	: John S	Sainas				
	Address:	#2 10	20 W Pende	r St			
		Vanco	ouver	BC	V6E 2N7		
	Phone: 604 Fax: 604	-662-4544 -662-4564	Email: Website:	jsainas	@ecofluid.com		
iii. Te	echnology Descr	ription:					
	Biological ae <40 mg/l TSS	robic treatm S, & odour fr	ent of hog m ee.	anure e	ffluent. Final produ	ct water quality <30 mg/l BC)D, <50 mg/l NH3,
iv. P	roduct Perform Reduces BO from effluent	ance or Bene D/TSS/NH3 fraction.	fits: by 95% due	to aero	bic process sludge	is stabilized and odour free.	Eliminates odour
	Additional info	ormation pro	vided	Clair	ns Substantiated	Signed Property Agreer	nent
v. Te	chnology/produ	uct requireme	ents in terms	of:			
	(a) Minimum fa	arm size (in s	ow equiv.):	100 so	w equivalent		
	(b) Space of fa	arm: 5m by	5m				
	(c) Utilities (er	nergy input, r	naterials, etc.): elec	ctricity		
	(d) Staff/traiı	ning: 4 hours	s / week				
	(e) Other (plea	ase specify):					
vi. Ca	apital and opera	ting costs:					
	Size of Oper	ration	Capital C (per sow e	osts quiv.)	Annual Oper	ating Costs	
	(sow equiv. 100 Sow)			(per sow	<i>ı</i> equiv.)	
	300 Sow						
	600 Sow						

1200 Sow

Cost Description:

- vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Existing tanks can be quickly modified saving a lot of capital.
- viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.	g. need for capital)

DetailS: Require local installation and financing to transfer application know how to Canada.

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales media releases/commercial advertising
- xiii. Marketable By-Products Produced: recycleable water
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Demonstration scale operation. Retrofit into existing tanks dramatically reduces cost.

Company:		M.J. Silver & Associates (for Orgenergy)				
Contact Name:		M.J. Silver				
Address:		Box 424 Station L				
		Winnipeg		MB	R3H 0Z6	
Phone:	204-489-	4578	Email:	mjsilver	@sprint.ca	
Fax:	204-489-	7478	Website:			

iii. Technology Description:

The "Hog-Mop" is an integrated, energy efficient, environmentally responsible, fully automatic hog manure processing machine. It accepts fresh raw hog manure, processes it internally, and returns solid compost, distilled water, and environmentally benign oxidized flue gases.

iv. Product Performance or Benefits:

Implementation of this technology reduces barn odours by virtue of regularly removing and processing waste as it accumulates in the barn gutters. The machine produces clean water that can be reused internally for washing and maintaining a cleaner (and healthier) below grating environment. Its implementation may also reduce the volume of intake ventilation air required to maintain a breathable atmosphere within the barn envelope, since a lower volume of waste decomposition products will be generated.

Additional information provided	Claims Substantiated	Signed Property Agreement
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v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 500 sow farrow - finish

(b) Space of farm: 14 metres by 6 metres

(c) Utilities (energy input, materials, etc.): 12 kW-hr per cubic metre of fresh manure

(d) Staff/training: Provided at start-up. Machine is fully automatic.

(e) Other (please specify): Supplies for process and self cleansing

vi. Capital and operating costs:

Capital Costs	Annual Operating Costs		
	(per sow equiv.)		
call for quote	call for quote		
	Capital Costs (per sow equiv.) call for quote		

Cost Description: 500 sow: \$680,000 total capital investment; \$24,000 annually

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

The market price of hogs and profitability of operation.

The availability of greenhouse/organic farming/nursery operation willing to accept/purchase composted organic solids as a soil conditioner.

Willingness of operation to undertake and implement techniques that provides savings to cost-justify the capital investment.

The process is exothermic and able to generate sufficient heat to operate in extremes of temperature. Careful implementation design is necessary to satisfy site requirements.

vili. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capital)

Details: Financial: Selecting strategic partners, licensing a local manufacturer, and capitalizing the venture.

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: demonstrations licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: clean water compost
- xiv. Value / Selling Price of by-products:

Site specific, but installation can be cost justified upon cost savings of 1 cent per litre for water if reused, and \$30 per tonne for organic compost alone.

xv. Market research undertaken concerning by-products:

Subjective discussions for uses of clean water, and soil fillers/conditioners. Economic analyses to cost justify the operation of the equipment over its economic life span and the necessary conditions pertaining thereto. The regulatory environment for operating, and licensing such equipment, combined with the relaxation in the manure storage capacity at the site.

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

field tests testing protocol economic modelling

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

The equipment will need to demonstrate reliable performance over an entire year of operation. It is essential that it perform through the entire spectrum of climatic conditions. The adoption of the technology will also need to be driven in part by environmental protection legislation.

Company:		Blossom Agritec				
Contact Name:		Kerry Doyle				
Address:		2584 James St.				
		Abbotsfor	d	BC	V2T 3L5	
Phone:	604-852-	1688	Email:	kerrydo	y@uniserve.com	
Fax:	604-852-	1887	Website:			

iii. Technology Description:

The T-R Separator provides excellent solid-liquid separation for both dairy and hog manure. Manure is treated in the following three steps: 1. The biological membrane; 2. Drain and Filter; and 3. Squeezer.

iv. Product Performance or Benefits:

In present installations, the T-R Separator removes up to 40 cubic yards of solids per day in scrape barns and as separated up to 5000 gpm in flush systems. Moisture contents of 70-75% are consistently achieved. In principle however, the daily operation of the separator will vary greatly according to the type, density, and age of the manure.

Additional information provided

Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): n/a

- (b) Space of farm: n/a
- (c) Utilities (energy input, materials, etc.): 10 hp electric
- (d) Staff/training: automatic, minimum training required
- (e) Other (please specify):
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.)		(per sow equiv.)		
100 Sow	\$350	\$1.35		
300 Sow	\$115	\$1.35		
600 Sow	\$58	\$1.35		
1200 Sow	\$29	\$1.35		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Cold weather operation of the separator (-10 C) requires that the unit be operated in a heated environment to prevent freezing of the liquid. The separator can be incorporated into any existing system with very little difficulty and for a typical installation of about \$2500-3500 CDN.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research Eng	gineering	Testing	Demonstration
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Staff Marketing Financial (e.g. need for capital) Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: manure solids effluent / irrigation water
- xiv. Value / Selling Price of by-products: \$20/m3
- xv. Market research undertaken concerning by-products: Cooperating with compost companies.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: very effective

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Increase in pork prices. Reduction of storage requirements, reduction of nutrients and reduction of odour all lend themselves to the location of farms nearer urban centers.

••••	i di ty i copolisible foi	pi oniotion, ui						
	Company:	Stromaze	Inc.					
	Contact Name:	George E	ades					
	Address:	253 Route	e 138					
		Ormstown	n QC	J0S 1K0				
	Phone: 450-82 Fax:	9-2547	Email: geoea Website:	des@hotmail.com				
iii.	Technology Descripti The unit is a the	011: rmal unit whi	ch will dry mate	rial at 10% dry solid	s to any required dry matter.			
İV.	Product Performanc	e or Benefits:						
	I have dried mui volumes of air a	nicipal waste re very small	with minimal or scrubbing wou	dours. I have not trie ld not be a problem.	d scrubbing the air to reduce odour. The products are steam and organic n	ne natter.		
	Additional inform	ation provide	d Clai	ms Substantiated	Signed Property Agreement			
	(a) Minimum farm (b) Space of farm (c) Utilities (energ (d) Staff/training (e) Other (please	i size (in sow (: 10 x 10 x 3 gy input, mate : minimal specify):	equiv.): can re 30 footprint rials, etc.): nat	adily be sized to op ural gas, propane of	eration on site generated methane			
vi.	Capital and operating	costs:						
	Size of Operati	on C	apital Costs er sow equiv.)	Annual Oper	ating Costs			
	(sow equiv.) 100 Sow	ŭ	,	(per sow	equiv.)			
	300 Sow							
	600 Sow							
	1200 Sow							
	Cost Description	:						
vi	ii. Special Circumstan I would like to kr fall well within th	ces that will a now what the lese norms.	ffect the econom industry accep	ic or technical feasibi table cost estimate f	lity of the technology/product: or manure handling is. I believe the tec	hnology		

viii. Stage of development: Testing of prototype

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e	.g. need for capital)
	•	·	•

Details:

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- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products: The end product is equivalent to compost or potting material however the drying process is completed in minutes.
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

The only factor is what is the industry prepared to pay for a dry product. There are no factors to affect it, since it is a thermal process, other than the volume of methane production on site. If that were the heat source this could readily be supplemented with propane or natural gas as the situation warranted.

i. Technology/Product Name: Little River Pond Mill

ii. Party responsible for promotion/distribution/developer of product:

Company:		Sunset Solar Systems Ltd.			
Contact Name:		Lorraine / Doug Cameron			
Address:		Box 1327, 301 HWY #2 N			
		Assiniboia	a	SK	S0H 0B0
Phone:	306-642-	4240	Email:	lrpm@	sk.sympatico.ca
Fax:	306-642-	4420	Website:		

iii. Technology Description:

Aeration by circulation to enable the growth of naturally occurring microorganisms which utilize the organics in the liquid manure for energy; thereby clarifying the liquid and reducing/eliminating odour and sludge. Whole pond is mixed via vortex circulation.

iv. Product Performance or Benefits:

According to an OMAFRA report, odour potential was 230% higher from the control pit. This measurement was obtained using olfactometry. VFA's were reduced to half of the detectable level.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): no minimum or maximum

(b) Space of farm: 14' per machine floating on liquid manure

(c) Utilities (energy input, materials, etc.): wind powered or other model uses a 1/3 Hp motor

(d) Staff/training: virtually none, some mechanical to change bearing & seals bi-annually & check hardware is

(e) Other (please specify): used in outdoor pits and lagoons only

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	\$28.98 -\$53-95	zero wind; \$0.37 electric
300 Sow	\$9.66 -\$17.98	zero wind; \$0.37 electric
600 Sow	\$4.83 -\$8.99	zero wind; \$0.37 electric
1200 Sow	\$4.83-\$8.99	zero wind; \$0.37 electric

Cost Description: Costs are based on one unit per up to approx. 20 000ft2 in surface area. It assumes that on 1 pit is being used for operations from 100-600 sows and 2 pits for 1200 sows. Costs vary depending on what stainless parts are installed on either the electric or windmill models.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

00	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
L . ! .				

Details:

March 31, 1999

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers farm/trade shows targeted mailings/brochures
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: variable, depends on supply and demand
- xv. Market research undertaken concerning by-products: none - future test
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification testing protocol field tests

have successful reports from satisfied customers but require stats

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Further testing which is in the works this year and future years. Main test planned this year was tabled, due to circumstances beyond our control.

Company:	SHAC Environmental Products Inc					
Contact Name:	Gary Lehr	Gary Lehr				
Address:	Box 73					
	Medicine Hat	AB T1A 7E5				
Phone: 403-527- Fax: 403-529-	-0553 Email: -9334 Website:	SHAC@telusplanet.net				
iii. Technology Description By activating and odours and improv	1: balancing biodigestio ved production.	on process in manure, less ga	ses are released. This translates to less			
iv. Product Performance Attached study do	or Benefits: one by Iowa State Un	iversity				
Additional informat	tion provided	Claims Substantiated	Signed Property Agreement			
v. Technology/product re (a) Minimum farm s (b) Space of farm	quirements in terms o size (in sow equiv.):	f: O				
(c) Utilities (energy	/ input, materials, etc.)	: 0				
(d) Staff/training:	minimal					
(e) Other (please sp	pecify):					

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	0	\$2.35 / sow
300 Sow	0	\$2.35 / sow
600 Sow	0	\$2.35 / sow
1200 Sow	0	\$2.35 / sow

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Serious overloading of a system or excessive use of antibiotics or disinfectants.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

iveseai cii	Engineering	resting	Demonstration
Staff	Marketing	Financial (e.g	. need for capital)

Details:

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: none
- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests research

A better understanding of natural biodigestion and function of soil systems. The technology works with natural systems so therefore has broad application possibilities.

Company	:	Envirosaf	e Chemic	als Can	ada
Contact Name: Jim Dave			у		
Address: 3207 We		3207 Wel	ls Avenue	e	
Saskatoo		n	SK	S7K 5W4	
Phone:	306-933-	0505	Email:	enviros	afechem.com
Fax:	306-933-4805		Website:		

iii. Technology Description:

Manure degradation / introduction of biowaste back to the soil. Envirozym Manure degrader is a powdered blend of selectively adapted organisms blended with crude enzymes and emulsifiers specifically designed to liquefy, digest and deodorize agricultural wastes.

iv. Product Performance or Benefits:

Digests cellulosic fibers, proteins, fats, and residual carbohydrates in animal wastes. Retards odour generation by oxidizing malodorous compounds. Maximizes fertilizer value of animal waste material.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.):

(b) Space of farm: - to be determined -

- (c) Utilities (energy input, materials, etc.):
- (d) Staff/training:

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
0		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
) at all a				

Details:

x. Do you have a business plan for commercializing your technology?

March 31, 1999

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers agricultural outlets
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant farm energy
- xiv. Value / Selling Price of by-products: to be determined
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests third party verification

Pilot project - cost.

Company	:	Enviro-Test Laboratories			
Contact Name: Pat Flaten			า		
Address: 124 Veterin			inary Roa	ad	
		Saskatoon		SK	S7N 5E3
Phone:	306-668-	8370	Email:	etl.pat	@sk.sympatico.ca
Fax:	306-668-8383		Website:		

iii. Technology Description:

Our services include lab analysis of the soils and manure for environmental purposes. Also, from the agricultural perspective, our service includes the lab analysis of the manure and manured soils, providing an indication of availability of nutrients for use by crops.

iv. Product Performance or Benefits:

Our service provides government departments, research departments, producers, and consultants with the analysis required to measure effects of manure applications, prevent un-wise applications, and show opportunities for applying manure in the most agronomically and environmentally effective manner.

Additional information provided Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.):

(b) Space of farm:

- (c) Utilities (energy input, materials, etc.):
- (d) Staff/training:

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	n/a	n/a
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Not applicable in the intent of the question. Government regulations can have a significant effect on the use of environmentally based analysis.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

55	Research	Engineering	Testing Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
atalla.			

Details: n/a

March 31, 1999

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: all levels - regulators, producers, consultants

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

Adding value to consultants work and advice, tying together manure and commercial fertilizer as sources of nutrients, crop yields are increased, adds value to research performed by scientists.

- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: numbers of samples received

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Our recent development has been to tie together existing agricultural soil testing results and existing fertilizer recommendations with revised manure and manured soil testing procedures and new computer software which will advise producers and consultants how much manure to apply to fulfill a crop demand. Supplemental fertilizer (where necessary) is also determined.

Company:		ATD Was	te Syster	ns Inc.				
Contact N	ame:	J.V. Van S	Slyke					
Address:		3095 W 2	4th Ave.					
		Vancouve	r	BC	V6L 1	R7		
Phone: Fax:	604-736- 604-736-	4474 4493	Email: Website:	vicatd	@direct.	са		
iii. Technology D Zero disc	escription charge on	: -farm cher	nical/med	chanica	l system	۱.		
iv. Product Perf Under de	formance (evelopme	or Benefits: nt						
Additional	l informat	ion provide	d	Clair	ns Subst	antiated		Signed Property Agreement
v. Technology/p (a) Minimi (b) Space	roduct red um farm si of farm:	quirements ize (in sow o minimal	in terms (equiv.):)f: 300				
(c) Utilitie	es (energy	input, mate	rials, etc.)): n/a				
(d) Staff/	training:	computer of	controlled	I				
(e) Other	(please sp	ecify):						
vi. Capital and o	perating c	osts:						
Size of C) Dperation	n C	apital Co	osts auiv)	Α	nnual Op	eratin	g Costs
sow eq) 100 S	uiv.) ow	(P	n/a	q ui (1)		(per s	ow eq n/a	uiv.)
300 S	ow							
600 S	ow							
1200	Sow							
Cost Des	cription:							
vii. Special Circ All-weath	cumstance her proof,	s that will a daily proce	iffect the essing of	economi Iiquid w	ic or tec /aste, di	hnical feas y organic	ibility (fertiliz	of the technology/product: zers.
viii. Stage of de	evelopment	t: Devel	opment (1	echnica	al feasib	ility estab	lished)
ix. If your tech technology?	nology is a	it the pre-co	ommercia	phase,	what fur	ther activ	vities a	re required to make this a commercially viable
toonnology	Re	search	Engi	neering	, 1 _	Testing	, D	emonstration
Details:	Sta	ATT	Mark	eting	F	Inancial	(e.g. r	need for capital)
x. Do you have	a business	; plan for co	mmerciali	zing you	ır techno	ology?		
xi. Have you pe	rformed a	ny market	research	to deter	mine the	e feasibilit	y of the	e technology for livestock operations?

March 31, 1999

Inventory Questionnaire Responses

Page 29 of 258

- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: dry organic fertilizer clean water
- xiv. Value / Selling Price of by-products: Depends on nutrient/diet; bulk vs. retail
- xv. Market research undertaken concerning by-products: Broad review of fertilizer markets will be followed by more detailed study when product is completely defined.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests prototype plant

n. rarty		or promotion.			per or product.			
Company:		Transfo	orm Compo	st Syste	ems			
Contact Name:		John Pa	aul					
A	ddress:	34642 I	Mierau Stre	et				
		Abbotst	ord	BC	V2S 4W8			
Pł Fa	1011e: 604-4 1X: 604-4	504-5660 504-5666	Email: Website:	transfo	orm@bc.sympat	ico.ca		
iii. Techr	nology Descrij	otion:						
In se pl	terms of wo eparated hoo lant growth.	orking with ho g solids, usin All products	og produce g worms to are free of	rs, we h produc weed s	ave one project the solids. Ve eeds, pathogen	where v ermicom s and ol	we are producing growing media fro post has growth promoting propertion ojectionable odours.	m es for
iv. Prod	uct Performa	nce or Benefi	ts:					
A	dditional info	rmation provi	ded	Clair	ms Substantiated		Signed Property Agreement	
(a (b (c (d (e) Minimum fa) Space of fai) Utilities (end) Staff/traini 2) Other (pleas	rm size (in so rm: ergy input, ma ng: se specify):	w equiv.): aterials, etc.	.):				
vi. Capit	al and operat	ing costs:						
S	ize of Opera	ation	Capital C	osts	Annual O	peratin	g Costs	
(sow equiv.) 100 Sow		(per sow e	equiv.)	(per s	sow eq	uiv.)	
	300 Sow							
	600 Sow							
	1200 Sow							
C	Cost Descripti	on:						
vii. Spe	cial Circumst	ances that wi	ll affect the	economi	ic or technical fea	asibility (of the technology/product:	
viii. Sta	ige of develop	ment:						
ix. If yo technol	our technology	y is at the pre	e-commercia	ll phase,	what further act	ivities a	re required to make this a commerciall	y viable
τοσπησι Γι	- an	Research Staff	Engi Mark	neering teting	g Testing Financia	D II (e.g. r	emonstration need for capital)	
De	eldiis.							
V Dave	au hava a huc	noce plan for	aammaraial	l-ing voi	in toobaalaan 2			

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Company:		GODRO				
Contact Name:		Pascal Russell				
Address:		102 5th Rang Milto		on Rd.		
		Roxton Po	ond	QC	J0E 1Z0	
Phone:	450-372-	1347	Email:	prussel	@godro.com	
Fax:	450-372-	8485	Website:			

iii. Technology Description:

Four stage continuous and/or batch separation unit: a) mixing; b) separation; c) drying; d) ejection of the solids.

iv. Product Performance or Benefits:

Additional information pro	vided	Claims Substantiated	Signed Property Agreement
 v. Technology/product requirem (a) Minimum farm size (in s) (b) Space of farm: (c) Utilities (energy input, s) (d) Staff/training: (e) Other (please specify): 	ents in terms of: sow equiv.): materials, etc.):		
			_
Size of Operation	Capital Costs	Annual Operatir	ng Costs
(sow equiv.) 100 Sow	(per son equi	(per sow eq	uiv.)
300 Sow			
600 Sow			
1200 Sow			
Cost Description:			
vii. Special Circumstances that	will affect the eco	nomic or technical feasibility	of the technology/product:
viii. Stage of development:			
ix. If your technology is at the p	re-commercial pha	ase, what further activities a	re required to make this a commercially viable

technology?

uuyy:				
	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e	.g. need for capital)

Details:

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name: Aerobic Digestor System

ii. Party responsible for promotion/distribution/developer of product:

Company:		bp Environmental			
Contact N	lame:				
Address:		#643, 21-10405 Jasper Ave.			Э.
		Edmontor	า	AB	T5J 3S2
Phone: 780-430- Fax:		1566	Email: Website:	bpenvir	o@connect.ab.ca

iii. Technology Description:

Liquids are deodorized and pathogen free after treatment. They are also high in nutrient content and can be discharged onto fields through conventional irrigation systems, spraying or injection. Part of the liquids generated can be reused as barn flush water or wash water. After treatment and de-watering is complete, the odour of the solids resembles fresh roto-tilled soil. The digested solids resemble compost therefore greatly reducing the impact on soil when spreading on the surface. Field rotation can be intensified as a result of the very low BOD of the dewatered, digested solids.

iv. Product Performance or Benefits:

Additional	information provided	Claims Substantiate
Additional	ini or mation provided	

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.):
 - (b) Space of farm:
 - (c) Utilities (energy input, materials, etc.):
 - (d) Staff/training:
 - (e) Other (please specify):
- vi. Capital and operating costs:

Size	of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs	
(sov 1	w equiv.) 00 Sow		(per sow equiv.)	
3	00 Sow			
6	00 Sow			
1:	200 Sow			
Cost	Description:			
vii. Special	Circumstances tha	t will affect the economic o	or technical feasibility of the technolo	gy/product:

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
otalla				

Details:

x. Do you have a business plan for commercializing your technology?

March 31, 1999
xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

	• ·									
	Company	/:	Team Lar	ndmark						
	Contact	Name:	Randy Da	avage						
	Address	:	Box 70							
			Landmark	K	MB	R0A	0X0			
	Phone: Fax:	204-355 204-355	5-4061 5-4067	Email: Website:	rdavag	je@mt	o.sympatio	co.ca		
iii. T	echnology - Hydro - Husky - Liquid	Descriptio 3 Point H 's Elite Mo manure p	fl: litch Manifo odel - liquid oumps	Id System	n - man spreade	ure inje er	ection			
iv. F	Product Per	formance	or Benefits							
	Additiona	al informa	ation provide	d	Clai	ms Sub:	stantiated		Signed Property Agreement	
V. I	echnology/ (a) Minin (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: ies (energy 7/training: r (please s	equirements size (in sow y input, mate pecify):	in terms (equiv.): erials, etc.)):					
vi. (Capital and	operating	costs:							
	Size of	Operatio	on C	Capital Co	osts	1	Annual O	perating	Costs	
	(sow e) 100 \$	quiv.) Sow	(P		qui i i j		(per s	sow equ	iv.)	
	300 \$	Sow								
	600 \$	Sow								
	1200	Sow								
	Cost De	scription:								
vii.	Special Cir	cumstance	es that will a	affect the	econom	ic or te	chnical fea	nsibility of	f the technology/product:	
viii.	Stage of d	levelopmer	nt:							
ix. tec	lf your tec hnology?	hnology is	at the pre-c	ommercia	phase,	what fi	urther act	ivities ar	e required to make this a commerc	cially viable
		Re	esearch	Engi	neering	J	Testing	De	emonstration	
	Details:	St	aff	Mark	eting		Financia	i (e.g. n	eed for capital)	
x. I	Do you have	e a busines	ss plan for co	ommerciali	zing you	ır tech	nology?			

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

Inventory Questionnaire Responses

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

i. Technology/Product Name: TurboGenerator

ii. Party responsible for promotion/distribution/developer of product:

Company: Mercu			Mercury Electric Corporation / Allied Signal				
Contact Name:		Rob Woronuk					
Address:		1130, 333	3 - 11th A	ve. SW			
		Calgary		AB	T2V 4X3		
Phone:	403-261	-6811	Email:	gasene	erg@cadvision.com		
Fax:	403-265	-0856	Website:				

iii. Technology Description:

The product is a mini-turbine that could be used in conjunction with gas generation facilities (digesters) to convert animal waste gas into heat and electricity.

iv. Product Performance or Benefits:

The TurboGenerator should produce about 75 kW through the consumption of all the methane in the biogas. CO2 in the gas will remain an emission but NOx emissions will be very low.

Additional information provided Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

- (a) Minimum farm size (in sow equiv.): approx. 1000
- (b) Space of farm: less than 100 sq. ft. (excludes digester)
- (c) Utilities (energy input, materials, etc.): requires digester
- (d) Staff/training: Mercury Electric would operate
- (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow	\$75 (est.)	\$6-7 (est.)

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Technically the unit has not been tested on animal waste gas but has operated for a short period on low energy landfill gas. Undoubtedly modifications will be required but it is not known at this time the extent of these modifications. Economically there must be a use for the electricity (and perhaps heat) generated. For example there must be a viable market for surplus power that cannot be used on-site.

viii. Stage of development: Development (technical feasibility established)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g	. need for capital)
 deregulation to a	t laast sama daaraa	in required	

Details: Power deregulation to at least some degree is required.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: operate as an independent power producer
- xiii. Marketable By-Products Produced: heat / electricity CO2 (in some circumstances)
- xiv. Value / Selling Price of by-products:

This depends very much on the jurisdiction. In Alberta prices are in the \$0.04-0.05/kWhr range.

- xv. Market research undertaken concerning by-products: In Alberta we will be able to sell power into the Power Pool.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

We must prove its technical and economic viability

i. Technology/Product Name: Masko-Zoll: Solids Separation

ii. Party responsible for promotion/distribution/developer of product:

i. Fai ty responsible i	or promotion/u		evelopei	or product.		
Company:	Pollution	Control Tec	hnologie	es Ltd.		
Contact Name:	Troy D. L	apul				
Address:	Suite 100), 4500 - 16t	h Ave N	W		
	Calgary	A	АВ Т	3B 0M6		
Phone: Fax:		Email: Website:				
iii. Technology Descri	ption:					
iv. Product Performa	ince or Benefits	:				
Additional info	rmation provide	ed	Claims	Substantiated	Signed Property Ag	greement
v. Technology/produc (a) Minimum fa (b) Space of fa (c) Utilities (en (d) Staff/train (e) Other (plea	ct requirements rm size (in sow rm: ergy input, mate ing: se specify):	equiv.): erials, etc.):				
vi. Capital and operat	ing costs:					
Size of Opera	ation (Capital Cos	ts	Annual Opera	ating Costs	
(sow equiv.) 100 Sow	4)	iei sow equ	iiv.)	(per sow	equiv.)	
300 Sow						
600 Sow						
1200 Sow						
Cost Descripti	on:					
vii. Special Circumst	ances that will	affect the ec	onomic o	r technical feasibil	ity of the technology/pro	oduct:
viii. Stage of develop	oment:					
ix. If your technolog	y is at the pre-c	commercial pl	hase, wha	at further activitie	es are required to make t	his a commercially viable
teennology:	Research Staff	Engine Marketi	ering ing	Testing Financial (e.	Demonstration g. need for capital)	
Details:			-		-	
x. Do you have a bus	iness plan for c	ommercializir	ng your t	echnology?		
xi. Have you perform	ned any market	research to	determir	ne the feasibility of	the technology for lives	tock operations?
xii. Current/Planned	Marketing Stra	ategies:				
	0	0				

Inventory Questionnaire Responses

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

i. Technology/Product Name: Ozone Generators

ii. Party responsible for promotion/distribution/developer of product:

Company	:	Envron E	nvironme	ntal				
Contact Name:		Allan Finr	Allan Finney					
Address:		4317 Robinson St.						
		Regina		SK	S4S 3E4			
Phone:	306-586-	3353	Email:	allan.fir	nney@sk.sympatico.ca			
Fax:	306-584-	2595	Website:					
			Website:	http://w	ww3.sk.sympatico.ca/e	envron		

iii. Technology Description:

With advances in micro-electronics, Ozone technology can now be economically applied to kill odours and kill bacteria, viruses and germs in containment barns. Envron Environmental has developed systems that will bring down ammonia levels, reduce indoor and outdoor odours, and kill bacteria in containment barns. Envron utilizes mid-range production generators (MRP) generators that are "stackable" or modular. Generators can be added to the system or taken out of the system to expand or decrease the amount of Ozone produced.

iv. Product Performance or Benefits:

Envron has tested systems in hog and poultry barns. When air pollution levels drop, production gains are typical and bacteria control is significant. A published scientific study from Belgium documented odour control and a 4% production gain in hog barns. This study also documented drops in ammonia levels by 50%.

Additional information pro	vided Claim	s Substantiated	Signed Property Agreement
 v. Technology/product requireme (a) Minimum farm size (in s (b) Space of farm: (c) Utilities (energy input, r (d) Staff/training: (e) Other (please specify): 	ents in terms of: sow equiv.): naterials, etc.):		
vi. Capital and operating costs:			
Size of Operation	Capital Costs	Annual Opera	ating Costs
(sow equiv.) 100 Sow	(per sow equiv.)	(per sow	equiv.)
300 Sow			
600 Sow			
1200 Sow			
Cost Description:			

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research Engineering Testing Demonstration

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

Company		NovaTec	Consulta	nts Inc		
Contact Name:		Dr. Troy Vassos				
Address:		224 West 8th Avenue				
		Vancouve	er	BC	V5Y 1N5	
Phone:	604-873-	9262	Email:	tvassos	@novatec.ca	
Fax:	604-873-	2353	Website:			

iii. Technology Description:

In the CIGAR process, manure from the barns is discharged into an anaerobic treatment lagoon, which has a floating membrane cover to capture the bio-gases formed by decomposing manure. The methane gas is trapped by the membrane and piped away to be used either as a heat/energy source for the farm or as a food source for other bacteria in the treatment process. The liquid from the anaerobic CIGAR lagoon system is transferred to an in-ground (lined lagoon) sequenced batch reactor (SBR). This process reduces the organic strength, decreases the ammonia and nitrate concentrations, and treats odour. If desired, up to 90% of the treated effluent from the SBR can be recycled back to the barns to flush manure from hog confinement areas, or potentially treated using advanced oxidation technology for use as drinking water. The effluent from the SBR process is then put into a polishing lagoon and small constructed wetland which uses plants to further clean the effluent. Duckweed harvested from the polishing pond can be used as a protein source for the animals.

iv. Product Performance or Benefits:

Process specifications and performance data is attached. Final effluent quality for the system contains from 5 to 30 mg/l NH4 and less than 100 mg/l BOD/TSS.

Additional information provided

Claims Substantiated

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): 400
 - (b) Space of farm: 3000 sq. metres
 - (c) Utilities (energy input, materials, etc.): 300 kWh/day approx. \$15
 - (d) Staff/training: 1/2 hour
 - (e) Other (please specify):
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Costs will depend greatly on local construction costs for earth moving and for the liners used. Construction in New Zealand involves building earth walled basins. Because of the difficult manure characteristics, there is a minimum pipe diameter and venturi aerator design, which typically restricts the process cost effectiveness to about 400 sow equivalents. The earthen wall construction acts to insulate the reactors against cold temperatures, and the methane gas generated can be partially used to heat the lagoons using either submerged combustion technology or

March 31, 1999

Inventory Questionnaire Responses

Page 45 of 258

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capital)

- Details:
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales joint ventures with local companies
- xiii. Marketable By-Products Produced: biogas (methane) effluent / irrigation water caldium magnesium acetate (potential)
- xiv. Value / Selling Price of by-products:

Heat recovery and power generation based on local heating costs (BTU's). Water recovery costs based on local water availability and costs, plus the intrinsic value of diminishing the effluent volume by 90%. Calcium magnesium acetate has a market value of \$650 per ton.

xv. Market research undertaken concerning by-products:

Most of the by-products are for on-farm use. The exception is Calcium magnesium acetate (CMA) which is used by municipalities and road/highway maintenance agencies, and which has a growing market despite the high cost of hydrocarbon sources needed to currently generate CMA.

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests (currently being used in New Zealand)

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Hog producers in New Zealand have similar conditions and face similar production constraints as Canadian producers. Visits could be arranged to inspect facilities in New Zealand. This system can be easily adapted to the cold Canadian winters by providing either submerged combustion heating or conventional heat exchangers using the methane (bio) gas generated by the process.

conventional heat exchangers. Both NovaTec Consultants and Waste Solutions Ltd. Would prefer to partner with the farm and provide a leased service in order to protect the proprietary knowledge of the process, and are prepared to structure an agreement based on a performance specification.

ii. Party responsible for promotion/distribution/developer of product:

5 1	•		•	•		
Company:	PureLea	in Hogs				
Contact Nan	1e: Bob Not	enbomer				
Address:	666 – 4t	h Street SE				
	Medicine	e Hat	AB	T1A 0K9		
Phone: 40 Fax: 40)3-504-0364)3-528-9922	Email: Website:				
iii. Technology Des Compostin	cription: g					
iv. Product Perfor	mance or Benefit	S:				
Additional in	nformation provid	led	Claim	s Substantiated	Signed Property Agreemen	t
v. Technology/pro (a) Minimum (b) Space of (c) Utilities (d) Staff/tr (e) Other (pl	duct requirement farm size (in sov farm: (energy input, ma aining: lease specify):	s in terms of v equiv.): terials, etc.):	:			
vi. Capital and ope	rating costs:					
Size of Op	eration	Capital Co	sts uiv)	Annual Opera	ating Costs	
(sow equi 100 Sov	v.) v			(per sow	equiv.)	
300 Sov	N					
600 Sov	N					
1200 So	W					
Cost Descr	iption:					
vii. Special Circun	nstances that wil	l affect the e	conomic	or technical feasibil	ity of the technology/product:	
viii. Stage of deve	elopment:					
ix. If your techno techno	logy is at the pre-	commercial j	phase, w	hat further activitie	es are required to make this a cor	nmercially viable
Details:	Research Staff	Engin Marke	eering ting	Testing Financial (e.	Demonstration g. need for capital)	
x. Do you have a t	ousiness plan for (commercializ	ing your	technology?		
xi. Have you perfo	ormed any marke	t research to	o detern	nine the feasibility of	f the technology for livestock ope	rations?
xii. Current/Plan	ned Marketing St	rategies:				
March 31, 1999		I	nventory	Questionnaire Resp	onses	Page 47 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

<i>J</i> 1	1				I		
Company:		EarthCorp	Environm	nental l	_td.		
Contact N	lame:	Cindy Du	ncan				
Address:		41 Hidder	n Valley Ga	ate NW	1		
		Calgary		AB	T3A 5M1		
Phone: Fax:	403-275-1 403-275-9	878 9735	Email: Website:				
iii. Technology D Biologica	escription: al Trigger N	/lechanisr	n (BTM) &	Humic	c acid (H-A) products		
iv. Product Peri	formance o	r Benefits:					
Additiona	l informati	on provide	d	Clain	ns Substantiated	Signed Property Agreement	t
v. Technology/p (a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	product req um farm siz of farm: es (energy i (training: (please spe	uirements ze (in sow nput, mate ecify):	in terms of equiv.): rials, etc.):	f:			
vi. Capital and o	perating co	sts:					
Size of (Operation	C	apital Co	sts	Annual Operati	ing Costs	
(sow eq 100 S	luiv.) Sow	(þ	er sow eq	uiv.)	(per sow e	quiv.)	
300 S	ow						
600 S	iow						
1200	Sow						
Cost Des	cription:						
vii. Special Circ	cumstances	that will a	affect the e	conomi	c or technical feasibility	y of the technology/product:	
viii. Stage of de	evelopment:						
ix. If your tech technology?	nology is at	the pre-c	ommercial	phase, v	what further activities	are required to make this a con	mercially viable
Details:	Res Staf	earch ff	Engin Marke	eering ting	Testing Financial (e.g.	Demonstration need for capital)	
x. Do you have	a business	plan for co	mmercializ	ing you	r technology?		
xi. Have you pe	rformed an	ıy market	research t	o deter	mine the feasibility of t	he technology for livestock oper	rations?
xii. Current/Pl	anned Mark	keting Stra	tegies:		-		
March 31, 1999		5	u I	Inventor	y Questionnaire Respon	ISES	Page 49 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

	· · · ·					
Company:	Agrin	et / Bio/Mass	ter			
Contact N	ame: Brad	Drechler				
Address:	#204	4711 – 51 A	ve.			
	Red I	Deer	AB	T4N 6H6		
Phone:	403-347-7877	Email: Website:				
rax. iii Technology D	403-347-7890 Ascrintion	website.				
Slurry se	paration					
iv. Product Perf	formance or Bene	efits:				
Additional	information pro	vided	Clai	ms Substantiated	Signed Property Agreement	
v. Technology/p (a) Minimu (b) Space (c) Utilitie (d) Staff/ (e) Other	roduct requirem um farm size (in : of farm: s (energy input, training: (please specify):	ents in terms (sow equiv.): materials, etc.	of:):			
vi. Capital and op	perating costs:					
Size of C	Operation	Capital Co (per sow e	osts quiv.)	Annual Opera	iting Costs	
(sow eq 100 S	uiv.) ow	u .	. ,	(per sow	equiv.)	
300 S	ow					
600 S	ow					
1200 \$	Sow					
Cost Desc	cription:					
vii. Special Circ	umstances that	will affect the	econom	ic or technical feasibili	ty of the technology/product:	
viii. Stage of de	velopment:					
ix. If your technology?	nology is at the p	re-commercia	l phase,	what further activitie	s are required to make this a comr	nercially viable
Details:	Researc Staff	h Engi Mark	neering eting	g Testing Financial (e.ç	Demonstration g. need for capital)	
x. Do you have	a business plan f	or commercial	izing you	ur technology?		
xi. Have you pe	rformed any mai	- ket research	to deter	rmine the feasibility of	the technology for livestock operation	ations?
xii. Current/Pla	anned Marketing	Strategies:		-		
March 31, 1999	Ū	-	Invento	ory Questionnaire Respo	onses	Page 51 of 2 [;]

age 51 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

5 1	•		•	•		
Company:	Protect E	Invironment	al Prod	ucts Ltd.		
Contact Name	e: Ken King	smith				
Address:	Bay 6, 13	303 – 44 Av	enue N	E		
	Calgary		AB	T2E 6L5		
Phone: 403 Fax: 403	3-291-4211 3-291-4226	Email: Website:				
iii. Technology Desc ADAB Sorbe	ription: ent - a ground p	olyurethane	foam			
iv. Product Perform	nance or Benefits	S:				
Additional inf	formation provid	ed	Claim	s Substantiated	Signed Property Agreemer	ıt
v. Technology/prod (a) Minimum f (b) Space of f (c) Utilities (e (d) Staff/trai (e) Other (ple	uct requirement Farm size (in sow Farm: Energy input, mat Ining: ase specify):	s in terms of equiv.): erials, etc.):	:			
vi. Capital and opera	ating costs:					
Size of Ope	ration (I	Capital Cos per sow equ	sts uiv.)	Annual Operat	ting Costs	
sow equiv) 100 Sow	·.)	-		(per sow e	equiv.)	
300 Sow						
600 Sow						
1200 Sov	N					
Cost Descrip	ition:					
vii. Special Circums	stances that will	affect the ed	conomic	or technical feasibilit	y of the technology/product:	
viii. Stage of devel	opment:					
ix. If your technolo	ogy is at the pre-	commercial p	hase, w	hat further activities	are required to make this a co	mmercially viable
Details:	Research Staff	Engine Market	eering ting	Testing Financial (e.g	Demonstration . need for capital)	
x. Do you have a bu	isiness plan for c	ommercializi	ing your	technology?		
xi. Have you perfo	rmed any market	t research to	detern	nine the feasibility of 1	the technology for livestock ope	erations?
xii. Current/Planne	ed Marketing Str	ategies:				
March 31, 1999		Ir	nventory	Questionnaire Respo	nses	Page 53 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

Company:	I	Nutri-Soil	s Inc.	ľ				
Contact N	lame:	Geoffrey	Dobbs					
Address:	:	304 – 132	24 11th Av	/e SW				
		Calgary		AB	T3C 0M6			
Phone:	403-245-1	481	Email: Websites					
Fax: iii Technology D	403-245-1	407	website:					
iv Droduct Dorf	Escription.	r Donofite						
				01-1			Classed Descentes Assessment	
Additional	I informati	on provide	d	Clair	ns Substantiated		Signed Property Agreemen	it
(a) Minima (b) Space (c) Utilitie (d) Staff/ (e) Other	of farm: es (energy i 'training: (please spe	nput, mate cify):	erials, etc.)	:				
vi. Capital and o	perating co	ists:					•	
Size of C	Operation	(P	Capital Co	osts quiv.)	Annual O	perating	g Costs	
sow eq) 100 S	luiv.) ow				(per s	sow equ	uiv.)	
300 S	ow							
600 S	ow							
1200	Sow							
Cost Des	cription:							
vii. Special Circ	cumstances	that will	affect the o	econom	ic or technical fea	asibility o	of the technology/product:	
viii. Stage of de	evelopment							
ix. If your tech technology?	nology is at	the pre-c	ommercial	phase,	what further act	ivities ar	re required to make this a cor	nmercially viable
toonnology.	Res	earch	Engir	neering	Testing	D	emonstration	
Details:	Stat	f	Marke	eting	Financia	ıl (e.g. n	eed for capital)	
x. Do you have	a business	plan for co	ommerciali	zing you	ır technology?			
xi. Have you pe	rformed ar	ıy market	researcht	to deter	mine the feasibili	ty of the	e technology for livestock ope	erations?
xii. Current/Pla	anned Mark	ceting Stra	ategies:			-		
March 31, 1999				Invento	ry Questionnaire F	Response	es	Page 55 of 258

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

in runty				olopol ol	pi oudot.					
С	ompany:	Space Ca	pace Carbon Insulation Inc. / Industrial World Technology Inc.							
С	ontact Name:	Joeseph I	wasenko							
A	ddress:	Suite 203	, 3511 – 118	Ave.						
		Edmontor	n AE	8 T5V	V 4P6					
P F	hone: 403-4 ax: 403-4	71-2355 77-9511	Email: Website:							
iii. Tech p c	nology Descript processing fect containers	tion: al matter into	Carbon Black	, Fertiliz	er, Ammonia,	and Methane; cy	vrogenic freezing st	orage		
iv. Proc	luct Performan	ce or Benefits:								
A	dditional inform	mation provide	d (Claims Sul	bstantiated	Signed Pro	perty Agreement			
v. Tech (; () ((() ()	nology/product a) Minimum farr b) Space of farr c) Utilities (ener d) Staff/trainin e) Other (please	requirements m size (in sow n: rgy input, mate g: e specify):	in terms of: equiv.): erials, etc.):							
vi. Capi	tal and operatir	ig costs:								
S	Size of Operat	ion C	Capital Costs		Annual Oper	ating Costs				
	(sow equiv.) 100 Sow	(Þ	er sow equiv	·.)	(per sow	v equiv.)				
	300 Sow									
	600 Sow									
	1200 Sow									
	Cost Description	n:								
vii. Spe	ecial Circumsta	nces that will a	affect the ecor	nomic or t	echnical feasibi	lity of the techno	logy/product:			
viii. St	age of developn	nent:								
ix. If y	our technology	is at the pre-c	ommercial pha	se, what	further activiti	es are required to	o make this a comme	rcially viable		
tecnno	iogy?	Research Staff	Engineer Marketin	ring	Testing Financial (e	Demonstratio	on vital)			
D	etails:	-un		3		.g. 11000 101 001				
x. Do y	vou have a busin	ess plan for co	ommercializing	your tec	hnology?					
xi. Hav	ve you performe	ed any market	research to de	etermine	the feasibility o	f the technology f	for livestock operation	ons?		

March 31, 1999

Inventory Questionnaire Responses

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- $xv. \ \mbox{Market}\ \mbox{research}\ \mbox{undertaken}\ \mbox{concerning}\ \mbox{by-products:}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

5 1	•		•	•		
Company	: TR	IZONE Internati	ional Te	chnologies		
Contact I	Name: Ro	bert Tremblay				
Address:	24	Rivervalley Driv	/e SE			
	Ca	lgary	AB	T2C 3K6		
Phone: Fax:	403-279-923 403-279-923	2 Email: 2 Website:				
iii. Technology I	Description:					
Uzone p iv Product Por	formance or R	se in storage tre onofits [,]	atment			
	information	arovidad	Clain	ac Substantiated	Signad Droparty Agroomant	
Additiona		u ovided	Udii	is substantiated	Signed Property Agreement	
v. recrinology/ (a) Minim (b) Space (c) Utiliti (d) Staff. (e) Other	product require num farm size (e of farm: es (energy inpu / training: (please specif	in sow equiv.): it, materials, etc. y):):			
vi. Capital and o	operating costs	S.				
Size of	Operation	Capital C	osts	Annual Operating	g Costs	
(sow e 100 \$	quiv.) Sow	(per sow e	equiv.)	(per sow equ	liv.)	
300 \$	Sow					
600 \$	Sow					
1200	Sow					
Cost Des	scription:					
vii. Special Cir	cumstances the	at will affect the	economi	c or technical feasibility o	f the technology/product:	
viii. Stage of d	evelopment:					
ix. If your tech technology?	nnology is at th	e pre-commercia	Il phase, \	what further activities ar	e required to make this a comm	ercially viable
Details:	Resea Staff	rch Engi Mark	neering teting	Testing De Financial (e.g. n	emonstration eed for capital)	
x. Do you have	a business pla	n for commercial	izing you	r technology?		
xi. Have you pe	erformed any n	narket research	to deter	mine the feasibility of the	technology for livestock operat	cions?
xii. Current/P	lanned Marketi	ng Strategies:				
March 31, 1999			Inventor	y Questionnaire Response	S	Page 59 of 2

Page 59 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

J 1					1		
Company:	А	quasol Te	chnologie	es			
Contact N	lame: J	ose Loure	nco				
Address:	1	7307 – 10	7 Avenue	9			
	E	dmonton		AB	T5S 1E5		
Phone: Fax: iii. Technology D Complet iv. Product Peri	403-487-42 403-487-88 escription: e treatment formance or	243 E 375 V - BAWT (1 Benefits:	mail: Vebsite: biological	anima	I waste treatment	process	
Additiona	l informatio	n provided		Claim	s Substantiated	Signed Property Agr	eement
v. Technology/p (a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	product requ um farm size of farm: es (energy in (training: (please spec	irements ir e (in sow eq put, materi cify):	i terms of: iuiv.): als, etc.):	:			
vi. Capital and o Size of (perating cos Operation	ts: Ca	pital Cos	sts	Annual Ope	rating Costs	
(sow ec 100 S	luiv.) Sow	(per	3011 641	uiv. <i>j</i>	(per sov	v equiv.)	
300 S	ow						
600 S	ow						
1200	Sow						
Cost Des	cription:						
vii. Special Circ	cumstances f	that will af	fect the eq	conomic	; or technical feasib	ility of the technology/produ	uct:
viii. Stage of de	evelopment:						
ix. If your tech	nology is at	the pre-con	nmercial p	hase, v	vhat further activit	ies are required to make thi	s a commercially viable
Details:	Rese Staff	earch	Engine Market	eering ting	Testing Financial (e	Demonstration e.g. need for capital)	
x. Do you have	a business p	lan for com	mercializi	ing your	r technology?		
xi. Have you pe	rformed any	ı market re	esearch to	deterr	nine the feasibility (of the technology for livesto	ck operations?
xii. Current/Pl	anned Marke	eting Strate	egies:				
March 31, 1999			Ir	nventor	y Questionnaire Res	ponses	Page 61 of 2

Page 61 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

J 1	I			I I		
Company	: Reid	Crowther				
Contact N	lame: Gerr	y Stevens				
Address:	201 -	- 3275 Lakesł	nore Rd			
	Kelo	wna	BC	V1W 3S9		
Phone: Fax:	250-762-3727	Email: Website:				
iii. Technology [mounde)escription: d static pile con	nposting				
iv. Product Per	formance or Ben	efits:				
Additiona	I information pr	ovided	Clair	ns Substantiated	Signed Property Agreemen	t
v. Technology/µ (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other	product requiren um farm size (in e of farm: es (energy input, /training: (please specify)	nents in terms (sow equiv.): materials, etc. :	of:):			
vi. Capital and c	operating costs:	Canital C	oete	Annual Opera	ting Costs	
5120 01	operation	(per sow e	quiv.)	Annual Opera		
(sow eo 100 S	quiv.) Sow			(per sow o	equiv.)	
300 \$	Sow					
600 \$	Sow					
1200	Sow					
Cost Des	scription:					
vii. Special Cire	cumstances that	will affect the	economi	ic or technical feasibilit	ty of the technology/product:	
viii. Stage of d	evelopment:					
ix. If your tech technology?	nnology is at the	pre-commercia	l phase,	what further activities	s are required to make this a cor	nmercially viable
Details:	Researd Staff	h Engi Mark	neering eting) Testing Financial (e.g	Demonstration J. need for capital)	
x. Do you have	a business plan t	for commercial	izing you	ır technology?		
xi. Have you pe	erformed any ma	rket research	to deter	mine the feasibility of	the technology for livestock ope	rations?
xii. Current/Pl	anned Marketing	y Strategies:		-	•	
March 31, 1999	·	-	Invento	ry Questionnaire Respo	nses	Page 63 of 2

Page 63 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

Company	:	Techni-G	row Green	houses	6				
Contact N	Vame:	Brian Pou	uwels						
Address:		7512 Le I	- euvre Roa	ad					
		Langley		BC	V3A 4	4P9			
Phone: Fax:	604-792- (604) 792	0097 2-6558	Email: Website:						
iii. Technology [Compos)escription iting	:							
iv. Product Per	formance	or Benefits	:						
Additiona	al informat	ion provide	d	Clain	ns Subs	tantiated		Signed Property Agreeme	nt
v. Technology/ (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other	product re num farm s e of farm: es (energy /training: (please sp	quirements ize (in sow input, mate ecify):	s in terms of equiv.): erials, etc.):						
vi. Capital and c	perating c	osts:		-1-					
Size of	Operation	1 (P	er sow eq	sts uiv.)	F		peratin	g Costs	
(sow eo 100 \$	quiv.) Sow					(per	sow eq	uiv.)	
300 \$	Sow								
600 \$	Sow								
1200	Sow								
Cost Des	scription:								
vii. Special Cir	cumstance	s that will	affect the e	conomi	c or teo	chnical fea	asibility (of the technology/product:	
viii. Stage of d	evelopmen	t:							
ix. If your tech technology?	nnology is a	it the pre-c	ommercial	phase, v	what fu	rther act	ivities ar	re required to make this a co	mmercially viable
Details:	Re Sta	search aff	Engin Marke	eering ting		Testing Financia	D II (e.g. n	emonstration need for capital)	
x. Do you have	a business	s plan for co	ommercializ	ing you	r techn	ology?			
xi. Have you pe	erformed a	iny market	research t	o deter	mine th	e feasibili	ty of the	e technology for livestock op	erations?
xii. Current/Pl	anned Mar	keting Stra	ategies:						
March 31, 1999			1	nventor	y Ques	tionnaire l	Response	es	Page 65 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

J 1	1		1 1		
Company:	R.J. Mark	s & Sonic Fert	ilizers Ltd.		
Contact Name	R.J. Mark	s			
Address:	Box 2276	, Station Main			
	Sardis	BC	V2R 1A6		
Phone: Fax:		Email: Website:			
iii. Technology Desci water treatm	ription: ent unit; remov	al of solids for	drying, sterilization, a	nd pelletizing	
iv. Product Perform	nance or Benefits:				
Additional inf	ormation provide	d Cl	aims Substantiated	Signed Property Agreement	
v. Technology/produ (a) Minimum f (b) Space of f (c) Utilities (e (d) Staff/trai (e) Other (ple	uct requirements arm size (in sow arm: nergy input, mate ning: ase specify):	in terms of: equiv.): erials, etc.):			
vi. Capital and opera Size of Ope	nting costs: ration C	Capital Costs	Annual Oper	ating Costs	
(sow equiv 100 Sow	(p .)	er sow equiv.) (per sow	equiv.)	
300 Sow					
600 Sow					
1200 Sov	v				
Cost Descrip	tion:				
vii. Special Circums	stances that will a	affect the econo	mic or technical feasibi	ity of the technology/product:	
viii. Stage of develo	opment:				
ix. If your technolo	gy is at the pre-c	ommercial phas	e, what further activiti	es are required to make this a commercially via	ble
Details:	Research Staff	Engineeri Marketing	ng Testing Financial (e	Demonstration g. need for capital)	
x. Do you have a bu	siness plan for co	mmercializing y	our technology?		
xi. Have you perfor	med any market	research to det	ermine the feasibility o	f the technology for livestock operations?	
xii. Current/Planne	d Marketing Stra	itegies:			
March 31, 1999	-	Inver	ntory Questionnaire Resp	onses Page 67 c	of 2

Page 67 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

5 1					•		
Company	/:	DGH Eng	ineering				
Contact	Name:	Dr. Shahr	naz Danes	sh			
Address	:	12 Aviatio	on Blvd.				
		St. Andre	ws	MB	R1N 3N5		
Phone: Fax:	204-334 204-334	-8846 -6965	Email: Website:				
iii. Technology Low tem	Description operature	n: anaerobic	digestion				
iv. Product Per	formance	or Benefits:					
Additiona	al informa	tion provide	d	Clair	ns Substantiated	Signed Property Agreement	
v. Technology/ (a) Minin (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: ies (energy /training: r (please sp	equirements size (in sow y input, mate pecify):	in terms o equiv.): erials, etc.))f: :			
vi. Capital and	operating o	costs:				•	
Size of	Operatio	n (p	er sow ec	osts quiv.)	Annual Operatin	g Costs	
(sow e 100 \$	quiv.) Sow				(per sow equ	uiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost Des	scription:						
vii. Special Cir	cumstance	es that will a	affect the	economi	ic or technical feasibility of	of the technology/product:	
viii. Stage of d	levelopmen	nt:					
ix. If your tech technology?	hnology is a	at the pre-c	ommercial	phase,	what further activities ar	re required to make this a com	mercially viable
Details:	Re Sta	esearch aff	Engir Marke	neering eting) Testing D Financial (e.g. n	emonstration need for capital)	
x. Do you have	e a busines	s plan for co	ommerciali	zing you	ır technology?		
xi. Have you p	erformed	any market	researcht	to deter	mine the feasibility of the	e technology for livestock operation	ations?
xii. Current/P	lanned Mai	rketing Stra	tegies:				
March 31, 1999				Invento	ry Questionnaire Response	es	Page 69 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

• •		-					
Company	1:	EC Cons	ulting				
Contact	Name:	Doug Ere	dman				
Address		111 Lodg	ge Ave				
		Winnipeg	9	MB	R3J 0R6		
Phone: Fax:	204-896 204-896	6-3871 6-3871	Email: Website:				
iii. Technology l E-beam	Descriptio radiatior)N: ו					
iv. Product Per	formance	e or Benefits	S.				
Additiona	al informa	ation provide	ed	Clai	ms Substantiated	Signed Property Agreement	
(a) Minim (b) Space (c) Utiliti (d) Staff (e) Other	num farm e of farm: es (energ /training: ⁻ (please s	size (in sow y input, mat specify):	equiv.): erials, etc.)):			
vi. Capital and o	operating	costs:	Conital C		Annual Oneret		
Size of	Operatio	on (capital Co per sow e	quiv.)	Annual Operation	ing Costs	
(sow e) 100 \$	quiv.) Sow				(per sow e	quiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost Des	scription:						
vii. Special Cir	cumstanc	es that will	affect the	econom	ic or technical feasibility	y of the technology/product:	
viii. Stage of d	levelopme	nt:					
ix. If your tecl	hnology is	at the pre-	commercial	phase,	what further activities	are required to make this a com	mercially viable
Details:	R St	esearch taff	Engiı Mark	neering eting	g Testing Financial (e.g.	Demonstration need for capital)	
x. Do you have	e a busines	ss plan for c	ommerciali	zing you	ur technology?		
xi. Have you p	erformed	any market	research	to deter	mine the feasibility of t	he technology for livestock oper	ations?
xii. Current/P	lanned Ma	arketing Str	ategies:				
March 31, 1999				Invento	ry Questionnaire Respon	ISES	Page 71 of 2

Page 71 of 258
xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

J 1	1				I			
Company	/:	AgWaste	Manager	ment Co	orp.			
Contact	Name:	Jean-Noe	el Guyot					
Address	:	Box 179						
		Oak Bluff		MB	R0G 1N0			
Phone:	204-895-	-4370	Email: Wobsito:	agwas	te@autobahn.ml	b.ca		
iii Technology	204-895 Descrintion	-4370 1 [.]	WEDSILE.					
Provide	custom si	urface app	lication of	f liquid f	ertilizer through	a line-tra	actor	
iv. Product Per	rformance	or Benefits	:					
Addition	al informat	tion provide	d	Clair	ms Substantiated		Signed Property Agreement	
v. Technology/ (a) Minin (b) Space (c) Utilit (d) Staff (e) Other	product re num farm s e of farm: ies (energy f/training: r (please sp	equirements size (in sow rinput, mate pecify):	in terms (equiv.): erials, etc.	of:):				
vi. Capital and	operating c	costs:						
Size of	Operation	n (p	Capital Co er sow e	osts quiv.)	Annual O	perating	J Costs	
(sow e 100 :	quiv.) Sow	ŭ		. ,	(per s	ow equ	iv.)	
300 \$	Sow							
600 \$	Sow							
1200	Sow							
Cost De	scription:							
vii. Special Cir	cumstance	es that will a	affect the	econom	ic or technical fea	sibility of	f the technology/product:	
viii. Stage of c	levelopmen	t:						
ix. If your tec technology?	hnology is a	at the pre-c	ommercia	l phase,	what further acti	vities are	e required to make this a comm	nercially viable
toonnology	Re	search	Engi	neering	Testing	De	emonstration	
Details:	Sta	aff	Mark	eting	Financia	l (e.g. ne	eed for capital)	
x. Do you have	e a business	s plan for co	ommercial	izing you	ır technology?			
xi. Have you p	erformed a	any market	research	to deter	mine the feasibilit	ty of the t	technology for livestock opera	tions?
xii. Current/P	Planned Mar	rketing Stra	ategies:					
March 31, 1999		-	-	Invento	ry Questionnaire R	esponse	S	Page 73 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

• •				-			
Company:	:	Nelson R	iver Cons	truction			
Contact N	lame:	Martin Hi	ldebrand				
Address:		101 Daw	son Rd.				
		Winnipeg	ļ	MB	R2J 0S6		
Phone:	204-949	-8700	Email: Wahaita				
rax. iii Technology D	204-237 Ascrintion	-8337 1 [.]	websile.				
iv Droduct Dar	formanco	nr Ronofits					
Additiona	l information	tion provide	.d	Clair	ne Substantiated	Signed Droparty Agreement	
Auuitiona	II IIII 01 111d	tion provide	u	Udli	IIS SUDSTAIITIATEO	Signed Property Agreement	
(a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	um farm s of farm: es (energy (training: (please sp	ize (in sow r input, mat pecify):	equiv.): erials, etc.)	:			
vi. Capital and o	perating o	costs:					
Size of (Operatio	n (Capital Co	osts	Annual Operatir	ng Costs	
(sow ec 100 S	quiv.) Sow	(F	er sow e	quiv.)	(per sow eq	juiv.)	
300 S	Sow						
600 S	Sow						
1200	Sow						
Cost Des	cription:						
vii. Special Circ	cumstance	es that will	affect the	economi	ic or technical feasibility	of the technology/product:	
viii. Stage of de	evelopmen	t:					
ix. If your tech technology?	nology is a	at the pre-c	commercial	phase,	what further activities a	re required to make this a com	mercially viable
Details:	Re Sta	search aff	Engir Marke	neering eting	Testing E Financial (e.g.	Demonstration need for capital)	
x. Do you have	a business	s plan for c	ommerciali	zing you	ır technology?		
xi. Have you be	erformed a	anv market	research	to deter	mine the feasibility of th	e technology for livestock oper	ations?
xii. Current/PL	anned Mar	rketina Stra	ategies:				
		youngour					
March 31, 1999				Invento	ry Questionnaire Respons	ses	Page 75 of 2

Page 75 of 258

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

Company	/:	Modern C	Drganics In	c.			
Contact	Name:	Ed Mayer					
Address	:	1350 – B	Spruce St	reet			
		Winnipeg		MB	R3H 0Z6		
Phone:	204-775-	-3433	Email: Wobsito:				
rax. iii Tochnology l	204-772- Description	-7258	websile.				
filtration	, compres	sion drying	g, densifyir	ng to fu	el a combustion eng	jine gen-set	
iv. Product Per	formance	or Benefits		-		-	
Additiona	al informat	tion provide	d	Clain	ns Substantiated	Signed Property Agreemen	t
v. Technology/ (a) Minim (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: ies (energy /training: r (please sp	quirements ize (in sow r input, mate pecify):	: in terms of equiv.): erials, etc.):	f:			
vi. Capital and (operating o	costs:					
Size of	Operation	n (Capital Co	sts	Annual Opera	ting Costs	
(sow e 100 \$	quiv.) Sow	(P	er sow eq	uiv.)	(per sow	equiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost Des	scription:						
vii. Special Cir	cumstance	es that will	affect the e	conomi	c or technical feasibili	ty of the technology/product:	
viii. Stage of d	levelopmen	t:					
ix. If your tech technology?	hnology is a	at the pre-c	ommercial	phase, v	vhat further activitie	s are required to make this a con	nmercially viable
teennology:	Re Sta	esearch aff	Engin Marke	eering ting	Testing Financial (e.	Demonstration g. need for capital)	
Details:				U			
x. Do you have	e a business	s plan for co	ommercializ	ing you	r technology?		
xi. Have you p	erformed a	any market	research t	o deteri	mine the feasibility of	the technology for livestock ope	rations?
xii. Current/P	lanned Mar	rketing Stra	ategies:				
March 31, 1999			I	Inventor	y Questionnaire Respo	onses	Page 77 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

Company	: PMG (Construction L	TD.			
Contact N	Vame: Jerry S	Sorokowski				
Address:	2036 \$	Sinclair St.				
	Winnip	beg	MB	R2V 4S5		
Phone: Fax:	204-334-8815 204-334-8815	Email: Website:				
iii. Technology [Clivus N)escription: Iultrum - separati	ng solids & lic	quids; c	composting; and liqu	ids treatment	
iv. Product Per	formance or Bene	fits:	-			
Additiona	I information prov	/ided	Clain	ns Substantiated	Signed Property Agreement	
v. Technology/j (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other	product requireme num farm size (in s e of farm: es (energy input, n /training: (please specify):	nts in terms of ow equiv.): naterials, etc.):	f:			
vi. Capital and c	operating costs:					
Size of	Operation	Capital Co (per sow eq	sts uiv.)	Annual Opera	ating Costs	
(sow eo 100 S	quiv.) Sow	u	,	(per sow	equiv.)	
300 \$	Sow					
600 \$	Sow					
1200	Sow					
Cost Des	scription:					
vii. Special Cir	cumstances that v	vill affect the e	conomi	c or technical feasibil	ity of the technology/product:	
viii. Stage of d	evelopment:					
ix. If your tech technology?	nnology is at the pr	e-commercial	phase, v	vhat further activitie	es are required to make this a com	mercially viable
Details:	Research Staff	Engin Marke	eering ting	Testing Financial (e.	Demonstration g. need for capital)	
x. Do you have	a business plan fo	r commercializ	ing you	r technology?		
xi. Have you pe	erformed any mar	ket research t	o deter	mine the feasibility of	the technology for livestock oper	ations?
xii. Current/Pl	anned Marketing S	Strategies:				
March 31, 1999		l	Inventor	y Questionnaire Resp	onses	Page 79 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

Company	y:	AGRI So	lutions				
Contact	Name:	Chad Hu	ghes				
Address		1530 18tl	h Street N				
		Brandon		MB	R7C 1A5		
Phone: Fax:	204-725 204-725	-3960 -1382	Email: Website:				
iii. Technology EMS ae	Descriptio eration	n:					
iv. Product Per	rformance	or Benefits	:				
Addition	al informa	tion provide	ed	Clain	ns Substantiated	Signed Property Agreement	
v. Technology/ (a) Minin (b) Spac (c) Utilit (d) Staff (e) Other	/product re num farm s e of farm: ies (energy f/training: r (please s	equirements size (in sow y input, mate pecify):	s in terms c equiv.): erials, etc.)	of:):			
vi. Capital and	operating	costs:					
Size of	Operatio	n (Capital Co	osts	Annual Operat	ing Costs	
(sow e 100	quiv.) Sow	U.		quiv.)	(per sow e	quiv.)	
300	Sow						
600	Sow						
1200) Sow						
Cost De	scription:						
vii. Special Cir	rcumstance	es that will	affect the	economi	c or technical feasibility	y of the technology/product:	
viii. Stage of c	developmer	nt:					
ix. If your tec technology?	hnology is	at the pre-c	commercial	phase, v	what further activities	are required to make this a com	mercially viable
Details:	Re St	esearch aff	Engir Marke	neering eting	Testing Financial (e.g.	Demonstration . need for capital)	
x. Do you have	e a busines	s plan for c	ommerciali	zing you	r technology?		
xi. Have you p	erformed	any market	research	to deter	mine the feasibility of t	he technology for livestock oper	ations?
xii. Current/P	Planned Ma	rketing Stra	ategies:				
March 31, 1999				Inventor	y Questionnaire Respor	nses	Page 81 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

Company	y:	Original V	ermitech	System	IS			
Contact	Name:	Albert Eg	gan					
Address	S:	2328 Que	en St. E					
		Toronto		ON	M4E 1G9			
Phone: Fax:	416-693- 416-693-	-1027 -9744	Email: Website:					
iii. Technology Separa	Description tion/ Comp	1: posting						
iv. Product Pe	rformance	or Benefits:						
Addition	al informat	tion provide	d	Clain	ns Substantiat	ed	Signed Property Agreement	
v. Technology/ (a) Minir (b) Spac (c) Utilit (d) Staft (e) Othe	/product re mum farm s e of farm: ies (energy f/training: r (please sp	equirements size (in sow v input, mate pecify):	in terms o equiv.): erials, etc.)	f: :				
vi. Capital and	operating c	costs:						
Size of	Operation	n (Capital Co	osts	Annua	Operating	g Costs	
(sow e 100	equiv.) Sow	(P		4uiv.)	(pe	er sow equ	uiv.)	
300	Sow							
600	Sow							
1200) Sow							
Cost De	escription:							
vii. Special Cir	rcumstance	es that will a	affect the e	economi	c or technical	feasibility o	of the technology/product:	
viii. Stage of (developmen	t:						
ix. If your tec technology?	chnology is a	at the pre-c	ommercial	phase, v	what further a	ictivities ar	re required to make this a comm	ercially viable
Details:	Re Sta	esearch aff	Engir Marke	eering eting	Testin Finan	g Do cial (e.g. n	emonstration eed for capital)	
x. Do you hav	e a business	s plan for co	ommercializ	zing you	r technology?			
xi. Have you p	erformed a	any market	research t	to deter	mine the feasi	oility of the	technology for livestock opera	tions?
xii. Current/F	Planned Mar	rketing Stra	itegies:			<u>у</u>	0 5	
March 31, 1999)	J	v	Invento	y Questionnai	e Response	es	Page 83 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

• •	-				•		
Company	/:	Delta Eng	gineering				
Contact	Name:	George E	Brown				
Address	:	2301 St.	Laurent Blv	d.			
		Ottawa	(ON	K1G 4J7		
Phone: Fax:	613-521 613-521	-0348 -5833	Email: Website:				
iii. Technology Spowflu	Description	1: zina Freez	e Crystalliz	ation (
iv. Product Per	formance	or Benefits			(10)		
Additiona	al informa	tion provide	ed	Claim	ns Substantiated	Signed Property Agreemer	nt
v. Technology/ (a) Minin (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: ies (energy f/training: r (please sp	equirements size (in sow v input, mate pecify):	s in terms of: equiv.): erials, etc.):				
vi. Capital and	operating o	costs:					
Size of	Operation	n (r	Capital Cos per sow equ	sts uiv.)	Annual Operat	ing Costs	
(sow e 100 \$	quiv.) Sow	u	•	,	(per sow e	equiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost De	scription:						
vii. Special Cir	cumstance	es that will	affect the eq	conomi	c or technical feasibility	y of the technology/product:	
viii. Stage of d	levelopmen	it:					
ix. If your technology?	hnology is a	at the pre-c	commercial p	hase, v	vhat further activities	are required to make this a co	mmercially viable
Details:	Re Sta	esearch aff	Engine Market	ering ing	Testing Financial (e.g	Demonstration . need for capital)	
x. Do you have	e a busines:	s plan for c	ommercializi	ng you	r technology?		
xi. Have you p	erformeda	any market	research to	deteri	mine the feasibility of t	he technology for livestock ope	erations?
xii. Current/P	lanned Mar	rketing Str	ategies:				
March 31, 1999			Ir	nventor	y Questionnaire Respor	nses	Page 85 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

J 1	•		•	•		
Company:	Ontario	Hydro Tech	nologie	es		
Contact Nam	le: Paul Din	iner				
Address:	800 Kipl	ing Ave.				
	Toronto		ON	M8Z 5S4		
Phone: 41 Fax:	6-207-5694	Email: Website:				
iii. Technology Desc OHT/RCM	cription: Treatment Syste	em; bio-dig	estion a	nd chemical separa	tion.	
iv. Product Perfor	mance or Benefit	S:				
Additional in	formation provid	led	Clain	ns Substantiated	Signed Property Agreement	t
v. Technology/prod (a) Minimum (b) Space of (c) Utilities ((d) Staff/tra (e) Other (pl	duct requirement farm size (in sov farm: energy input, ma ining: ease specify):	s in terms o v equiv.): terials, etc.)	f: :			
vi. Capital and oper	ating costs:	Conital Ca	to	Appuel Opera	ting Costs	
Size of Op	eration (per sow eo	quiv.)	Annual Opera	ting costs	
sow equi) 100 Sov	v.) v			(per sow	equiv.)	
300 Sov	V					
600 Sov	V					
1200 So	W					
Cost Descri	ption:					
vii. Special Circum	istances that will	affect the	economi	c or technical feasibili	ty of the technology/product:	
viii. Stage of deve	lopment:					
ix. If your technol technology?	ogy is at the pre-	commercial	phase, v	what further activitie	s are required to make this a com	mercially viable
Details:	Research Staff	Engir Marke	eering eting	Testing Financial (e.	Demonstration g. need for capital)	
v. Do vou bavo a b	usinoss nlan for (commorciali	zina vou	r tochnology?		
			zing you			
XI. Have you perfo	ormed any marke	t research l	to deter	mine the reasibility of	the technology for livestock oper	"ations?
xii. Current/Plann	ed Marketing Str	rategies:				
March 31, 1999			Inventor	y Questionnaire Respo	onses	Page 87 of 2

ge 87 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

5 1	1		•	•		
Company	Atara (Corporation				
Contact N	lame: Dev Ja	issal				
Address:	9700 H	lenri-Bouras	sa West			
	Ville St	t-Laurent	QC H4	S 1R5		
Phone: Fax:	514-331-8332 514-335-9346	Email: Website:				
iii. Technology [Integrate)escription: ed Biologically Ac	tive Clarificat	tion (IBAC)			
iv. Product Per	formance or Benef	its:				
Additiona	l information prov	rided	Claims Su	ıbstantiated	Signed Property Agreement	
v. Technology/p (a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	oroduct requireme um farm size (in so of farm: es (energy input, m (training: (please specify):	nts in terms o ow equiv.): aterials, etc.)	f: :			
vi. Capital and o	perating costs:					
Size of (Operation	Capital Co	osts	Annual Oper	ating Costs	
(sow eo 100 S	quiv.) Sow	(per sow ec	iuv.)	(per sow	<i>ı</i> equiv.)	
300 \$	Sow					
600 S	Sow					
1200	Sow					
Cost Des	scription:					
vii. Special Circ	cumstances that w	vill affect the e	economic or	technical feasibi	lity of the technology/product:	
viii. Stage of de	evelopment:					
ix. If your tech	nology is at the pr	e-commercial	phase, what	further activitie	es are required to make this a commercial	ly viable
teennology:	Research	Engin	eering	Testing	Demonstration	
Details:	Starr	Warke	ang	Financiai (e.	.g. need for capital)	
x. Do you have	a business plan for	commercializ	zing your tec	chnology?		
xi. Have you pe	erformed any mark	ket research t	to determine	the feasibility of	f the technology for livestock operations?	
xii. Current/Pl	anned Marketing S	trategies:				
	5	U U				

March 31, 1999

Inventory Questionnaire Responses

Page 89 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

Company:	:	DEC Grou	qu				
Contact N	lame:						
Address:		Suite 704	, 1100 Crei	mazie Bl	vd. East		
		Montreal		QC H	I2P 2X2		
Phone: Fax:	514-593-1 514-593-1	1001 1479	Email: Website:				
iii. Technology D DEC 200)escription: D0 - therma	al dehydra	ation				
iv. Product Peri	formance o	r Benefits:					
Additiona	l informati	on provide	d	Claims	Substantiated	Signed Prope	rty Agreement
v. Technology/p (a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	oroduct req um farm siz of farm: es (energy i (training: (please spe	uirements ze (in sow input, mate ecify):	in terms of equiv.): erials, etc.):	:			
vi. Capital and o	perating co	osts:					
Size of (Operation	(n	Capital Cos	sts	Annual Op	erating Costs	
(sow ec 100 S	quiv.) Sow	()	er sow eq	uiv.j	(per so	ow equiv.)	
300 S	Sow						
600 S	Sow						
1200	Sow						
Cost Des	cription:						
vii. Special Circ	cumstances	s that will a	affect the ed	conomic o	r technical feas	ibility of the technolog	y/product:
viii. Stage of de	evelopment	:					
ix. If your tech	nology is at	t the pre-c	ommercial p	hase, wh	at further activ	ities are required to n	nake this a commercially viable
toonnology.	Res	search	Engine	ering	Testing	Demonstration	
Details:	Stat	ff	Market	ling	Financial	(e.g. need for capit	al)
x. Do you have	a business	plan for co	ommercializi	ng your t	echnology?		
xi. Have you pe	erformed ar	ny market	research to	determir	ne the feasibility	/ of the technology for	livestock operations?
xii. Current/Pl	anned Mark	keting Stra	itegies:				

March 31, 1999

Inventory Questionnaire Responses

Page 91 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

	•				•		
Company	:	PAMI					
Contact I	Name:	David Gu	Illacher				
Address:		P.O. Box	1060				
		Humbolt		SK	S0K 2H0		
Phone: Fax:	306-682 306-682	2-2555 2-5080	Email: Website:				
iii. Technology I	Descriptio)n: 	-		a a la mal		
iv Product Per	formance	or Renefits	g manure	ongra	SSIANU		
Addition:	al informa	ation provide	۲	Clair	ns Substantiated	Signed Property Agreement	
Additione			,u	oluli		orgineur i oper ty rigi cement	
(a) Minim (b) Space (c) Utiliti (d) Staff. (e) Other	num farm e of farm: es (energ /training: (please s	size (in sow y input, mate specify):	equiv.): erials, etc.)	и: :			
vi. Capital and o	operating	costs:					
Size of	Operatio	on (Capital Co	osts	Annual Opera	ting Costs	
(sow e 100 \$	quiv.) Sow	(F	er sow e	quiv.)	(per sow o	equiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost Des	scription:						
vii. Special Cir	cumstanc	es that will	affect the	economi	ic or technical feasibilit	ty of the technology/product:	
viii. Stage of d	evelopme	nt:					
ix. If your tech technology?	nnology is	at the pre-c	commercial	phase,	what further activities	s are required to make this a com	mercially viable
Details:	R) S1	esearch taff	Engir Marko	neering eting) Testing Financial (e.g	Demonstration J. need for capital)	
x. Do you have	a busines	ss plan for c	ommerciali	zing you	ır technology?		
xi. Have you pe	erformed	any market	research	to deter	mine the feasibility of	the technology for livestock oper	ations?
xii. Current/P	lanned Ma	rketing Stra	ategies:				
March 31, 1999				Invento	ry Questionnaire Respo	nses	Page 93 of 2

Page 93 of 258

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

<i>J</i> 1	1				1		
Compan	iy:	Western C	Drganics L	td.			
Contact	Name:	Alvey Hall	ogewachs				
Address	S:	3134 Dew	dney Ave				
		Regina		SK	S4T 0Y		
Phone: Fax:	306-525-5 306-352-8	5871 3691	Email: Website:				
III. Technology	/ Description: sel Compost	ina					
iv. Product Pe	erformance o	or Benefits:					
Additior	nal informati	ion provide	t	Claim	s Substantiated	Signed Property Agreement	
v. Technology (a) Mini (b) Spac (c) Utili (d) Staf (e) Othe	/product req mum farm si. ce of farm: ties (energy f/training: er (please spe	juirements ze (in sow e input, mate ecify):	in terms of equiv.): rials, etc.):				
vi. Capital and	l operating co	osts:		- 1 -	A		
Size of	r Operation	(p	apital Cos er sow eq	sts uiv.)	Annual Ope	rating Costs	
(sow e 100	equiv.) Sow				(per sov	w equiv.)	
300	Sow						
600	Sow						
120	0 Sow						
Cost De	escription:						
vii. Special Ci	rcumstances	s that will a	ffect the e	conomic	or technical feasib	ility of the technology/product:	
viii. Stage of	development	:					
ix. If your tea technology?	chnology is a	t the pre-co	ommercial p)hase, w	hat further activit	ties are required to make this a comm	ercially viable
Details:	Res Sta	search ff	Engine Marke	ering ting	Testing Financial (e	Demonstration e.g. need for capital)	
x. Do vou hav	ve a business	plan for co	mmercializ	ina vour	technoloav?		
vi Have vouu	norformod a	nymarkot	rosoarch tr	n datarn	ning the feasibility (of the technology for livestock operat	ions?
		iy murikut	toglac:			or the technology for investors operat	101131
xII. current/	Planned Mari	keting Stra	tegies:				_
March 31, 1999	9		l	nventory	Questionnaire Res	sponses	Page 95 of 2

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

ii. Party responsible for promotion/distribution/developer of product:

Company	/:	BERCAN	I INC.			
Contact Name:		Allan J. McInnes				
Address	:	6645 Elm	n Road			
		Lantzville	9	BC	V0R 2H0	
Phone:	250-390	-3113	Email:			
Fax:	250-390	-3113	Website:			

iii. Technology Description:

Biotech Engineered Products Manufacturing; used for rapid fermentation removal of odor/sludge/solids, purifies waste water/destroys pathogens, by-products are macronutrient fertilizers/Natural gas with values of 950-1000 BTU free of H2S, water recovery available is almost potable.

iv. Product Performance or Benefits:

We have enclosed further written data that explains ammonia, Hydrogen sulphide gas removal, treating, toxic chemicals, fuel oils (gas, diesel, bunker, creosote, motor oils, petro chemicals, etc.). Note: H2S removal 48 hours after treating.

Additional information provided Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): Small farms 5 head, up to 20,000 head.

(b) Space of farm: Existing systems can be made to handle three times day waste.

(c) Utilities (energy input, materials, etc.): Covered systems, for natural gas recovery.

(d) Staff/training: Low training required after introduction of this technology.

(e) 0ther (please specify): Using existing waste containment in situ, these systems by lagoon, tank or other can have odour control with fertilizer recovery.

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs	
(sow equiv.) 100 Sow		(per sow equiv.)	
300 Sow			
600 Sow			
1200 Sow			
Cost Description:	We have enclosed a copy of the north Carolina Uni	v of the Marten Marietta Technologies demonstration don versity.	e by support

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Ambient temperature potential can cause fermentation slow downs, but will not stop fermentation, deep lagoon systems have not frozen over at minus 40 degrees F. fermentation generating higher temperatures continue during colder weather, warmer ambient temperatures increase fermentation activity over monthly applications of seed. Existing infrastructure can be used and retrofit can be applied to any system to develop marketing of by-products/end products for investment return.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology? Engineering

Research Staff

Testing Demonstration

Marketing Financial (e.g. need for capital)

Details: The research and development was completed and marketing has been on-going with the proven technology applied to waste management.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant renewable energy
- xiv. Value / Selling Price of by-products:

Fertilizer value shows 30% more crop yields in Australia, Natural gas energy shows 40% increase free of H2S, BTU value running from 950-1000 on energy per cubic ft. Organic fertilizer as an available replacement for chemicals, Renewable energy to operate farm and other internal combustion engines by fuel cell and carburetor conversions.

xv. Market research undertaken concerning by-products:

Practical applications of fertilizer benefit in Australia, China, Taiwan, etc., energy evaluation in the same countried, in BC, Canada, waste fish to fertilizer in wood waste for growing plants on farms.

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: Demonstration (in existing waste systems)

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

It must be demonstrated that animal waste is a viable product to be used for a return on investment to the producer, and pollution can controlled.

ii. Party responsible for promotion/distribution/developer of product:

Company: EcoChem			Biotech	Inc.
Contact Name: Wm. John			n Sanger	
Address:		CP Box 1	388	
		Hanna		AB
Phone:	403-854-	3617	Email:	jsanger@telusplanet.net
Fax:	403-854-	4186	Website:	
			Website:	http://www.ecochem.com

iii. Technology Description:

CPBA is a broad spectrum liquid, organic, highly concentrated, proprietary blend of selected natural Beneficial Microorganisms (BM), essential nuttients, and synergists formulated for odour abatement and manure management applications. CBPA is effective in aqueous or non aqueous facultative environments.

iv. Product Performance or Benefits:

- The benefits of utilizing CBPA as a waste management strategy include:
- Abrupt elimination of noxious odours
- Reduction in BOD and COD
- Reduction in pathogenic bacteria
- Reduction in volumet up to 40% (non aqueous environment)
- Hygenic disposal of wastes
- Reduction in overall sludge volume in clarifiers and treatment lagoons.
- Liquification and bioremediation of manure slurry

Additional information provided

Claims Substantiated

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): no minimum requirements
 - (b) Space of farm: ~ 38 cubic feet required to store materials necessary to maintain a 100 sow operation
 - (c) Utilities (energy input, materials, etc.): none required
 - (d) Staff/training: one hour presentation limited to product familiarization
 - (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	\$0.00	\$3.14 (product cost)
300 Sow	\$0.00	\$3.46
600 Sow	\$0.00	\$4.08
1200 Sow	\$0.00	\$4.40

Cost Description: Costs may vary depending upon management techniques, type of operation, building design, frequency of application, intensity of odour and the results required.

- vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: CBPA is easy to use, is cost effective, can be used without fear of malodor, and can be incorporated into any existing waste management system without additional capital expenditures.
- viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology? Engineering

Research	
Staff	

Testing Demonstration

Financial (e.g. need for capital) Marketing

Details: The next phase of our development project involves demonstrating the benefits and effectiveness of our technology to the marketplace. The matter of funding to support product rollout and marketing is currently being addressed.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales joint ventures with local companies
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant effluent / irrigation water
- xiv. Value / Selling Price of by-products: \$44.93 per acre for each inch of lagoon liquid. \$21.92 per acre for each ton of feed lot manure.
- xv. Market research undertaken concerning by-products:

Our research leads us to believe that potential markets for high quality, pathogen free, manure by-products are relatively undeveloped. In addition to agriculture, the potential markets include horticulture, silviculture, reclamation, and other evnironmental uses.

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests / efficacy tests demonstration of benefits and effectiveness

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Based on the results of eight years of research and development, collected results and accredited testimonies, we believe that CBPA has the competitive advantage necessary to build immediate market recognition as a safe, effective technology that can contribute to the movement toward self-regulation and voluntary compliance in matters associated with agriculture, waste management and the envrionment. We believe the environmental technology market is product driven, as opposed to market driven, and, once the benefits of CBPA are demonstrated to the market, acceptance will occur over a narrow time window.

i. Technology/Product Name: Polydex

ii. Party responsible for promotion/distribution/developer of product:

	i ui ty i copolisible io						
	Company:	Enviro-S	cience Laborat	ories, Inc.			
	Contact Name:	Timothy	Knight				
	Address:	A - 3425	2 industrial Wa	y			
		Abbotsfo	ord BC	V2S 7M6			
	Phone: 1-800 Fax: 604-8	-567-1191 50-5950	Email: timk Website: Website: http	@borak.com ://www.borak.	com		
iii.	Technology Descrip Used as both a responsible fo	tion: pit additive r the product	and a food add tion of gases, ir	litive (in hogs' n turn reslting	drinking w in significa	rater). Prevents the growth of bacteria t int odour reduction.	hat are
iv.	Product Performan	ce or Benefit	S:				
	Additional inform	mation provid	ed C	laims Substant	iated	Signed Property Agreement	
V.	Technology/product (a) Minimum far (b) Space of far (c) Utilities (ene (d) Staff/trainin (e) Other (please	requirement m size (in sow n: rgy input, mat g: e specify):	s in terms of: / equiv.): :erials, etc.):				
vi.	Capital and operatin	ig costs:					
	Size of Operat	ion	Capital Costs	Annu	ual Operat	ing Costs	
	(sow equiv.) 100 Sow	ſ	per sow equiv	.)	(per sow e	equiv.)	
	300 Sow						
	600 Sow						
	1200 Sow						
	Cost Descriptio	n:					

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
Datalla				

Details:

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

Company:	Internati	onal Ecologica	al Technolo	gies Inc.		
Contact Name	Scott Mo	offat				
Address:						
	North Ha	atley Q	С			
Phone: 819 Fax: 819 iii Technology Desci)-842-2494)-842-2902 rintion [.]	Email: Website:				
iv Product Perform	nance or Benefit	۶.				
Additional inf	formation provid	od	Claims Subs	tantiatod	Signed Property Agr	aamant
Additional ini	or mation provid	cu		lantiateu	Signed Troperty Agro	-ciliciit
(a) Minimum f (b) Space of f (c) Utilities (e (d) Staff/trai (e) Other (ple	act requirement arm size (in sov arm: nergy input, ma ning: ase specify):	v equiv.): terials, etc.):				
vi. Capital and opera	ating costs:					
Size of Ope	ration	Capital Cost	s A	nnual Opera	ating Costs	
(sow equiv 100 Sow	.)	per sow equi	V.)	(per sow	equiv.)	
300 Sow						
600 Sow						
1200 Sov	v					
Cost Descrip	tion:					
vii. Special Circums	stances that wil	affect the eco	nomic or tec	hnical feasibil	ity of the technology/produ	ct:
viii. Stage of develo	opment:					
ix. If your technolo	gy is at the pre-	commercial pha	ase, what fu	rther activitie	es are required to make this	s a commercially viable
Details:	Research Staff	Enginee Marketir	ring ⁻ ng I	Festing Financial (e.	Demonstration g. need for capital)	
x. Do you have a bu	siness plan for (commercializing	y your techn	ology?		
xi. Have you perfor	med anv marke	t research to d	etermine the	e feasibility of	the technology for livesto	:k operations?
xii. Current/Planne	ed Marketing St	rategies:				
March 31, 1999		Inv	entory Quest	ionnaire Resp	onses	Page 103 of 258

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

i. Technology/Product Name: Concrete Slurry Tank System

ii. Party responsible for promotion/distribution/developer of product:

Company: Con-Force		e Sturctur	es Limit	ed		
Contact Name:		Rudy Sirke				
Address:		301-1st Ave				
		Regina		SK	S4N 4Z1	
Phone: Fax:	306-543- 306-775-	2662 2340	Email: Website:			

iii. Technology Description:

Precast, prestressed, post-tensional concrete leak free storage of manure with agitation and pumping equipment

iv. Product Performance or Benefits:

Year round trouble free operation in e	extreme climate conditions.	Low surface area compared to lagoon.
Additional information provided	Claims Substantiated	Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.):

(b) Space of farm: diameter of tank

(c) Utilities (energy input, materials, etc.): power for agitation/pumping equipment

(d) Staff/training: operation of equipment

(e) Other (please specify): designated for all climatic conditions in Canada

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	0.6millGal = \$150 000	minimum
300 Sow	108millGal = \$324 000	minimum
600 Sow	3.6millGal = \$450 000	minimum
1200 Sow	7.2millGal = \$720 000	minimum

Cost Description: Number are based on 400 day storage

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Proven technology/successful track records/ technology transfer and development for Hog Manure Treatment and management

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capital)

Details:

x. Do you have a business plan for commercializing your technology?

March 31, 1999

Inventory Questionnaire Responses

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales regulators, industry
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: depends on size of storage and location
- xv. Market research undertaken concerning by-products: By industry
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: existing customers Con_Force track record

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Already accepted

Signed Property Agreement

ii. Party responsible for promotion/distribution/developer of product:

Company:		Dessau - Soprin			
Contact Name:		Camil Dutil			
Address:		1112, boul de la Rive Sud, bureau 210			
		St-Romuald		QC	G6W 5M6
Phone:	418-839-6447		Email:	cdutil@globetrotter.qc.ca	
Fax:	418-839-14419		Website:		

iii. Technology Description:

Aerobic bio-transformation to fertilizer & humus with effluent volume reduction. Unique feature is the mixing and oxygeneration of manure in the bioreactor to enhance bacteria growth. Continuous operation. Liquid portion is low in solids and can be treated for disposal into streams/rivers. Does not require solid/liquid separation; a complete treatment process. A concentrated, stabilized end product that conforms to environmental specifications in many countries.

iv. Product Performance or Benefits:

Pilot project at St.-Roch pork farm (330 animals), 10.3 cubic meters treated per day, 3750 cubic meters per year.

Additional information provided Claims Substantiated

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): 100 sow equivalent
 - (b) Space of farm: 1200 sq. ft. per 100 sows
 - (c) Utilities (energy input, materials, etc.): electricity only
 - (d) Staff/training: none needed
 - (e) Other (please specify): need minimal time to settle; best to use fresh, or as produced

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.) 100 Sow	(per sow equiv.)			
300 Sow				
600 Sow				
1200 Sow				
Cost Description:	Depends on type of farm therefore different needs.	and size. Feeder/farrow-finish have different types of manure		

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

- Ability to adapt existing infrastructure to a flush system (to collect manure as quickly as possible)
- higher energy costs
- increased BOD
- decrease of value of end products
- viii. Stage of development: Field Trials (product is exposed to real world operating conditions)
ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology? Engineering

Research Staff

Testing Demonstration Financial (e.g. need for capital)

Marketing Details: At final stages of engineering; arranging finances for commercialization currently.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced:
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Company		Meunerie	J.B. Dion	ne et fils Ltee		
Contact Name:		M. Jean-Marie Dionne				
Address:		1674 boul. Gaboury				
		Mont-Joli		QC		
Phone:	418-775-	7713	Email:			
Fax:	418-775-	9702	Website:			

iii. Technology Description:

Biological transformation via mixing and composting in a closed system (closed vessel composting). All environmental problems from the spreading of manure are eliminated.

iv. Product Performance or Benefits:

100% odour elimination; 100% elimination of nitrates & phosphorous from the liquid stream.

Additional information provided	Claims Substantiated	Signed Property Agreement
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v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): adaptable to all sizes

(b) Space of farm: 150 ft by 100 ft up to 300 ft by 300 ft for a big farm.

(c) Utilities (energy input, materials, etc.): plant fibres (sawdust, wood shavings, straw, pulp residues)

(d) Staff/training: tractor operator

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow	\$50,000	(per sow equiv.)
300 Sow		
600 Sow	\$250,000	
1200 Sow		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Marketability of compost is not fully known; need to study this. Also more studies on environmental benefits.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing Demonstration		
Staff	Marketing	Financial (e.	g. need for capital)	

Details: Fine tuning of technology; determination of best proportion of manure and coarse fibres.

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: technology transfer joint ventures with local companies
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products: \$15 - \$20 per cubic metre
- xv. Market research undertaken concerning by-products: yes
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: research

internal evaluation

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Convince appropriate government ministries that the technology is a complete solution to pollution problems associated with manure deposit. Applicable to existing or new farms - should be applied where disposal is a problem and in moist areas.

	5 1	•		• •		
	Company:	Engrais N	laturels McIn	ines		
	Contact Name:	James M	clnnes			
	Address:	971 LaSa	lle			
		St. Bruno	Q	С		
	Phone: 450-4 Fax: 450-2	41-6987 283-3834	Email: Website:			
iii. T	echnology Descrip Floating cover	otion: - (description	is in French))		
iv. P	roduct Performal 82% odour rec	nce or Benefits Juction .				
	Additional infor	mation provide	d	Claims Substantia	ted	Signed Property Agreement
V. 16	(a) Minimum far (b) Space of far (c) Utilities (ene (d) Staff/trainin (e) Other (pleas	r requirements rm size (in sow m: ergy input, mate ng: e specify):	in terms of: equiv.): erials, etc.):			
vi. C	apital and operati	ng costs:				
	Size of Opera	tion (Capital Cost	s Annua	al Operatin	g Costs
	(sow equiv.) 100 Sow	(P	none	(r	er sow eq	uiv.)
	300 Sow		"	\$	3.33 - 1600	m3
	600 Sow 1200 Sow		"			
	Cost Description	on:				
Vİİ.	Special Circumsta	ances that will a	affect the eco	nomic or technica	l feasibility (of the technology/product:
viii.	Stage of develop	ment: Field	Trials (produ	ct is exposed to	real world o	operating conditions)
ix. tecl	If your technology nnology?	is at the pre-c	ommercial pha	ase, what further	activities a	re required to make this a commercially viable
	55	Research	Enginee	ering Testi	ng D	emonstration
	Details:	Staff	Marketir	ng Finar	icial (e.g. r	need for capital)
x. C)o you have a busi	ness plan for co	ommercializing	g your technology	?	

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name: Addition of Silage (fish) to feed

ii. Party responsible for promotion/distribution/developer of product:

	• • •			• •				
Company:		Dept. of Forest Resources & Agri-Foods						
	Contact Name:	Rosalind Pound	Rosalind Pound					
	Address:	Provincial Agric Box 8700 St. Johns	ulture Blo NF	dg A1B 4J6				
	Phone: 709-729 Fax: 709-729	-2809 Email -0205 Webs	rpour ite:	nd@agric.dffa.go	v.nf.ca			
iii. 1	Technology Description Fish silage made fish offal waste.	n: from offal - by-pi	oducts of	f processing. By-	-product addition will reduce feed cost and utilize			
iv. I	Product Performance Work to substitute	or Benefits: e a portion of the	feed - "sa	avings"				
	Additional informa	tion provided	Cla	aims Substantiated	Signed Property Agreement			
v. T	echnology/product re (a) Minimum farm s (b) Space of farm:	equirements in ter size (in sow equiv.) acreage -	msof: : no.s	ows = 70				
	(c) Utilities (energy	/ input, materials,	etc.): m	inor equipment				
	(d) Staff/training: one on one with			nt staff				

- (e) Other (please specify):
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	70 sows = \$2200	\$850
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Utilize by-products ie. fish silage as a source of protein, fairly abundant in the area.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Resea	rch Engine	ering Testing	g Demonstration
Staff	Market	ting Financ	ial (e.g. need for capital)

Details: Further field trials - further confirmation of results being obtained.

x. Do you have a business plan for commercializing your technology?

March 31, 1999

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: no plan for commercial use.
- xiii. Marketable By-Products Produced: n/a
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $\ensuremath{\mathsf{n/a}}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: growth performance of the pigs cost savings

Additional research and extensive field demonstrations. Areas where fish by-products are abundant this approach is practical.

J 1				•	1		
Company	:						
Contact N	Name:	Michel Mo	orin				
Address:		936 Rg S	t-Philippe				
		St-Anseln	ne	QC			
Phone: Fax:	418-885	-4790	Email: Website:				
iii. Technology [Description	1:					
iv. Product Per 98% odd 50% red	formance our reduc luction in	or Benefits: tion solids and	liquids vo	lume			
Additiona	al informa	tion provide	d	Claims Su	ubstantiated	Signed Property Agreement	
v. Technology/ (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other	product re num farm s e of farm: es (energy /training: r (please sp	equirements size (in sow 7 input, mate pecify):	in terms (equiv.): erials, etc.))f: 100 sows):			
vi Canital and d	norating	costs					
Size of	Operatio	.0313. n (Capital Co	osts	Annual Opera	ating Costs	
<u> </u>	• • • •	(p	er sow e	quiv.)	,		
(sow ed 100 \$	quiv.) Sow				(per sow	equiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost Des	scription:						
vii. Special Cir	cumstance	es that will a	affect the	economic or	technical feasibil	lity of the technology/product:	
viii. Stage of d	evelopmen	It: Testir	ng of proto	otype			
ix. If your tech	hnology is a	at the pre-c	ommercial	phase, what	further activitie	es are required to make this a commercially via	able
technology?	Re	esearch	Engir	neering	Testing	Demonstration	
Details:	St	aff	Mark	eting	Financial (e.	.g. need for capital)	
x. Do you have	a busines	s plan for co	ommerciali	zing your tec	chnology?		
xi. Have you pe	erformed a	any market	research	to determine	the feasibility of	f the technology for livestock operations?	
					-		

March 31, 1999

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

April - Nov. 2000, the technology will be perfected and will be marketed commercially.

i. Technology/Product Name: Manure Spread Controller

ii. Party responsible for promotion/distribution/developer of product:

iii i ui ty i copolisio			n product.	
Company:	Innotag In	с.		
Contact Nam	Ie: Justin LaF	Rouche		
Address:	1681 Dei	L'Industrie		
	Beloeil	QC		
Phone: 45 Fax: 45	0-464-7427 0-464-0874	Email: justint@inr Website:	notag.com	
iii. Technology Desc	cription:			
Technology variable rat	to measure and es.	control the rate of sp	preading to field	s. Can be combined with GPS to apply at
iv. Product Perfor	mance or Benefits:			
Precise cor	trol of application	volume and spread	ing rates.	
Additional ir	formation provided	d Claims S	ubstantiated	Signed Property Agreement
(a) Minimum (b) Space of (c) Utilities ((d) Staff/tra (e) Other (pl	farm size (in sow e farm: energy input, mate aining: ease specify):	equiv.): none rials, etc.):		
vi. Capital and oper	ating costs:			
Size of Op	eration C	apital Costs	Annual Oper	ating Costs
(sow equi 100 Sov	(p) v.) v	er sow equiv.)	(per sow	/ equiv.)
300 Sov	V			
600 Sov	v			
1200 So	W			
Cost Descri	ption: Total c	ost of the controller -	+/- \$10,000	
vii. Special Circum	nstances that will a	ffect the economic or	technical feasibi	lity of the technology/product:
viii. Stage of deve	lopment: Comm	nercial launch has be	en carried out	
ix. If your technol technology?	ogy is at the pre-co	ommercial phase, wha	t further activiti	es are required to make this a commercially viable
	Research	Engineering	Testing	Demonstration
Details: n/a	Staff	Marketing	Financial (e	.g. need for capital)
x. Do you have a b	usiness plan for co	mmercializing your te	chnology?	

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: periodic measure of calculated volumes on equipment vs. amount loaded at farms

Demonstration. This technology was developed in Europe, where it is mainly used by manure treatment companies.

J I I				
Company:	Biomax Inc			
Contact Name:	Carl Genois			
Address:	764 St-Joseph Est Bur 124			
		QC		
Phone: 418-529 Fax: 418-525	-2585 Email: -5413 Website:	general@bior	nax.qc.ca	
Technology Description Composting using for flush water.	n: g forced air. Compo	sts in 6-8 weel	ks with minimal en	nissions to the air. Liquids are recycled
Product Performance Demonstration sta	or Benefits: arting March 1999	Olaima Cuba	te at a te	Circuid Descender Agree and
Additional information	tion provided	CIAIMS SUDS	stantiated	Signed Property Agreement
Technology/product re (a) Minimum farm s	equirements in terms (size (in sow equiv.):	of: no minimum		
(b) Space of farm:	depends on amoun	t of manure pr	oduced	
(c) Utilities (energy	y input, materials, etc.): coarse car	bon / fibre and ele	ectricity
(d) Staff/training:	farm workers			
(e) Other (please sp	pecify):			
Capital and operating of	costs:			
Size of Operation	n Capital Co	osts A	Annual Operating	Costs
(sow equiv.) 100 Sow	(per sow e	quiv.)	(per sow equ	iv.)
300 Sow				
600 Sow				
1200 Sow				
	Company: Contact Name: Address: Phone: 418-529 Fax: 418-525 Technology Description Composting using for flush water. Product Performance Demonstration st Additional informa Technology/product re (a) Minimum farm s (b) Space of farm: (c) Utilities (energy (d) Staff/training: (e) Other (please s) Capital and operating of Size of Operatio (sow equiv.) 100 Sow 300 Sow 600 Sow	Company:Biomax IncContact Name:Carl GenoisAddress:764 St-Joseph Est Bur 124Phone:418-529-2585Fax:418-525-5413Vebsite:Technology Description: Composting using forced air.Composting using forced air.Compo for flush water.Product Performance or Benefits: Demonstration starting March 1999 Additional information providedTechnology/product requirements in terms of (a) Minimum farm size (in sow equiv.): (b) Space of farm: (c) Utilities (energy input, materials, etc.); (d) Staff/training: farm workers (e) Other (please specify):Capital and operating costs: Size of OperationCapital Capital Capital Capital Capital Compo (per sow e (sow equiv.)) 100 Sow 300 SowSow300 Sow 600 Sow1200 Sow1200 Sow	Company: Biomax Inc Contact Name: Carl Genois Address: 764 St-Joseph Est Bur 124 QC Phone: 418-529-2585 Email: general@bior Fax: 418-525-5413 Website: Technology Description: Composting using forced air. Composts in 6-8 weel for flush water. Product Performance or Benefits: Demonstration starting March 1999 Additional information provided Claims Subs Technology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): no minimum (b) Space of farm: depends on amount of manure pro (c) Utilities (energy input, materials, etc.): coarse car (d) Staff/training: farm workers (e) Other (please specify): Capital and operating costs: Size of Operation Goo Sow Goo Sow Capital Costs Capital Costs Capi	Company: Biomax Inc Contact Name: Carl Genois Address: 764 St-Joseph Est Bur 124 QC Phone: 418-529-2585 Email: Fax: 418-525-5413 Website: Technology Description: Composting using forced air. Composts in 6-8 weeks with minimal enforflush water. Product Performance or Benefits: Demonstration starting March 1999 Additional information provided Claims Substantiated Technology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): no minimum (b) Space of farm: depends on amount of manure produced (c) Utilities (energy input, materials, etc.): coarse carbon / fibre and elected (d) Staff/training: farm workers (e) Other (please specify): Capital and operating costs: Size of Operation Capital Costs Annual Operating (per sow equiv.) (sow equiv.) (per sow equiv.) (per sow equiv.) (sow equiv.) (per sow equiv.) (per sow equiv.)

Cost Description: currently being evaluated.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Availability and cost of coarse fibre carbon. Use of personnel and equipment already on the farm and ability to sell the compost are contributors to decreasing the overall cost of manure treatment.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

55	Research	Engineering	Engineering Testing Demonst		stration
Staff		Marketing	Financial (e.g. need for capital)		
Dotaile: -			1 11		

DetailS: Technical, environmental, and economic evaluations are required concerning the ability of the technology.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: compost - BNQ-rated "AA"
- xiv. Value / Selling Price of by-products: \$15 - \$20 per cubic metre selling price.
- xv. Market research undertaken concerning by-products: yes, study done by l'Association Quebecoise des Industriels des Compostages
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests research

Discuss with MAPAO & MEF the possibility of supporting a demonstration under the programme to decrease the effects of manure. The technology is also useable with any type of solid manure, municipal wastes, agricultural wastes, industrial wastes.

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

5 1	1	1 1	
Company:	WIC (1993) Inc.		
Contact Name:	Martial Gagne		
Address:	784 Principale		
	Wickham	QC J0C 1S0	
Phone: 819-39 Fax: 819-39	8-6822 Email: 8-5227 Webs	info@wiciceal.com ite:	
chnology Descripti - Fertilizer value - Economical - Reduction in o - Reduction in p	011: dours ollution		
oduct Performanc	e or Benefits:		
Additional inform	nation provided	Claims Substantiated	Signed Property Agreement
chnology/product (a) Minimum farm	requirements in terr n size (in sow equiv.)	ns of: : n/a	
(b) Space of farm(c) Utilities (energiant)(d) Staff/training	: gy input, materials, e ; one operator	etc.):	
(e) Other (please	specify):		
pital and operating	j costs:		
	Company: Contact Name: Address: Phone: 819-39 Fax: 819-39 Fax: 819-39 chnology Descripti - Fertilizer value - Economical - Reduction in o - Reduction in o - Reduction in p oduct Performanc Additional inform chnology/product (a) Minimum farm (b) Space of farm (c) Utilities (energed) (d) Staff/training (e) Other (please	Company: WIC (1993) Inc. Contact Name: Martial Gagne Address: 784 Principale Wickham Phone: 819-398-6822 Email: Fax: 819-398-5227 Webs chnology Description: - Fertilizer value - Economical - Reduction in odours - Reduction in pollution oduct Performance or Benefits: Additional information provided chnology/product requirements in terr (a) Minimum farm size (in sow equiv.) (b) Space of farm: (c) Utilities (energy input, materials, e (d) Staff/training: one operator (e) Other (please specify): pital and operating costs:	Company: WIC (1993) Inc. Contact Name: Martial Gagne Address: 784 Principale Wickham QC JOC 1SO Phone: 819-398-6822 Email: info@wiciceal.com Fax: 819-398-5227 Website: chnology Description: - Fertilizer value - - chnology Description: - Fertilizer value - - - - Economical - - - - Reduction in odours - - - - Reduction in pollution - - - oduct Performance or Benefits: - - - Additional information provided Claims Substantiated - :hnology/product requirements in terms of: - - - (a) Minimum farm size (in sow equiv.): n/a - - - (b) Space of farm: - - - - - (c) Utilities (energy input, materials, etc.): - - - - - (d) Staff/training: one operator - - -

Size of OperationCapital Costs
(per sow equiv.)Annual Operating Costs
(per sow equiv.)(sow equiv.)(per sow equiv.)100 Sowrampe = \$10,000300 Sowrampe = \$10,000600 Sowrampe = \$10,0001200 Sowrampe = \$10,000

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

vili. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

-	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
ails				

Details:

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced:
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

Company		E.P.A. Ca	anada Lte	е	
Contact I	Name:	Vincent B	Boulet		
Address:		4 Tache Est - 105			
		Montmag	my	PQ	G5V 1B7
Phone:	418-248-	-2880	Email:	noram	@quebectel.com
Fax:	418-248-	-2067	Website:		

iii. Technology Description:

Light lagoon cover - 115 ft diameter. Built of cable, PVC, and fiberglass. Stops all precipitation from falling into the lagoon and thus reduces the volume by 18-20%. Economical - 55% cheaper than a conventional roof.

iv. Product Performance or Benefits:

Additional information provided Claims Substantiated Signe	d Property Agreement
--	----------------------

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): none
 - (b) Space of farm: none
 - (c) Utilities (energy input, materials, etc.): none
 - (d) Staff/training: none
 - (e) Other (please specify): circular reservoir in good condition
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.)		(per sow equiv.)		
100 Sow	\$3.60/ sq.ft. of reservoir	0		
300 Sow	\$3.20 /sq.ft.	0		
600 Sow	\$2.85 /sq.ft.	0		
1200 Sow	\$2.35 / sq.ft.	0		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

- Winds over 120 km/h may affect the structure.
- Structure is adaptable to all lagoons
- Economic feasibility effected by precipitation accumulation. The more precipitation a region gets, the more economically attractive the product will be.
- vili. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g	I. need for capital)

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products:
 - no
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests engineering analysis internal monitoring

Demonstration under the MAPAQ programme to assist with manure management technology implementation.

i. Technology/Product Name: PhytoBact

ii. Party responsible for promotion/distribution/developer of product:

Company		J & Y M. L	_tee		
Contact N	lame:				
Address:		30 rue Me	unesin #9), B.P.	642
		Granby		PQ	J2G 8W7
Phone:	450-375-	6582	Email:		
Fax:	540-375-	4788	Website:		

iii. Technology Description:

Mix solid manure portion with carbon to produce compost. Liquid portion is purified in a digestor. An agreement with Les Consultants RSA will allow this liquid to be polished (further cleaned) to acceptable quality.

iv. Product Performance or Benefits:

Odours are pretty much eliminated in both processes. Cost is low. The process removes 70-75% of organic content in winter and 85-95% in summer. Maximum BOD treatable is 1000 mg/l.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 100 - 120 sows

(b) Space of farm: less than lagoon surface area

(c) Utilities (energy input, materials, etc.): carbon sources; minimal electricity

(d) Staff/training: training of users is sufficient

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	\$750	\$305
300 Sow	\$300	\$164
600 Sow	\$208	\$73
1200 Sow	\$200	\$68.50

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Lagoons and pumps are no longer needed except in cases of system shutdown. Odour and risk of groundwater contamination are eliminated. It is a biological system, therefore energy needs are limited to a few small pumps. This technology could help make manure management an economical activity.

vili. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

05	Research	Engineering	Testing	Demonstration	
	Staff	Marketing	Financial (e.g. need for capital)	
Details:					
March 31, 1999		Inventory C	uestionnaire Res	ponses	Page 125 of 258

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: demonstrations informal sessions
- xiii. Marketable By-Products Produced: compost fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: \$10 - \$40 per cubic metre.
- xv. Market research undertaken concerning by-products: No market study has been done, but we know that producers seek such a solution.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Continue tests and obtain water analyses and analysis of compost quality. This will likely be done by Les Consultants RSA. The biological technology requires no source of external energy, making it very economical to use. Most pork producers are also involved in crop production and need fertilizers. This technology will thus be very useful.

	5 1	•		•	•			
	Company:	Centre de	Centre des technologies du gaz naturel (CTGN)					
	Contact Name:	Pierre Ca	Pierre Camirand					
	Address:	1350 rue	Nobel					
		Boucherv	ville	QC	J4B 5H3			
	Phone: 450-449 Fax: 150-449	9-4774 9-4994	Email: Website:	ctgn@	cedep.com			
iii. T	echnology Descriptic Thermal treatme collected and ca powder form.	nt of manur In be reuse	e. The inte d for fertiliz	egrated er or r	d unit involves a drier ar e-feeding. A zero disch	nd an incinerator for vapours. Dry solids are arge technology. Solids are compacted in		
iv. F	Product Performance Dehydration, pas Additional informa	e or Benefits steurization ation provide	: and odour ed	elimin Clair	ation is achieved. ns Substantiated	Signed Property Agreement		
v. T	echnology/product r (a) Minimum farm	equirements size (in sow	s in terms of equiv.):	f: very la	rge or on a factory basi	S		
	(b) Space of farm: (c) Utilities (energ	y input, mate	erials, etc.):	gas	, electricity, and manure	9		
	(d) Staff/training: (e) Other (please s	specify):						

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:	see attached chart.	

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Very big farm or as a centralized regional factory. It is economical due to marketability of by-products. Diversified markets/uses of by-products is important to assure economic viability.

viii. Stage of development: Testing of prototype

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant re-feed value
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests pilot unit

The cost of treatment must be acceptable to producers. This technology must be coupled with a pre-treatment solid-liquid separation. A consortium of Gaz Metropolitain & Dessau-Sopuim is working to develop a complete system using the PROGEST & the BIO-FERT technologies.

Signed Property Agreement

ii. Party responsible for promotion/distribution/developer of product:

Company		Energie-Bio G.V. Inc						
Contact I	Name:	Gillies Vilandre o.a.q.						
Address:		1343 avenue de la Montagne Ouest						
		Val-Belair		QC	G3K 1W2			
Phone: 418-847-0241			Email:					
Fax: 418-843-8914		8914	Website:					

iii. Technology Description:

A combination of 3 technologies. 1) Reactor: aerobic digestion and pasteurization. 2) Purifier: removal of gases in chemical solutions to remove odours. 3) Separator: filtration of solid/liquid for compost and liquid filtered for irrigation. Decrease in volumes for spreading as liquids removed. The process is a contribution to odour management, environmental protection, and improved social acceptance of hog operations.

iv. Product Performance or Benefits:

Deodorization: gases react with chemical solutions to remove offensive odours. Last tests done by Institut Technologique Agricole indicates the fertilizer value of the liquid end product and the increased value of composted solids as fertilizer.

Additional information provided Claims Substantiated

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): no restrictions

(b) Space of farm: proportional to daily manure treatment needs

(c) Utilities (energy input, materials, etc.): Iow cost. 1 only

(d) Staff/training: no specialized skills required.

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:	see attached data	

- vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Resting time of manure in an aerobic state below the floor can decrease operating costs. Climatic conditions not a problem, as installations is indoors. Space = 500 sq ft for 1000 pigs.
- viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
----------	-------------	---------	---------------

Financial (e.g. need for capital)

Details: Negotiating our first manufacturing/distribution agreement. Distributors license will be granted to an existing distribution of suppliers to pork producers.

x. Do you have a business plan for commercializing your technology?

Marketing

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers

promotional material

- xiii. Marketable By-Products Produced:
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $n/{\rm a}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests pilot scale

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Publicity to pork producers, and information disseminators to the pork industry. After marketing to Quebec, New Brunswick and Ontario, we will proceed to expand into the rest of Canada.

i. Technology/Product Name: Biooxyblok

ii. Party responsible for promotion/distribution/developer of product:

Company		Julien, Le	mpicki et	associe	es		
Contact N	lame:	Marcel Ju	Marcel Julien				
Address:		8947 rue Maritain					
		St. Leona	rd	QC	J1H 4A7		
Phone: 514-328-		9395	Email:	julien@	contact.net		
Fax:	514-328-	9572	Website:				

iii. Technology Description:

Biooxyblok has a two-stage activated sludge process with aerobic - anaerobic sludge digestion and contaminants mineralization. The system consists in sewage displacement, as well as sediments ventilation and circulation, with oxygen level and activated sludge concentration control. The operating process is one of successive motions in the bioabsorption, biostabilization and settling chambers, which are separated by vertical stationary screens. Turbine aerators suspended on the rotary bridge guarantee the level of oxygen. The separation by a concrete cylinder wall permits different biological conditions in each chamber.

iv. Product Performance or Benefits:

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

- (a) Minimum farm size (in sow equiv.): 1000 sows and above
- (b) Space of farm: 22 m diameter
- (c) Utilities (energy input, materials, etc.): 1.4 kWh/cubic metre treated (without adding chemicals)
- (d) Staff/training: automatic system
- (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:	To be determined in a resource operating costs (per sow	search project. 8000 sows: \$80 - \$114 capital set up and \$2.50/yr equiv.)
vii. Special Circumstances Stabilized manure.	that will affect the economic Complete digesting; can ha	or technical feasibility of the technology/product: andle many trucks full of lagoon contents.

viii. Stage of development: Testing of prototype

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

F	Research	Engineering	Testing	Demonstration

- Details:
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced: compost (after drying)
- xiv. Value / Selling Price of by-products: to be determined
- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: research & development monitoring program ongoing

Construction of a demonstration pilot unit an a budget for fine tuning of the process. We are authorized to fabricate all equipment in Canada. We believe that our process will be appropriate and valued.

	5 .	•				•	•						
	Company	1:	PSVC Inc	;									
	Contact I	Name:	Dr. Ted V	anLuven									
	Address	:	550 Unive	ersity Ave									
			Charlotte	town	PE	C1A	4P3						
	Phone: Fax:	902-628 902-566	-4356 -0823	Email: Website:	tvanlu	nen@	vpei.ca						
iii. Te	echnology l	Descriptior	ו:										
	Manure	managen	nent techni	ques in lie	quid an	d solid	d composi	ing syst	ems.				
IV. P	roduct Per	Tormance	or Benefits					_		_			
	Additiona	al informa ⁻	tion provide	d	Clai	ms Sut	ostantiated		Signed Pro	operty Ag	reement		
v. Te	echnology/ (a) Minim (b) Space (c) Utiliti (d) Staff (e) Other apital and (Size of (sow eq 100 \$ 300 \$ 300 \$	product re hum farm s e of farm: es (energy /training: /traing:/training: /traing:/training:/training:/training:/training	equirements size (in sow 5000 sq. f r input, mate minimal pecify): costs: n (p	in terms (equiv.): t. of land a erials, etc. Capital Co er sow e	of: none area): stra osts quiv.)	aw/sav	vdust Annual ((per)peratin sow eq	ıg Costs uiv.)				
	Cost Do	corintion	450		0/		(0000/			- 4: 4)	
			150 SC	ws: \$330	U/SOW 6	equiv.	(capital c	usis); ֆ.	3000/sow e	quiv. (ani	nual opera	ating costs)	
VII.	Special Cir Building markete	cumstance design al ed.	es that will a literations w	vould be r	econom equired	IC OF to I for th	echnical fe le deep be	asibility (edded co	of the techno omposting s	ology/proc system. ∃	JUCT: The comp	ost is easily	,
Vİİİ.	Stage of d	levelopmen	It: Testir	ng of proto	otype								
ix. I tech	f your tecl nnology?	hnology is a	at the pre-c	ommercia	l phase,	what f	further ac	tivities a	re required t	to make th	nis a comm	ercially viab	le
	55	Re	esearch	Engi	neering	3	Testing	D	emonstrat	ion			
	Details:	Sta	art	wark	eting		Financia	aı (e.g. r	ieed for ca	pital)			
x. D	lo you have	e a busines:	s plan for co	ommercial	izing you	ur tech	nology?						
										~ II ·			

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: make available to pork industry free of charge
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products: \$100/tonne ?
- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: Comparison to existing liquid technologies

Willingness by pork industry to undertake different management techniques in order to use the new system.

	0					I I						
	Company	l'. Namo:	Diekend	1								
	Contact	vame:	Richard N	lassicotte	•							
	Address		407 Beau	Idoin			~-					
	Dhonoi	450 750	Joliette	Fmail	QC	J6E 60	. 57					
	Phone: Fax:	450-756 450-756	-8415 -8415	Website:	enviro	@mega	com.net					
iii. Te	echnology l This pro agent ol industry	Description cess aims otained ha	ו: s at reducir as potential	ng volume I in agricu	of mar lture pc	nure whi pultry an	le obtainir d used in l	ng a ba large q	ctericide ager juantities. Als	it. Anaer o potentia	obic proce al in pharm	ss. The aceutical
iv. Pi	roduct Per	formance	or Benefits:	:								
	Additiona	al informat	tion provide	d	Clair	ns Subst	antiated		Signed Proper	ty Agreer	ment	
v. Te	chnology/ (a) Minim (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: es (energy /training: ⁻ (please sp	equirements size (in sow 7 input, mate pecify):	in terms (equiv.): erials, etc.)	of:):							
vi. Ca	apital and o	operating o	costs:									
	Size of	Operatio	n (Capital Co	osts	Α	nnual Ope	erating	g Costs			
	(sow e 100 \$	quiv.) Sow	(þ		quiv.)		(per so	w equ	iv.)			
	300 \$	Sow										
	600 \$	Sow										
	1200	Sow										
	Cost Des	scription:										
vii. S	Special Cir Because	cumstance e bacteric	es that will a ide agent is	affect the s a by-pro	economi duct of	ic or tecl process	nnical feasi s, adds val	bility of lue to a	f the technology anaerobic prod	y/product cess.	:	
viii.	Stage of d	levelopmen	It: Conce	ept (basic	resear	ch still n	ecessary)					
ix. It	f your tecl	hnology is a	at the pre-c	ommercial	phase,	what fur	ther activi	ties ar	e required to m	ake this a	commercia	ally viable
1001	inology i	Re Sta	esearch aff	Engir Mark	neering eting	ј Т F	esting inancial (De e.g. ne	emonstration eed for capita	al)		
	Details:											

x. Do you have a business plan for commercializing your technology?

March 31, 1999

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: technology transfer
- xiii. Marketable By-Products Produced: bactericide agent
- xiv. Value / Selling Price of by-products: TBA
- xv. Market research undertaken concerning by-products: preliminary
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: testing protocol

Treatment installations near producers. Technology will allow producers to reduce manure volume by 60% and by product could lower infections in poultry.

iii i ui ty i osponsi				100000		
Company:	Strat	tech				
Contact Na	ime: Stev	en Blaney				
Address:	144	Du Boiset				
	Sain	t-Etienne-de-La	QC			
Phone: ∠ Fax: ∠	418-831-6300 418-831-2636	Email: s Website:	stratech@me	dom.qc.ca		
iii. Technology De	scription:					
iv. Product Perfo	ormance or Ber	nefits:				
Additional	information pr	rovided	Claims Subs	stantiated	Signed Property Agreement	t
(a) Minimu (b) Space o (c) Utilities (d) Staff/t (e) Other (m farm size (in of farm: s (energy input, raining: please specify)	sow equiv.): , materials, etc.): ::				
vi. Capital and op	erating costs:	Conital Co		Annual Onar	ating Costs	
5120 01 0	peration	(per sow eq	uiv.)		ating Costs	
sow equ) 100 Sc	uiv.) ow			(per sow	equiv.)	
300 So	w					
600 Sc	w					
1200 S	Sow					
Cost Desc	ription:					
vii. Special Circu	imstances that	: will affect the e	conomic or te	chnical feasibil	ity of the technology/product:	
viii. Stage of dev	velopment:					
ix. If your techn	ology is at the	pre-commercial p	hase, what fu	irther activitie	es are required to make this a con	nmercially viable
Details:	Researd Staff	ch Engine Marke	eering ting	Testing Financial (e.	Demonstration g. need for capital)	
x. Do you have a	business plan	for commercializ	ing your techr	nology?		
xi. Have you per	formed any ma	arket research to	determine th	ne feasibility of	f the technology for livestock oper	rations?
xii. Current/Pla	nned Marketing	g Strategies:		,		
March 31, 1999		li	nventory Ques	tionnaire Resp	onses	Page 137 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

J 1	1		1	1		
Company:	Consun	nat Inc., Expe	erts Conse	eils		
Contact Nai	ne: Jean-De	enis Major				
Address:	4865, b	lvd Laurier (R	te 116)			
	St. Hya	cinthe	QC J2	S 3V4		
Phone: 4	50-773-6155	Email: Wahaita				
Fax: 4	50-773-3373	website:				
in Draduat Darfa	rmanaa ar Danafi	to.				
IV. Product Perio		15:				A
Additional i	nformation provi	ded	Claims Si	ubstantiated	Signed Propert	y Agreement
v. recinitiogy/pro (a) Minimun (b) Space of (c) Utilities (d) Staff/tr (e) Other (p	n farm size (in sov f farm: (energy input, ma raining: lease specify):	v equiv.): terials, etc.):				
vi. Capital and ope	erating costs:					
Size of Op	peration	Capital Cos	ts	Annual Op	erating Costs	
(sow equ 100 So	iv.) w	(per sow equ	ш v.)	(per s	ow equiv.)	
300 So	w					
600 So	w					
1200 S	ow					
Cost Descr	iption:					
vii. Special Circu	mstances that wi	ll affect the eq	conomic or	technical feas	sibility of the technology/	product:
viii. Stage of dev	elopment:					
ix. If your techno technology?	ology is at the pre	-commercial p	hase, what	t further activ	vities are required to ma	<pre>ke this a commercially viable</pre>
teennology.	Research	Engine	ering	Testing	Demonstration	
Details:	Staff	Market	ing	Financial	(e.g. need for capital)	
x. Do you have a	business plan for	commercializi	ng your te	chnology?		
xi. Have you perf	formed any marke	et research to	determine	e the feasibility	y of the technology for liv	vestock operations?
xii. Current/Plan	ned Marketing St	rategies:		-	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
March 31, 1999		Ir	ventory Q	uestionnaire Re	esponses	Page 139 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Compar	iy:	R.Viens Ir	IC.					
Contact	Name:	Philippe E	edard					
Addres	S:							
			C	9C				
Phone: Fax:	450-378-	9891	Email: Website:					
iii. Technology	Description	:						
iv. Product Pe	erformance	or Benefits:						
Addition	nal informat	ion provide	t	Claims Sub	stantiated		Signed Property Agreemer	ıt
v. Technology (a) Mini (b) Spac (c) Utili (d) Staf (e) Othe	/product ree mum farm s ce of farm: ties (energy f/training: er (please sp	quirements ize (in sow (input, mate ecify):	in terms of: equiv.): rials, etc.):					
vi. Capital and	l operating c	osts:						
Size o	f Operatior	n C a)	apital Cost er sow equ	s iv.)	Annual Ope	rating	Costs	
(sow) 100	equiv.) Sow	U-		,	(per sov	w equiv	v.)	
300	Sow							
600	Sow							
120	0 Sow							
Cost D vii Special Ci	escription: rcumstance	s that will a	ffect the ec	nomic or te	chnical feasih	vility of	the technology/product:	
	dovolonmon	5 that will t				Jiirty Of	the teenhology/product.	
ix. If your te	chnology is a	it the pre-co	ommercial ph	ase, what f	urther activit	ies are	required to make this a co	mmercially viable
technology?	Re	search	Engine	ering	Testing	Der	monstration	
Details:	Sta	aff	Marketi	ng	Financial (e	e.g. ne	ed for capital)	
x. Do you hav	ve a business	; plan for co	mmercializin	g your tech	nology?			
xi. Have you	performed a	ny market	research to	determine t	he feasibility (of the te	echnology for livestock ope	erations?
, xii. Current/	Planned Mar	, keting Stra	tegies:		,			
March 31, 199	9	-	וח	ventory Que	stionnaire Res	ponses		Page 141 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

Company					
Company.	Le Club A	Le Club Agroenvironmental Argenteuil			
Contact Name:	Phil Lavoi	Phil Lavoie			
Address:	505 rue Bethany, bureau 400				
Phone: Fax:	Lachutes	QC Email: Website:	J8H 4A6		
iii. Technology Descri	ption:				
iv. Product Performa	nce or Benefits:				
Additional information provided		d Cla	aims Substantiated	Signed Property Agreement	
(a) Minimum fa (b) Space of far (c) Utilities (en (d) Staff/traini (e) Other (pleas	rm size (in sow rm: ergy input, mate ing: se specify):	equiv.): erials, etc.):			
vi. Capital and operat	ing costs:	anital Costs	Annual Oper	ating Costs	
Size of Operation		(per sow equiv.)			
(sow equiv.) 100 Sow		(per sow equiv.)			
300 Sow					
600 Sow					
1200 Sow					
Cost Descripti	on:				
vii. Special Circumst	ances that will a	affect the econor	mic or technical feasibil	ity of the technology/product:	
viii. Stage of develop	ment:				
ix. If your technolog	y is at the pre-commercial phase, what further activities are required to make this a commercially viable				
technology :	Research Staff	Engineerir Marketing	ng Testing Financial (e.	Demonstration g. need for capital)	
Details:	otan	manoting	i manolai (o.	gi nood for ouphaly	
x. Do you have a bus	iness plan for co	mmercializing y	our technology?		
xi. Have you perforn	ned any market	research to dete	ermine the feasibility of	the technology for livestock operations?	
xii Current/Planned	Marketing Stra	itenies [.]	, ,		
	mai no ting 5ti t	itogios.			

March 31, 1999
xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name: Anaerobic Digestion

ii. Party responsible for promotion/distribution/developer of product:

	J 1 1		1 1				
	Company:	GML Consultants					
	Contact Name:	Guy-Michel Lanth	nier				
	Address:	6987-A de Bordea	aux				
		Montreal	QC H2E 2M2				
	Phone: 514-728- Fax: 514-728-	7263 Email: 8691 Website	gmlanthi@francomedia.qc.ca				
iii.	Technology Description	:					
	Natural Anaerobic	Digestion. End p	roduct has no odour and can be s	old as an amendment.			
İV.	Product Performance	or Benefits:					
	R & D in process	; 100% odour redu	ction				
	Additional informat	tion provided	Claims Substantiated	Signed Property Agreement			
V.	Technology/product re	quirements in terms	s of:				
	(a) Minimum farm size (in sow equiv.): 5 sow equivalents						
	(b) Space of farm: 12 sq. metres minimum						
	(c) Utilities (energy	input, materials, etc	C.): none				
	(d) Staff/training:	none specific					

(e) Other (please specify): simple technology

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	\$30,000 total	\$5000 before income
300 Sow	\$50,000	\$5000 before income
600 Sow	\$75,000	\$5000 before income
1200 Sow	\$100,000	\$5000 before income

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Process longer during winter. Easy to install on site. Production of Energy.

viii. Stage of development: Testing of prototype

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g	. need for capital)

Details:

 $\mathbf{x}.$ Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: partnership with producers with profit sharing
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products: to be done
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: pilot units (field tests)

Natural technology. Need to convince producers to have environmentally sound production

Company:	Benoit e	et Associes			
Contact Na	ame: Fernan	d W. Benoit			
Address:	270 St-	Georges			
	La Prai	ie QC	J5R 2M5		
Phone: A Fax: A	450-659-5271 450-659-5271	Email: richre Website:	id@total.net		
iii. Technology De (informati	escription: on provided in Fr	ench)			
iv. Product Perf	ormance or Benefi	ts:			
Additional	information provi	ded Cla	ims Substantiated	Signed Property Agreement	
v. Technology/pr (a) Minimu (b) Space ((c) Utilitie: (d) Staff/t (e) Other (roduct requiremen im farm size (in so of farm: s (energy input, ma training: (please specify):	ts in terms of: <i>v</i> equiv.): terials, etc.):			
vi. Capital and op	perating costs:	Capital Casta	Annual One	rating Costs	
5120 01 0	peration	(per sow equiv.)	Annual Oper	ating costs	
sow eq) 100 Se	uiv.) ow		(per sov	v equiv.)	
300 S	ow				
600 S	ow				
1200 \$	Sow				
Cost Desc	cription:				
vii. Special Circ	umstances that wi	ll affect the econor	nic or technical feasib	ility of the technology/product:	
viii. Stage of de	velopment:				
ix. If your techr technology?	nology is at the pre	-commercial phase	, what further activit	ies are required to make this a com	nercially viable
Details:	Research Staff	Engineerin Marketing	g Testing Financial (e	Demonstration .g. need for capital)	
x. Do you have a	a business plan for	commercializing yo	our technology?		
xi. Have you per	formed any marke	et research to dete	ermine the feasibility o	f the technology for livestock opera	ations?
xii. Current/Pla	nned Marketing St	rategies:			
March 31, 1999		Invent	ory Questionnaire Res	oonses	Page 147 of 2

Page 147 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name: Low temperature anaerobic treatment

ii. Party responsible for promotion/distribution/developer of product:

Company: Bioter			Systems Ir	nc.	
Contact N	lame:	Gerard Laganiere			
Address:		370, boul, Industriel			
Sh		Sherbrook	ke	QC	J1L 1X8
Phone:	819-566-	8855	Email:	glagani	ere@smnetcom.com
Fax: 819-566-0224		Website:			

iii. Technology Description:

Treatment uses biological anaerobic reactors at low temperature. Addition of conditioned bacteria allows treatment of manure in 10 days. Manure is then stabilized and odourless. Solids are reduced by 50%. 70% of phosphorous is stabilized in the solid portion which can be transported economically. Biogas production can represent an important value.

iv. Product Performance or Benefits:

50% solid reduction, 70% of phosphorous is captured in the solid phase. Biogas production going up to energy self-sufficiency.

Additional information provided Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): Fits all size

(b) Space of farm: Depends on size

(c) Utilities (energy input, materials, etc.): 2 reactors, one pumping station, one biogas generator

(d) Staff/training: Producer can operate normally

(e) Other (please specify): Process uses existing installation

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:		

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

Production of electricitly with biogas will generate revenues.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

5	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e	e.g. need for capital)

DetailS: Operation of prototype in field conditions on an average farm (3600 hogs).

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers technical services for start-up and maintenance
- xiii. Marketable By-Products Produced:
- xiv. Value / Selling Price of by-products: depends on size
- xv. Market research undertaken concerning by-products: For by-products or other type of effluents.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: evaluation protocols in normal operation

The prototype must be followed by a group of producers in order to get a performance evaluation. The technology fits 80% of farms that have access to land to spread manure that is stabilized. Treatment does not allow effluent discharge in the environment.

i. Technology/Product Name: Liquid Manure Core Sampling Device

Signed Property Agreement

ii. Party responsible for promotion/distribution/developer of product:

Company	:	Agribrands Purina Canada				
Contact N	lame:	Greg Simpson				
Address:		404 Main Street				
		Woodstock		ON	N4S 7X5	
Phone: 519-539-8		8561	Email:	greg@a	agribrands.ca	
Fax: 519-537-7		7883	Website:			

iii. Technology Description:

A simple core sampling device that can take samples from pit, lagoon, or storage at various levels. Ideal for producers who are interested in nutrient levels in manure for NMP's or prior to application. Low cost.

iv. Product Performance or Benefits:

Takes core samples of manure tank/storage. Eliminates need to agitate prior to sampling manure for lab testing.

Additional information provided Claims Substantiated

v. Technology/product requirements in terms of:

- (a) Minimum farm size (in sow equiv.): n/a
- (b) Space of farm: n/a
- (c) Utilities (energy input, materials, etc.): n/a
- (d) Staff/training: 10 minutes training session /demonstration
- (e) Other (please specify): n/a

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.)		(per sow equiv.)		
100 Sow	n/a	n/a		
300 Sow	n/a	n/a		
600 Sow	n/a	n/a		
1200 Sow	n/a	n/a		

Cost Description:

- vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: No special circumstances. Simply access to manure storage.
- vili. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g	. need for capital)
Details: Busine	ss (marketing &	production)		

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: Through word of mouth Pork Congress innovations
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: None
- xv. Market research undertaken concerning by-products: None
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests with Purina Swine Consultants

NMP's must have greater importance in minds of producers

i. Technology/Product Name: Environap

ii. Party responsible for promotion/distribution/developer of product:

5 1					• •		
Company:		Soprema	Inc.				
Contact N	ame:	Michael H	lensen				
Address:		151 York	Street. #	12			
		London		ON	N6A 1	A8	
Phone: Fax:	519-672-5 519-672-1	5561 1578	Email: Website:	mhens	sen@sop	premacanad	ada.com
iii. Technology D Waterpro	escription: pofing mer	nbranes fo	or manur	e conta	inment		
iv. Product Perf	formance o	r Benefits:					
Additional	informati	on provide	d	Clair	ms Subst	antiated	Signed Property Agreement
v. Technology/p (a) Minimu (b) Space (c) Utilitie (d) Staff/	roduct req um farm siz of farm: r s (energy i training: r	uirements ze (in sow (none input, mate none	in terms (equiv.): rials, etc.))f: none): non	le		
(e) Other	(please spe	ecify): no	ne				
vi. Capital and o	perating co	osts:					
Size of C	Operation	C	apital Co	osts	Ai	nnual Oper	erating Costs
(sow eq 100 S	uiv.) ow	(P	er sow e	quiv.)		(per sov	w equiv.)
300 S	ow						
600 S	ow						
1200	Sow						
Cost Des	cription:	Does r	ot apply				
vii. Special Circ None	umstances	s that will a	affect the	econom	ic or tecł	nnical feasibi	bility of the technology/product:
viii. Stage of de	evelopment	: Comr	nercial lau	unch ha	is been o	carried out	t
ix. If your tech	nology is at	t the pre-co	ommercia	l phase,	what fur	ther activiti	ties are required to make this a commercially viable
Dotails: A	Res Stat	search ff	Engii Mark	neering eting	g T F	esting inancial (e	Demonstration e.g. need for capital)
	annouyn al	Comment	nai staye	, nave i	ecentry	molaneu ut	aemonstration manute pits.
x. Do you have	a business	plan for co	mmerciali	izing you	ur techno	logy?	
xi. Have you pe	rformed ar	ny market	research	to deter	rmine the	feasibility o	of the technology for livestock operations?

- xii. Current/Planned Marketing Strategies: Continure to demonstrate at farm shows
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: None
- xv. Market research undertaken concerning by-products: None
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Product awareness

Company		SciCorp Systems Inc.				
Contact N	lame:	Parker Robinson				
Address:		19 Churchhill Drive				
		Barrie		ON	L4N 8Z5	
Phone:	705-733-	2626	Email:	scicorp	@ibm.net	
Fax:	705-733-	2618	Website:			
			Website:	www.so	cicorpbiologic.com	

iii. Technology Description:

Biologic S2R is an all-natural liquid concentrate product used in the treatment of industrial/municipal/and Agriculture waste and wastewater. BIOLOGIC products utilize micronutrient biotechnology to effectively reduce sludge volume, increase wastewater treatment efficiency, improve wastewater effluent quality and eliminate odors by biologically altering the mechanism responsible for producing the odors and accelerating the rate microbial metabolism.

iv. Product Performance or Benefits:

- -Significantly reduces odors from swine manure
- -Increase sludge hydrolysis by 150%
- -Improve wastewater treatment efficiency and solids reduction

Additional information provided Claims Substantiated

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.):
 - (b) Space of farm:
 - (c) Utilities (energy input, materials, etc.):
 - (d) Staff/training:
 - (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	0-\$2000	\$1.05/sow.year
300 Sow	0-\$2000	\$1.05/sow.year
600 Sow	0-\$2000	\$1.05/sow.year
1200 Sow	0-\$3000	\$1.05/sow.year

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

- 1. Product performance reduced in cold weather
- 2. Products are all natural
- 3 Requires little technical expertise to apply

viii. Stage of development: Development (technical feasibility established)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration	
March 31, 1999		Inventory Q	uestionnaire Re	sponses	Page 155 of 258

Details: Distribution Network

x. Do you have a business plan for commercializing your technology?

Marketing

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: Variable to current prices of fertilizer -see McGill University report
- xv. Market research undertaken concerning by-products: None
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

II. Fai ly i Espuiisini		isti inutioni uevelopei	or product.	
Company:	Summer	green Systems Ltd.		
Contact Nam	le: Dan Lan	ibert		
Address:	P.O. Box	:		
	Seaforth	ON M	NOK 1W0	
Phone: 51 Fax: 51	9-527-2470 9-527-2560	Email: summerg Website:	g@sunnorth.com	
iii. Technology Desc Air supporte over an exis	cription: ed tank cover. F sting tank (full o	Reduces odor and st empty). Not affecte	ops precipitation ed by high winds.	from entering manure tanks. Can be installed
iv. Product Perfor Not availab	mance or Benefit le at this time	5.		
Additional in	formation provid	ed Claims	Substantiated	Signed Property Agreement
v. Technology/prod (a) Minimum (b) Space of (c) Utilities ((d) Staff/tra (e) Other (pl	duct requirement farm size (in sow farm: covers ex energy input, mat ining: none req ease specify): s	s in terms of: r equiv.): n/a isting or new tanks erials, etc.): \$90.00 uired ome snow removal	0 /annum approx. required	
vi. Capital and oper	ating costs:		Annual Ones	ating Costs
Size of Op	eration (Capital Costs per sow equiv.)	Annual Oper	ating Costs
sow equi) 100 Sov	v.) /		(per sow	<i>r</i> equiv.)
300 Sov	I			
600 Sov	1			
1200 So	w			
Cost Descri	ption: indivi	dual calculations nee	cessary dependin	ng on tank dimensions
vii. Special Circum climate con	istances that will dition (snow loa	affect the economic (d)	or technical feasibi	lity of the technology/product:
viii. Stage of deve	lopment: Com	mercial launch has l	peen carried out	

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

05	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
Details:				

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales and distributorship
- xiii. Marketable By-Products Produced: could be adapted for methane capture
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $\ensuremath{\mathsf{n/a}}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification field tests

The government will have to impose stricter environmental control with respect to manure management

Company	:	SEPTECH	H		
Contact Name:		Greg Ford			
Address:		Grosvenor Lodge, 1017 Western Road			
		London		ON	
Phone:	519-433-	2913	Email:	septechech@gtn.net	
Fax:	519-433-	2913	Website:		

iii. Technology Description:

NatureWorks manure treatment is filtration system that receives a portion of the total generated manure. On a daily basis, treats and disposes a highly treated effluent either into the ground, or recycles it for non-potable reuse. The concept is similar to a household septic system -low technology and low maintenance.

iv. Product Performance or Benefits:

Similar systems utilizing some of the simple NatureWorks components have now been in use in Ontario of 18 months. Nitrate reductions are averaging <1 mg / litre as compared to the provincial drinking water objective of 10 mg/litre, as monitored by the University of Waterloo

Additional information provided Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): No minimum, system in modular

(b) Space of farm: approx. 2.5 acres for 1400 sows

(c) Utilities (energy input, materials, etc.): minimal Hydro

(d) Staff/training: negligible

(e) Other (please specify): system longevity designed for 20+ years

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.)		(per sow equiv.)		
100 Sow	\$30.00	\$15.00		
300 Sow	\$60.00	\$5.00		
600 Sow	\$100.00	\$1.67		
1200 Sow	\$225.00	\$1.67		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

NatureWorks Technology will exceed prevailing ministry. Environment criteria and is well suited for local climate.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e	.g. need for capital)

Details: It is intended to install at least two field trials in spring 1999 to optimize design parameters.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced: effluent / irrigation water fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: Unknown at this time
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

A huge reduction on land spreading requirements will be proposed as a result of treating onsite a portion of the liquid manure developed.

(sow e	quiv.)			(per sow	equiv.)			
Size of	Operatior	n Capital C (per sow e	osts quiv.)	Annual Opera	ting Costs			
apital and o	operating c	osts:						
(e) Other	⁻ (please sp	ecify):						
(d) Staff	/training:	none						
(c) Utilities (energy input, materials, etc.): non								
(b) Space of farm: installation involves excavation								
(a) Minim	num farm s	ize (in sow equiv.):	n/a					
echnology/	product re	quirements in terms	of:					
Additiona	al informat	ion provided	Clair	ns Substantiated	Signed Property Agreement			
roduct Per ~100%	formance (nitrate rem	or Benefits: noval based on pro	per desi	gn and installation				
carbona	iceous me	dia to convert nitra	tes to a l	ess harmful form of	nitrogen.			
echnology I	Description	: tod rup off in growit	u fad the	augh a pagaiva raad	for overlam that upon a repative persua			
Fax:	519-746-	3575 Website	:					
Phone:	519-888-	4567 Email:	sinwoo	d@mc1adm.uwaterl	oo.ca			
/ 1001 033		Waterloo	ON	N2L 3G1				
Address		University Avenue						
Contact Name:		Scott Inwood						
Company:		University of Wate	erloo					
	Company Contact I Address Phone: Fax: echnology I Nitrate of carbona roduct Per ~100% Additiona echnology/ (a) Minin (b) Space (c) Utiliti (d) Staff (e) Other apital and of Size of (sow e	Company: Contact Name: Address: Phone: 519-888- Fax: 519-746- echnology Description Nitrate contaminat carbonaceous me roduct Performance (~100% nitrate rem Additional informat echnology/product rem (a) Minimum farm s (b) Space of farm: (c) Utilities (energy (d) Staff/training: (e) Other (please sp apital and operating c Size of Operatior (sow equiv.)	Company: University of Wate Contact Name: Scott Inwood Address: University Avenue Waterloo Phone: 519-888-4567 Email: Fax: 519-746-3575 Website echnology Description: Nitrate contaminated run-off is gravit carbonaceous media to convert nitra roduct Performance or Benefits: ~100% nitrate removal based on pro Additional information provided echnology/product requirements in terms (a) Minimum farm size (in sow equiv.): (b) Space of farm: installation involves (c) Utilities (energy input, materials, etc (d) Staff/training: none (e) Other (please specify): apital and operating costs: Size of Operation Capital C (per sow of	Company: University of Waterloo Contact Name: Scott Inwood Address: University Avenue Waterloo ON Phone: 519-888-4567 Email: sinwoo Fax: 519-746-3575 Website: echnology Description: Nitrate contaminated run-off is gravity fed thro carbonaceous media to convert nitrates to a l roduct Performance or Benefits: ~100% nitrate removal based on proper desig Additional information provided Clain echnology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): n/a (b) Space of farm: installation involves excava (c) Utilities (energy input, materials, etc.): non (d) Staff/training: none (e) Other (please specify): apital and operating costs: Size of Operation Capital Costs (per sow equiv.)	Company: University of Waterloo Contact Name: Scott Inwood Address: University Avenue Waterloo ON N2L 3G1 Phone: 519-888-4567 Email: sinwood@mc1adm.uwaterl Fax: 519-746-3575 Website: echnology Description: Nitrate contaminated run-off is gravity fed through a passive react carbonaceous media to convert nitrates to a less harmful form of roduct Performance or Benefits: ~100% nitrate removal based on proper design and installation Additional information provided Claims Substantiated echnology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): n/a (b) Space of farm: installation involves excavation (c) Utilities (energy input, materials, etc.): non (d) Staff/training: none (e) Other (please specify): apital and operating costs: Annual Operating costs: Size of Operation Capital Costs Annual Operating costs:			

100 Sow 300 Sow

600 Sow

1200 Sow

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: None

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

Not Available

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

None

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capit	
vilo n · · · ·			

Details: Business - licensing and/or partnerships

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

xii. Current/Planned Marketing Strategies:

- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: N/A
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Regulatory and/or guidelines requiring producers to address nitrate contamination of groundwater. Also, field trial data that demonstrates technology efficacy over a period of time.

i. Technology/Product Name: Biofiltair

ii. Party responsible for promotion/distribution/developer of product:

	ii ty i cspoi		i onio cioni		ucveloper (n product.				
	Company:		Biorem	Biorem Technologies						
	Contact	Name:	Richard Puntis							
	Address:		7496 W	7496 Wellington Rd 34, RR #3						
			Guelph		ON					
	Phone: Fax:	519-767 519-767	-9100 -1824	Email: Website:	rpuntis@bi	oremtechnologi	es.com			
iii. T	echnology The biot converti odor col	Description filtair syste ing odors ntrol	1: em reliabi to carbon	lity and effe dioxide an	ectively des d water. It	troys odors at fa is probably the I	arms by degrading them biologically and owest cost and most reliable technology for			
iv. P	roduct Per Reduce	formance s odors by	or Benefit / > 90%	S:	Claima C	ubstantisted	Cigned Dreporty (Agreement			
v. Te	echnology/ (a) Minin (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: ies (energy /training: r (please sp	quiremen size (in sov needs sp input, ma minimal pecify):	ts in terms o v equiv.): bace terials, etc.) is provided	lf: No minimu ∶ Basic e	m size ectrical and wat	er hook-up			
vi. C	apital and	operating (costs:	Capital Co	ste	Appual Oper	nting Costs			
	5120 01	Operation	n (per sow e	quiv.)	Annual Opera	ating Costs			
	(sow e) 100 \$	quiv.) Sow				(per sow	equiv.)			
	300 \$	Sow								
	600 \$	Sow								
	1200	Sow								
	Cost De	scription:	To be	e determine	ed					
Vİİ.	Special Cir No wea nurserie	cumstance ther or clir es/landsca	es that wil mate rest pers	l affect the rictions. All	economic or wastes are	technical feasibil non hazardous	ity of the technology/product: and can be disposed of or sold to			
viii.	Stage of d	levelopmen	t: Com	nmercial lau	inch has be	en carried out				
ix. tecl	lf your tec hnology?	hnology is a	at the pre	-commercial	phase, wha	t further activitie	es are required to make this a commercially viable			

<i>.</i>	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
ч.				

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: mulch
- xiv. Value / Selling Price of by-products: minor value
- xv. Market research undertaken concerning by-products: Identifies local nursery to collect waste once every 4 years or so
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Technology is accepted capital cost can be significant. Need to resolve capture of air streams for treatment

	Company:	Papillon A	griculture	Produ	cts Ltd.		
	Contact Name:	Jeffery Cu	rrah				
	Address:	P.O. Box 2	203				
		Innerkip		ON	N0V 1M0		
	Phone: 519-469- Fax: 519-469-	-3022 -3301	Email: Website:	curract	n@execulink.com		
iii.	Technology Description Agriculture Canac Registered Claim of Action - Inhibitio	n: la Registra - To aid in t on of the ur	tion # 980 the contro ease enz	0510 ol of od yme	ors through decre	eased ammonia release from the manure. Mo	de
iv.	Product Performance 40% reduction in a	or Benefits: ammonia					
	Additional informat	tion provided	ł	Clair	ns Substantiated	Signed Property Agreement	
V.	Technology/product re (a) Minimum farm s	quirements i size (in sow e	in terms o equiv.):	f: none			
	(b) Space of farm: (c) Utilities (energy (d) Staff/training: (e) Other (please sp	v input, mater pecify): It is	rials, etc.) s feed ad	: ditive			

vi. Capital and operating costs:

Capital Costs (per sow equiv.)	Annual Operating Costs
	(per sow equiv.)
cost/sow/year \$2.00	= \$200.00
	\$600.00
	\$1200.00
	\$2400.00
	Capital Costs (per sow equiv.) cost/sow/year \$2.00

Cost Description: Cost per feeder pig life assuming 4 pig/tonne of feed = \$0.60/pig

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: None

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration		
	Staff	Marketing	Financial (e.g. need for capital)		
Details: None						

x. Do you have a business plan for commercializing your technology?

March 31, 1999

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers targeted mailings/brochures farm/trade shows
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: None
- xv. Market research undertaken concerning by-products: None
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

When the Canadian livestock industry wakes up to the fact their industry produces a by product that is offensive to all.

i. Technology/Product Name: Oxygen

ii. Party responsible for promotion/distribution/developer of product:

II. Party responsible	TOT PLOIDOLIOU/UIS	at indition/developer o	r product:	
Company:	Air Liquide	Canada Inc.		
Contact Name	Sylvain Ra	ymond		
Address:	1700 Stee	les Ave. East		
	Bramalea	ON		
Phone: 905 Fax: 905	-793-2000 -793-9257	Email: sylvain.rayı Website:	mond@airliquide	e.com
iii. Technology Descr	iption:			
Oxygen inject production of	tion in manure h H20 and CH4	olding tanks can shi which are responsib	ft chemical reac le for odor probl	tion from anaerobic to aerobic and stops lems.
iv. Product Perform n/a	ance or Benefits:			
Additional info	ormation provided	Claims Su	ubstantiated	Signed Property Agreement
(a) Minimum fa (b) Space of fa (c) Utilities (en (d) Staff/train (e) Other (plea	arm size (in sow e arm: needs hold nergy input, mater ning: ase specify):	quiv.): ing tank rials, etc.):		
vi. Capital and opera	ting costs:			
Size of Oper	ation Ca	apital Costs	Annual Opera	ating Costs
(sow equiv. 100 Sow)	sow equiv.j	(per sow	equiv.)
300 Sow				
600 Sow				
1200 Sow	I			
Cost Descript	ion: N/A			
vii. Special Circums No restrictior	tances that will at ns	ffect the economic or	technical feasibili	ity of the technology/product:
viii. Stage of develo	pment: Testing	g of prototype		
ix. If your technolog	gy is at the pre-co	mmercial phase, what	further activitie	s are required to make this a commercially viable
Details:	Research Staff	Engineering Marketing	Testing Financial (e.	Demonstration g. need for capital)

x. Do you have a business plan for commercializing your technology?

March 31, 1999

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: Producer Associations
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $n/a \label{eq:nabla}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Proof of feasibility, financial viability

Company	:	Global Earth Products					
Contact	Name:	Tom Smith					
Address:		RR 2					
		Utopia		ON	LOM 1T0		
Phone:	705-726-	1339	Email:				
Fax:	705-721-	4091	Website:				

iii. Technology Description:

Automated composting system and mobile organic pelleting system. Progress is odour free, wood free, pathogen free with no leaching of nutrients or greenhouse gas emissions. Total nutrient management system

- iv. Product Performance or Benefits:
 - See Brochure

|--|

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): 100 Sow Farrow to Finish
 - (b) Space of farm: 40' x 100 ' minimum
 - (c) Utilities (energy input, materials, etc.): hydro 220
 - (d) Staff/training: 2 Hour per week we supply training
 - (e) Other (please specify):
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.)		(per sow equiv.)		
100 Sow	1600	\$14.00		
300 Sow	666	\$5.00		
600 Sow	400	\$3.30		
1200 Sow	250	\$3.00		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: GEP will purchase compost produced by farm. Payback will vary from farm to farm. Value-added on Farm. Crop Benefits from use. The system dramatically reduce the need for manure storage.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

5	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: demonstrations
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: To be developed and determined
- xv. Market research undertaken concerning by-products: Ongoing discussion within the industry on market needs etc.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Widely based demonstration of practicality and availability of carbons. Recognize payback and value-added created by system. Recognize the value of manure as a nutrient source

Company [.]	Envirocre	teltd	ioper of product.		
Contact Name					
Addross		IN Dood Couth	a L Init 44 019		
Auul 633.	Soo Failw Kitchener		1 Unit 4A-216		
Phone: 519 Fax:	-745-6408	Email: Website:			
iii. Technology Descr Envirocrete (concrete. Th	iption: Concrete Treatn e result is the d	nent is an envir econtaminatior	ronmentally friendly and waterproofing	concrete treatment that can densi	fy existing
iv. Product Perform N/A	ance or Benefits				
Additional inf	ormation provide	d Cl	aims Substantiated	Signed Property Agreement	
v. Technology/produ (a) Minimum f (b) Space of fa (c) Utilities (e (d) Staff/train (e) Other (plea	arm size (in sow arm: n/a nergy input, mate ning: n/a ase specify):	equiv.): Any erials, etc.): w	size 4000-8000 sq. ater	ft./day	
vi. Capital and opera	ting costs:				
Size of Oper	ation (Capital Costs	Annual Op	perating Costs	
(sow equiv. 100 Sow	(p)	er sow equiv.) (per s	ow equiv.)	
300 Sow					
600 Sow					
1200 Sov	ı				
Cost Descript	tion:				
vii. Special Circums A certified co Repairs to da	tances that will a entractor may ap amaged concret	affect the econo oply products to a may need to	mic or technical feas opically. Animals m be done first.	sibility of the technology/product: nay be returned same day process	is complete.
viii. Stage of develo	pment: Comr	nercial launch l	has been carried or	ut	
ix. If your technolog technology?	gy is at the pre-c	ommercial phase	e, what further activ	vities are required to make this a com	mercially viable
Details: N/A	Research Staff	Engineerin Marketing	ng Testing Financial	Demonstration (e.g. need for capital)	

x. Do you have a business plan for commercializing your technology?

March 31, 1999

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

xii. Current/Planned Marketing Strategies:

- xiii. Marketable By-Products Produced: urine-proof hog slats
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $\ensuremath{\mathsf{n/a}}$

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Education to the fact that communicable bacteria and viruses reside in pore structures or concrete and must be leached out to ensure healthy animals.

i. Technology/Product Name: Composting, separation, additives, irrigation, hose

ii. Party responsible for promotion/distribution/developer of product:

	5 1	•				•			
Company: LH D				on of Full	Circle C	Organics			
Contact Name: Cr		Chriss Le	e						
	Address:		RR #1						
			Walton		ON	N0K 1Z0			
	Phone: Fax:	519-887- 519-887-	·9378 ·9011	Email: Website: Website:	clee@s	scsinternet. illage.walto	com n.on.ca/lh		
III.	Technology D See Out)escription line):						
iv.	Product Per See out	formance ine	or Benefits	:					
	Additiona	l informat	tion provide	ed	Clair	ns Substanti	ated	Signed Property Agre	ement
V.	(a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	oroduct re um farm s of farm: es (energy (training: (please sp	quirements ize (in sow input, mate becify):	s in terms equiv.): erials, etc.	ог:):				
vi.	Capital and o	perating c	osts:						
	Size of (Operation	n (Capital C	osts	Annu	al Operating	g Costs	
	(sow ec 100 S	quiv.) Sow	(P	jei sow e	quiv.)	(per sow equ	liv.)	
	300 S	Sow							
	600 S	Sow							
	1200	Sow							
	Cost Des	cription:							
vi	i. Special Circ	cumstance	s that will	affect the	economi	c or technic	al feasibility o	f the technology/produ	ct:
vi	ii. Stage of de	evelopmen	t:						
	-								

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration		
	Staff	Marketing	Financial (e.g. need for capital)		
)etails:						

- Details:
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

- xii. Current/Planned Marketing Strategies:
- xiii. Marketable By-Products Produced:
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products: not available
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: not availlable

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

J 1	· · · · ·							
Company	:	Conor Pa	cific Envir	ronmer	tal Technologies	S		
Contact N	Vame:	Dr. Mel W	/ebber					
Address:		867 Lake	shore Roa	ad, PO	Box 5068			
		Burlingto	n	ON	L7R 4R7			
Phone: Fax:	905-336 905-336	-4519 -4765	Email: Website:	mel.we	ebber@conorpa	c.com		
iii. Technology [Description	n:		,				
iv Product Por	fatty acid	generation	i and reco	overy fro	om hog manure	slurry		
	l informa	tion provide	d	Clai	ms Substantiated		Signed Property Agreement	
			u .	Ului			Signed i ruper ty Agreement	
v. Technology/	product re	equirements	in terms o	of:				
(a) Minim	ium farm s	size (in sow	equiv.):					
(b) Space	e of Tarm:	innut mat	orials atc)	۱.				
(Jact2 (b)	training	y input, mate	eriais, etc.,).				
(e) Other	; (please si	pecify):						
vi. Capital and c	nerating (costs:						
Size of (Operatio	n (Capital Co	osts	Annual O	peratin	g Costs	
(50W 00	· ·	(p	er sow e	quiv.)	(per	-	- uiv)	
100 \$	Sow				(per	sow eq	uiv.)	
300 \$	Sow							
600 \$	Sow							
1200	Sow							
Cost Des	scription:							
vii. Special Ciro	cumstance	es that will	affect the	econom	ic or technical fea	asibility (of the technology/product:	
viii. Stage of d	evelopmer	it: Conc	ept (basic	resear	ch still necessar	у)		
ix. If your tech technology?	nnology is	at the pre-c	ommercial	l phase,	what further act	ivities aı	re required to make this a commercially vi	able
teennology:	Re	esearch	Engir	neering	g Testing	D	emonstration	
Details:	St	aff	Mark	eting	Financia	ıl (e.g. r	need for capital)	
x. Do you have	a busines	s plan for co	ommerciali	zing you	ur technology?			
xi. Have you pe	erformed	any market	research	to deter	rmine the feasibili	ty of the	e technology for livestock operations?	
xii. Current/Pl	anned Ma	rketing Stra	ategies:					

March 31, 1999

Inventory Questionnaire Responses

Page 175 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

	•	•			•	-				
	Company	/:	KEMOMA	ATIC						
	Contact	Name:	John Bro	wn						
	Address	:	2389 Rt.	202						
			Dunham		QC	J 0E 1	1M0			
	Phone: Fax:	514-266 514-266	-5323 -5708	Email: Website:						
iii. T	echnology Change	Description is the ana	n: erobic ferm	nentation o	f the sl	urry in	to an aerob	oic ferm	nentation,	
iv. F	Product Per	rformance	or Benefits	:						
	Additiona	al informa	ition provide	ed	Clain	ns Subs	stantiated		Signed Property Agreement	
v. T	echnology/ (a) Minin (b) Space	product re num farm s e of farm:	equirements size (in sow cement-st	s in terms of equiv.): eel holding	f: n/a n tanks	or lage	oons			
	(c) Utiliti	ies (enerav	y input, mate	erials, etc.):	230	1PH o	or 550 3PH			
	(d) Staff	/training:	n/a							
	(e) Other	r (please si	pecify):							
		(J								
VI. (apital and	operating (COSTS:		-1-				Casta	
	Size of	Operatio	n (p	er sow eq	sts juiv.)	4	Annual Ope	erating	J COSTS	
	(sow e) 100 \$	quiv.) Sow					(per so	w equ	iiv.)	
	300 \$	Sow								
	600 \$	Sow								
	1200	Sow								
	Cost De	scription:								
Vİİ.	Special Cir Turn Ho	cumstance og manure	es that will e into non-s	affect the e melling, no	conomi o solids	c or teo , liquic	chnical feasi d compost v	bility of with litt	f the technology/product: le danger to water table contamina	tion.
viii.	Stage of d	levelopmer	1t: Comr	nercial lau	nch has	s been	carried out	t		
ix. tec	If your tech hnology?	hnology is	at the pre-c	commercial	phase, v	vhat fu	irther activi	ties ar	e required to make this a commerciall	y viable
100	iniology.	Re	esearch	Engin	eering		Testing	De	emonstration	
	Details:	St	aff	Marke	eting		Financial (e.g. no	eed for capital)	
x. I	Do you have	e a busines	s plan for co	ommercializ	zing you	r techr	nology?			

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: List price from \$10 000 - \$12 600
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification

Demonstration only.

i. Technology/Product Name: Bioreactor Engineered Wetland for Wastewater Treatment Tech ID: O-16

ii. Party responsible for promotion/distribution/developer of product:

5 1	•					•				
Company:		Soil Enrichment Systems Inc.								
Contact Name:		James Higgins								
Address:		10800 Weston Rd								
		Vaughan		ON	L4L	1A6				
Phone: Fax:	905-832 905-832	-2166 -0751	Email: Website:	sessoi	l@aol	.com				
iii. Technology Advand wetland	Description cement on d designed	ו: ordinary co to give en	onstructed hanced se	d wetlar econda	nd tech ry trea	nnology atment y	BREW ear rour	/ is a sub-surface	flow (SSF)	engineered
iv. Product Pe	erformance	or Benefits:								
Addition	nal informa	tion provide	d	Clair	ms Sub	stantiat	ed	Signed Proper	ty Agreemen	ıt
v. Technology (a) Mini (b) Spac (c) Utili (d) Staf (e) Othe	/product re mum farm s ce of farm: ties (energy f/training: er (please sp	equirements size (in sow 7 input, mate pecify):	in terms (equiv.): erials, etc.)	of:):						
vi. Capital and	operating (costs:								
Size of	f Operatio	n (Capital Co	osts		Annual	Operat	ing Costs		
(sow equiv.) 100 Sow		(per sow equiv.)								
300	Sow									
600	Sow									
120	0 Sow									
Cost De	escription:									
vii. Special Ci BREW	rcumstance would be u	es that will a used in cor	affect the njunction v	economi with oth	ic or te ier nat	echnical tural WV	feasibilit V treatm	y of the technology nent technologies	y/product:	
viii. Stage of	developmen	it: Field	Trials (pro	oduct is	expo	sed to re	eal world	d operating condi	tions)	
ix. If your te technology?	chnology is a	at the pre-c	ommercia	l phase, '	what f	further a	ctivities	are required to m	ake this a cor	mmercially viable
Details:	Re St	esearch aff	Engii Mark	neering eting	I	Testin Financ	g :ial (e.g	Demonstration . need for capita	ıl)	
x. Do vou hav	ve a busines:	s plan for co	ommerciali	izina vol	ır tech	noloav?				
,	<u> </u>									

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999
- xii. Current/Planned Marketing Strategies: Industrial Clients
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: None
- xv. Market research undertaken concerning by-products: OCETA has it underway
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: $_{\rm ETV}$

Pilot/Demo

ii. Party responsible for promotion/distribution/developer of product:

	5 1	•						
Company:		Nuhn Ir	Nuhn Industries Ltd.					
	Contact Nan	ne: Dennis	Nuhn					
	Address:	Box 16	D					
		Sebring	yville	ON				
	Phone: 51 Fax: 51	19-393-6284 19-393-5104	Email: Website:	dnuhn@quadro.net				
III.	Technology Des Injectors ar reduces ru	cription: nd low to groun n-off	d manure a	pplication reduces odor	r and nitrogen loss; controlled applicatior	n rates		
iv.	Product Perfor ongoing stu	mance or Benefi udies with Agric	ts: :ulture Cana	ada				
	Additional in	nformation provi	ded	Claims Substantiated	I Signed Property Agreement			
V.	Technology/pro (a) Minimum (b) Space of (c) Utilities	duct requiremer 1 farm size (in so 1 farm: (energy input, ma	its in terms (w equiv.): aterials, etc.	of: all farms): tractor, animal man	ure			
	(d) Staff/tr	aining: basic tra	aining on ma	achine operation				
	(e) Other (pl	lease specify):	-					

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Designed to fit on any tank, any soil type -improves crops and crop yield.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing D	emonstration
	Staff	Marketing	Financial (e.g. n	eed for capital)
` .				

Details:

x. Do you have a business plan for commercializing your technology?

Inventory Questionnaire Responses

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: farm/trade shows farm publications/journals
- xiii. Marketable By-Products Produced:
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $\ensuremath{\mathsf{n/a}}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests third party verification

education ,economic conditions in farm industry

i. Technology/Product Name: SuperF Inc.

ii. Party responsible for promotion/distribution/developer of product:

	Company:	Carson	s Farm Suppl	y & Tac	k Shop		
	Contact Nan	ne: Al Lowr	y				
	Address:	RR #3					
		Listowe	I (N N	I4W 3JG		
	Phone: 51 Fax: 51	19-291-1094 19-291-5065	Email: Website:				
iii.	Technology Des Products n	cription: eutralize odors a	and gas prod	uced by	manure.		
iv.	Product Perfor See inform	mance or Benefit ation	S:				
	Additional in	nformation provid	bed	Claims	Substantiated	Signed Proper	ty Agreement
v. 1	echnology/pro (a) Minimum	duct requiremen 1 farm size (in sov	ts in terms of: w equiv.): N	one			
	(b) Space of	farm: None					
	(c) Utilities	(energy input, ma	terials, etc.):	Mix wi	th water		
	(d) Staff/tr	aining: very min	imal				
	(e) Other (pl	lease specify):					
vi.	Capital and ope	rating costs:					
	Size of Op	eration	Capital Cos	ts iv)	Annual Op	erating Costs	
	(sow equi 100 Sov	v.) N			(per s	ow equiv.)	
	300 Sov	N					
	600 Sov	N					
	1200 Sc	w					
	Cost Descr	iption:					
Vİİ.	Special Circun Manure car	nstances that wi	ll affect the ec s fertilizer witl	onomic onomic of the	r technical feas odor	ibility of the technolog	y/product:
viii	. Stage of deve	elopment: Con	nmercial laun	ch has b	been carried ou	ıt	
ix. teo	If your techno	logy is at the pre	-commercial pl	nase, wh	at further activ	vities are required to m	ake this a commercially viable
		Research Staff	Engine Marketi	ering ing	Testing Financial	Demonstration (e.g. need for capita	al)
	Details:						

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

Inventory Questionnaire Responses

- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: demonstrations

we have to prove it's value to farmers. There has to be financial gain for them!

- i. Technology/Product Name: Phylmar Manure Treatment System
- ii. Party responsible for promotion/distribution/developer of product:

	i ty i copoli				aoroiop	or or producer				
	Company	:	Hal-Mar	Internation	al Inc.					
Contact Name: E		Errol But	Errol Butler							
	Address:	:	650 Scot	650 Scott Road, P.O. Box 20039						
			Sarnia		ON	N7S 6J3				
	Phone: Fax:	519-337- 519-337-	7677 7599	Email: Website:						
iii. Te	chnology I A biolog	Descriptior jical treatn	l: nent syste	m that enh	nances t	he natural bre	akdown of	manure.		
iv. P	roduct Per Reduce:	formance s solids ar	or Benefits nd harmful	: bacteria						
	Additiona	al informat	tion provide	ed	Clain	ns Substantiate	d	Signed Property Ag	greement	
v. Te	chnology/j (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other	product re num farm s e of farm: es (energy /training: (please sp	quirements ize (in sow depends o input, mat 2 days tra pecify):	s in terms o equiv.): upon size f erials, etc.) ining, 1 ho	if: 500 So farm : moto pur/day t	ws minimum ors to operate				
vi. Ca	apital and o	operating o	osts:							
	Size of	Operatio	n (Capital Co	osts	Annual	Operating	Costs		
	(sow e 100 \$	quiv.) Sow	(ber sow e	quiv.)	(per	[.] sow equi	v.)		
	300 \$	Sow								
	600 \$	Sow								
	1200	Sow								

Cost Description: Not available yet

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Farm has to be large enough to warrant the technology. Accommodations for heating may be required in colder climates, unit needs to be inside a building.

vili. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

05	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
- + - !! -				

Details:

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: joint ventures with local companies
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: $n/a \label{eq:nabla}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification

We must be able to demonstrate cost savings and improvements in farm operations

i. Technology/Product Name: Dr. Nigel Bunce

ii. Party responsible for promotion/distribution/developer of product:

5 1	•			•	•		
Company	/: U	niversity of	Guelph				
Contact	Name: D	r. Nigel Bu	nce				
Address	: D	epartment	of Chemis	stry and E	Biochemistry		
	G	uelph	0	N N1	G 2W1		
Phone: Fax:	519-824-41 519-766-14	20 En 99 W	nail: ebsite:				
iii. Technology This tec	Description: hnology is pr	esently at	the resear	ch stage			
iv. Product Per	formance or	Benefits:					
Additiona	al information	n provided		Claims Su	bstantiated	Signed Property Agr	eement
v. Technology/ (a) Minin (b) Space (c) Utiliti (d) Staff (e) Other	product requi hum farm size e of farm: ies (energy inp /training: r (please speci	rements in (in sow equ out, materia ify):	terms of: iiv.): Is, etc.):				
vi. Capital and	operating cost	ts:					
Size of	Operation	Cap (per	oital Costs sow equiv	s v.)	Annual Oper	rating Costs	
(sow e) 100 \$	quiv.) Sow	ŭ	·	,	(per sov	v equiv.)	
300 \$	Sow						
600 \$	Sow						
1200	Sow						
Cost De	scription:						
vii. Special Cir	cumstances t	hat will affe	ect the ecor	nomic or i	technical feasib	ility of the technology/prod	uct:
viii. Stage of d	levelopment:	Concept	(basic res	earch st	ill necessary)		
ix. If your tecl technology?	hnology is at t	he pre-com	mercial pha	ase, what	further activit	ies are required to make th	is a commercially viable
to on nonogy i	Rese	arch	Enginee	ring	Testing	Demonstration	
Details:	Stall		Warketin	iy	Financiai (e	e.g. need for capital)	
x. Do you have	e a business pl	an for comn	nercializing	your tec	hnology?		
xi. Have you p	erformed any	market res	search to d	etermine	the feasibility o	of the technology for livesto	ck operations?
xii. Current/P	lanned Marke	ting Strateq	gies:				
March 31, 1999			Inve	entory Qu	estionnaire Res	ponses	Page 187 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name: SHAC Manure Digester

ii. Party responsible for promotion/distribution/developer of product:

	Company:	MTS E	nvironmenta	l Produ	cts -SHAC	
	Contact Name	: Paul Re	evington			
	Address:	215 Pic	kard Road			
		Exeter		ON	N0M 1S3	
	Phone: 519 Fax: 519)-236-1074)-430-9673	Email: Website: Website:	www.sl	hacenviro.com	
iii.	Technology Desci SHAC Redu	ription: ces odours a	nd bases.			
iv.	Product Perform	nance or Benefi	its:			
	Additional inf	ormation provi	ided	Clain	ns Substantiated	Signed Property Agreement
V.	Technology/prod (a) Minimum f	uct requiremer Farm size (in so	nts in terms o w equiv.):)f: n/a		
	(b) Space of f	arm: n/a				
	(c) Utilities (e	nergy input, ma	aterials, etc.)): n/a		
	(d) Staff/trai	ning: n/a				
	(e) Other (ple	ase specify):				
vi.	Capital and opera	ating costs:				
	Size of Ope	ration	Capital Co	osts auiv)	Annual Opera	ating Costs
	(sow equiv) 100 Sow	.)		quiv.)	(per sow	equiv.)
	300 Sow					
	600 Sow					
	1200 Sov	v				
	Cost Descrip	tion:				
Vİİ	. Special Circums	stances that w	ill affect the	economi	c or technical feasibil	ity of the technology/product:
vii	i. Stage of develo	opment: Cor	mmercial lau	unch ha	s been carried out	
ix. tο	If your technolo	gy is at the pre	e-commercial	phase, v	what further activitie	es are required to make this a commercially viable
ເປ	Details:	Research Staff	Engir Marke	neering eting	Testing Financial (e.	Demonstration g. need for capital)

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

xii. Current/Planned Marketing Strategies:

March 31, 1999

- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: N/A
- xv. Market research undertaken concerning by-products: $n\!/\!a$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests research testing protocol
 - third party verification

End users must be educated to use the product properly to show how effective it really it is in composting manure and decreasing odors.

Denmark

i. Technology/Product Name: BIOREK

ii. Party responsible for promotion/distribution/developer of product:

Company	:	BIOSCAN	N A/S			
Contact Name:		Klaus Kristensen				
Address:		Tagtaekkervej 5				
		DK-5230	Odense S	5		
Phone:	45-66-15	-70-71	Email:	kk@bioscan.dk		
Fax:	45-66-15	-77-71	Website:			

iii. Technology Description:

The BIOREK plant converts pig slurry and other liquid organic wastes into biogas, pure water (drinking water quality, 80%), fertilizer concentrates (inorganic, 100%; utilizable, 15-18%) and compost (35% TS, 2-5%). Major advantages: Volume reduction, recycling of water, increased nitrogen utilization, odourless processing and products, positive energy balance. Processes involved are anaerobic digestion with ultrafiltration, ammonia stripping and reverse osmosis. The technology offers a total solution to liquid organic waste problems.

iv. Product Performance or Benefits:

No data available for publication at present.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 350 sows with production of each 22 100-kgs pigs

(b) Space of farm: 200 sq. metres

(c) Utilities (energy input, materials, etc.): acids for pH-adjustment, chemicals for filter cleaning. The plant is producing surplus power/heat

(d) Staff/training: no special requirement as running (remote), maintenance/service of plant by plant supplier

(e) Other (please specify): none

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.)	u i /	(per sow equiv.)		
100 Sow	-	•		
300 Sow	\$230 US / yr.	\$ 80 US		
600 Sow	\$190 US / yr.	\$ 70 US		
1200 Sow	\$145 US / yr.	\$ 60 US		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

A temperature climate, where excess heat can replace other energy sources for heating of stables will have a positive impact on the overall plant economy. There must be a present or potential market for liquid fertilizers as fertilizer concentrates from the plant are liquid (aqueous solutions).

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing Demonstratio		
	Staff	Marketing	Financial (e.g. need for capita		
D 1 11					

- Detäils: n/a
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales joint ventures with local companies
- xiii. Marketable By-Products Produced: heat / electricity fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products:

Power - depending on local prices and conditions Heat - depending on price of alternative energy sources for heating Fertilizer concentrates - depending on prices of fertilizers (In Denmark: Nitrogen 0.65 US\$/kg, Phosphorous 1.25 US\$/kg, Potassium 0.45 US\$/kg).

xv. Market research undertaken concerning by-products:

In Denmark conditions (incl. price and subsidies) for sale of power, farmers valuation of fertilizer concentrates and replaceable consumption in stables have been evaluated.

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: Evaluation by pricing all costs and benefits to determine the optimal combinations of continuously evaluating possible improvements

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Regulations on slurry handling (storage requirements, limitation on quantity of slurry applied per hectare), authorities valuation (in form of subsidizing) of improved utilization of plant nutrients (especially nitrogen), and authorities valuation of CO2-neutral energy production.

England

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

Company:	Hibotec Ltd			
Contact Name:	Edwyn Stob	part		
Address:	Elmsfield, V	Vorcester Rd		
	Chipping No	orton Oxford 0X	7 5XS	
Phone: 0160 Fax: 0160	864 1389 E 864 1643 V	mail: Vebsite:		
iii. Technology Descri slurry separat	ption: ion and aeration	systems; preparat	ion for land applic	ation
iv. Product Performa	ince or Benefits:			
Additional info	rmation provided	Claims S	ubstantiated	Signed Property Agreement
 v. rechnology/product (a) Minimum fa (b) Space of fai (c) Utilities (en (d) Staff/traini (e) Other (please) 	rm size (in sow eq rm: ergy input, materi ing: se specify):	uiv.): als, etc.):		
vi. Capital and operat	ing costs:			
Size of Opera	ation Ca	pital Costs	Annual Operat	ing Costs
(sow equiv.) 100 Sow	(per	Sow equiv.j	(per sow e	equiv.)
300 Sow				
600 Sow				
1200 Sow				
Cost Descripti	on:			
vii. Special Circumst	ances that will aff	ect the economic or	technical feasibilit	y of the technology/product:
viii. Stage of develop	ment:			
ix. If your technolog technology?	y is at the pre-con	nmercial phase, wha	t further activities	are required to make this a commercially viable
	Research Staff	Engineering Marketing	Testing Financial (e.g	Demonstration . need for capital)
Details:				· · · · · · · · · · · · · · · · · ·
x. Do you have a bus	iness plan for com	mercializing your te	chnology?	
vi Uovo vou porforn	and any markat ra	coarch to dotormin	the feedbillty of t	he technology for livesteely energians?

March 31, 1999

Inventory Questionnaire Responses

Page 193 of 258

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- $xv. \ \mbox{Market}\ \mbox{research}\ \mbox{undertaken}\ \mbox{concerning}\ \mbox{by-products:}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

France

i. Technology/Product Name: Biological Manure Treatment

Tech ID: EA-15

ii. Party responsible for promotion/distribution/developer of product:

	Company: Contact Name: Address:		Technolys	e Sa				
			Mcheust					
			Le Menehy					
	Phone	02-96-51	Plenee-Ju	igon Fmail [,]	22640			
	Fax:	02-96-51	-70-10	Website:				
iii. Technology Description: Biological manure treatment.								
iv. Pr	oduct Per	formance o	or Benefits:					
	Additiona	l informat	ion provideo	t	Claims Substantiated	S	Signed Property Agreement	
v. Teo	v. Technology/product requirements in terms of:							
(a) Minimum farm size (in sow equiv.): 1			equiv.): 100	D				
	(b) Space	of farm:	depends o	n volume of i	manure			
		,						

- (c) Utilities (energy input, materials, etc.): only electricity
- (d) Staff/training: no additional
- (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	250,000 francs	11 francs*
300 Sow	450,000 francs	10 francs*
600 Sow	550,000 francs	3 - 8 francs*
1200 Sow	850,000 francs	3 - 8 francs*

Cost Description: * per cubic metre treated.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Retrofit necessary.

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
taile				

Details:

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: joint ventures with local companies
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products: don't know
- xv. Market research undertaken concerning by-products: yes
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: testing protocol third party verification

Demonstrate feasibility and ease of operation.

ii. Party responsible for promotion/distribution/developer of product:

	Company:	Bio Armor Envi	ronm	ent	
	Contact Name:	Louis Guillemot			
	Address:	21 de la Gare			
iii. Te	Phone: 33-2-96- Fax: 33-2-96- echnology Descriptio Biological treatme	-32-0478 Email: -32-0628 Webs n: ent (digestion), pl or Bonofits:	ite: nysio	-chemical treatment.	
IV. FI	Odour reduction	100%: nitrates 75	-98%	6: volume reduction 20-90%	
	Additional informa	tion provided		Claims Substantiated	Signed Property Agreement
 v. Technology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): 200 sows 					
	(b) Space of farm: 500 to 1000 sq. metres, depending on size				
	(c) Utilities (energy	y input, materials, v	etc.):	electricity	
	(d) Staff/training:	provided by Bio	Armo	or	
	(e) Other (please s	pecify):			

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.) 100 Sow		(per sow equiv.)		
300 Sow	748.38 ECU	40.47 ECU		
600 Sow	536 ECU	33.28 ECU		
1200 Sow	449 ECU	32.4 ECU		

Cost Description:

- vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Minimum 150 sow operation for economic reasons.
- viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g	. need for capital)

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

Inventory Questionnaire Responses

- xii. Current/Planned Marketing Strategies: independent sales
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products: varies. 100 to 700 francs/tonne
- xv. Market research undertaken concerning by-products: yes
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification - by CEMAGREF

Regulation, as in Europe. Technology is suitable for any 200 - 5000 sow operation.

ii. Party responsible for promotion/distribution/developer of product:

	5 1	•			• •			
	Company:		ELF ATOCHEM / GRANDE PAROISSE					
	Contact Name:		J.M. Lartigue-Peyrou					
	Address:		Cours Michelet La Defense 10 Paris La Cedex 92091					
	Phone: 33-1-49-00-81-09 Email: lartiguepj@pari41L.elf-atoche Fax: 33-1-49-00-72-53 Website:			.elf-atochem	ı.fr			
iii. Te	 Technology Description: Filtration and anti-odor treatment. total treatment of odour decrease nitrates 80% by filtration and lagoon settlement. recovery of nitrates and phosphorous in a filtration 'cake' - 30% solids - that can be used. 							
iv. Pr	 Product Performance or Benefits: Odour reduction >95% Solid cake = >90% of initial nitrates, >90% of initial phosphorous, >99% of heavy metals. Filtered liquid: after lagoon storage, <20% of initial nitrates, almost all ammonia removed, BOC<1500mg/l, and significant reduction in pathogens. 							
	Additiona	l informat	ion provide	ed	Claims Substantia	ited	Signed Property Agreement	
v. Te	. Technology/product requirements in terms of:							

(a) Minimum farm size (in sow equiv.): 200 sows = a mini installation, but could do a mobile version used by many

(b) Space of farm: 100 sq. metres & surface lagoon & storage area for solids

(c) Utilities (energy input, materials, etc.): electricity, chemical & organic additives

(d) Staff/training: completely automatic

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	1200 ECU *	70 ECU
300 Sow	400 ECU	68 ECU
600 Sow	240 ECU	63 ECU
1200 Sow	190 ECU	60 ECU

Cost Description: * or 400 ECU if shared by 3 100-sow farms

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

No effect of climate. Fits into existing infrastructure. Solid yields a useable compost if desired or can be mixed with compost. 2 -3 months lagoon storage required for reuse in flushing. Could add on a water treatment system if wanted to dispose of liquid.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research Engineering Testing Demonstration Staff Marketing Financial (e.g. need for capital)

- Details:
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: effluent / irrigation water solid cake - compost
- xiv. Value / Selling Price of by-products: Precise value of end products must be evaluated economically according to region and needs.
- xv. Market research undertaken concerning by-products: no. Not necessary. The system is well known.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification - by CEMAGREF (permitting organization)

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Promote awareness. Find one or more Canadian partners to buy a licence to produce the technology.

Netherlands

i. Technology/Product Name: Tech ID: C-45 ii. Party responsible for promotion/distribution/developer of product: Company: WEET bv (Workshop for Environmental Engineering and Technology) Contact Name: Hans Wouters Address: Lange Voren 19 5521 DC Eersel Email: Phone: 31-497-513281 Website: Fax: 31-497-513281 iii. Technology Description: Catalytic Fluidized Bed burner (CFB) for manure; HEDiS mechanical vapour compression system iv. Product Performance or Benefits: Additional information provided **Claims Substantiated** Signed Property Agreement v. Technology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): (b) Space of farm: (c) Utilities (energy input, materials, etc.): (d) Staff/training: (e) Other (please specify): vi. Capital and operating costs: Size of Operation Capital Costs **Annual Operating Costs** (per sow equiv.) (sow equiv.) (per sow equiv.) 100 Sow 300 Sow

1200 Sow Cost Description:

600 Sow

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
otalla				

Details:

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

Inventory Questionnaire Responses

Page 201 of 258

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

World V ame: P. Walti Meidoor 6226 W escription:	Vater Engineerir nie m 14 B Maastricht Email: Website:	ng BV		
ame: P. Walti Meidoor 6226 W escription:	nie m 14 B Maastricht Email: Website:			
Meidoo 6226 W escription:	m 14 B Maastricht Email: Website:			
escription:	Email: Website:			
escription:				
r Manure-Manage	er; concentratio	n of liquid manure t	to 20% dry matter	
ormance or Benefi	ts:			
information provi	ded C	laims Substantiated	Signed Property Agr	reement
roduct requiremen im farm size (in sov of farm: s (energy input, ma training: (please specify):	ts in terms of: n equiv.): terials, etc.):			
perating costs:				
peration	Capital Costs	م Annual O	perating Costs	
uiv.) ow	(per sow equiv) (per s	sow equiv.)	
ow				
ow				
Sow				
cription:				
umstances that wi	ll affect the econ	omic or technical fea	sibility of the technology/prod	uct:
velopment:				
nology is at the pre	-commercial phas	e, what further acti	vities are required to make th	is a commercially viable
Research Staff	Engineeri Marketing	ng Testing Financia	Demonstration	
		,	(J	
a business plan for	commercializing	your technology?		
rformed any marke	et research to de	termine the feasibilit	ty of the technology for livesto	ock operations?
	escription: r Manure-Manage ormance or Benefit information provid roduct requiremen im farm size (in sou of farm: s (energy input, ma training: (please specify): perating costs: perating costs: peration uiv.) pw bw bw bw com sow cription: umstances that wi velopment: nology is at the pre Research Staff a business plan for formed any market	Website: escription: r Manure-Manager; concentration ormance or Benefits: information provided C roduct requirements in terms of: im farm size (in sow equiv.): of farm: s (energy input, materials, etc.): training: (please specify): overating costs: operation Capital Costs (per sow equiv.) ow ow ow ow cow cow cow costs: peration Capital Costs (per sow equiv.) ow ow ow ow ow ow ow cow cow cow cow cow cow cow cow cow cow cow cow cow cow	Website: escription: r Manure-Manager; concentration of liquid manure formance or Benefits: information provided Claims Substantiated roduct requirements in terms of: in farm size (in sow equiv.): of farm: s (energy input, materials, etc.): training: (please specify): overating costs: Operation Capital Costs Operation Capital Costs Operation Capital Costs ow Operation (per sow equiv.) (per so uiv.) (per so ow Oper so ow Oper so ow Sow cription: umstances that will affect the economic or technical fea velopment: nology is at the pre-commercial phase, what further acti Research Engineering Testing Staff Marketing Financial	Website: escription: r Manure-Manager; concentration of liquid manure to 20% dry matter ormance or Benefits: information provided Claims Substantiated Signed Property Agr roduct requirements in terms of: in farm size (in sow equiv.): of farm: s (energy input, materials, etc.): irraining: [please specify]: verating costs: uiv.) (per sow equiv.) uiv.) (per sow equiv.) (per sow equiv.) ow ow sow sow sow contact fact the economic or technical feasibility of the technology/prod velopment: nology is at the pre-commercial phase, what further activities are required to make th Research Engineering Testing Demonstration staff Marketing Financial (e.g. need for capital)

March 31, 1999

Inventory Questionnaire Responses

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- $xv. \ \mbox{Market}\ \mbox{research}\ \mbox{undertaken}\ \mbox{concerning}\ \mbox{by-products:}$
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

USA

i. Technology/Product Name: Krystal Air

Tech ID: C-01

ii. Party responsible for promotion/distribution/developer of product:

Company: Fischer E			nterprises	s, Inc		
Contact Name:		Marlin Fis	Marlin Fischer			
Address:		2415 Utal	h Ave.			
		Thor		IA	50591	
Phone:	515-378	-3365	Email:	webm	aster@krystal-air.com	
Fax:	515-378	-3375	Website:			

iii. Technology Description:

Krystal Air is an ampheteric formula that acts and reacts with a positive and negative ion exchange converting H2S - SO2 - NH3 into salts of sulphide, sulphate, and nitrate and nitrites which are biodegradable.

iv. Product Performance or Benefits:

Additional information provided Claims Substantiated

Signed Property Agreement

- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): 300 pigs, 400 acres
 - (b) Space of farm: All in barns
 - (c) Utilities (energy input, materials, etc.):
 - (d) Staff/training:
 - (e) Other (please specify): Krystal Air is added to slurry
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow		
300 Sow	x	
600 Sow		
1200 Sow		

Cost Description:

- vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Deodorized slurry can be used as fertilizer without the odour problem usually associated with the spreading of the manure / fertilizer onto the fields.
- viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

05	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
taile N	and for conital			

Details: Need for capital

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: media releases/commercial advertising demonstrations
- xiii. Marketable By-Products Produced: odor - free and reduced acidic fertilizer
- xiv. Value / Selling Price of by-products:

Research has shown that 1,000 litres of deodorized slurry is equivalent to 320 lbs. Of chemical fertilizer

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Capital and advertising / promotion of product

ii. Party responsible for promotion/distribution/developer of product:

Company:		Balzer Inc.				
Contact Name:		Curt Aalderks				
Address:		725 Union Road				
		Cedar Falls		IA	50613	
Phone	<u>).</u>	319-277-	2443	Email:	curtaa	lserks@cfu-cybernet.net
Fax: 319-268-9868		Website:				

iii. Technology Description:

Two areas that Balzer is involved environmentally is by use of different styles of injectors for various soil types and farming practices and variable rate application (GPS) and select rate systems. Four types of injectors are used: disk injectors, "C" shank sweep injector, Balzer's Magnum sweep injector and a No-Till injector. The last two have the least soil disturbance and also seem to keep the odors to a minimum. Two systems are available for precision application: Variable Rate with GPS and a selectable rate machine.

iv. Product Performance or Benefits:

With Magnum and No-Till injectors odour is virtually eliminated (by own observations). "C" shank injectors reduce the odor by 50-70%. GPS equipment will maintain the proper quantities of effluent that is programmed by the applicator.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): cost ranges from \$10,000 - \$20,000 US so that is a big determinant of who

(b) Space of farm: n/a

(c) Utilities (energy input, materials, etc.): the injectors range from \$2,000 - \$10,000 US depending on model and width of unit

(d) Staff/training: no training is necessary on the injector, but computer/GPS knowledge is req'd for the GPS

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:	determined by size of traile	ed tank unit.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research Engineering Testing Demonstration

- Details: n/a
- x. Do you have a business plan for commercializing your technology?

Marketing

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers direct marketing/sales
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

A marketing avenue would be great. Because of the exchange rate, we have a hard time selling our equipment in Canada.

ii. Party responsible for promotion/distribution/developer of product:

5 1	1	1	1		
Company:	TOMCO				
Contact Name:	Tom Eden	I			
Address:	PO Box 78	3			
	Wantagh	NY 11	793		
Phone: 516- ⁻ Fax:	781-4972	Email: tomcocher Website:	mical.com		
iii. Technology Descrij	ption:				
This is a live o	culture. It reduc	ces sludge and odor	s. We grow the	material.	
IV. Product Performa This bacteria	ince or Benefits: reduces odour .	70-80%			
Additional info	rmation provided	l Claims S	ubstantiated	Signed Property Agreement	
			abotantiatou	olghour ropor ty right official	
v. Technology/produc	ct requirements	in terms of:			
(a) Minimum fa	rm size (in sow e	equiv.): no minimu	m necessary		
(b) Space of fai	rm:				
(c) Utilities (en	ergy input, mater	rials, etc.):			
(d) Staff/traini	ing:				
(e) Other (pleas	se specify):				
vi. Capital and operat	ing costs:				
Size of Opera	ation C	apital Costs	Annual Opera	ating Costs	
(sow equiv.)	(pe	er sow equiv.)	(per sow	equiv.)	
`100 Sow ´	.30 -	.35 cents/ animal	ŭ	. ,	
300 Sow					
600 Sow					
1200 Sow					
Cost Descripti	on:				
vii. Special Circumst	ances that will a	ffect the economic or	technical feasibil	ity of the technology/product:	
I he only elem	ient we ask for	is liquid.			
vill. Stage of develop	ment: Field T	rials (product is exp	osed to real wor	ld operating conditions)	
ix. If your technology	y is at the pre-co	ommercial phase, wha	t further activitie	es are required to make this a commercia	lly viable
teennology:	Research	Engineering	Testing	Demonstration	
	Staff	Marketing	Financial (e.	g. need for capital)	
Details:					
x. Do you have a bus	iness plan for co	mmercializing your te	chnology?		
xi. Have you perform	ned any market r	research to determin	e the feasibility of	the technology for livestock operations?)

March 31, 1999

Inventory Questionnaire Responses

Page 209 of 258

- xii. Current/Planned Marketing Strategies: have marketed this material for the last 18 yrs.
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification testing protocol field tests

This will work anywhere there is dead organic matter. Hogs, poultry, beef, etc.

i. Technology/Product Name: Earth Balance X12 Technology

Signed Property Agreement

ii. Party responsible for promotion/distribution/developer of product:

Company	:	Earth Balance Technologies, LTD					
Contact I	Name:	Mike Mickley					
Address:		752 Gapter Rd					
		Boulder		CO	80303		
Phone:	303-499-	3133	Email:	mmickle	e9@idt.net		
Fax: 303-499-5305		Website:					

iii. Technology Description:

The non-toxic, non-hazardous proprietary treatment chemical, X12, is an aqueous solution of inorganic nature. The chemical acts as a catalytic reagent, enabling reactions that normally would not take place except under extreme conditions to take place at ambient temperature and pressure.

iv. Product Performance or Benefits:

There are three primary reactions resulting from use of X12 on aqueous wastes. First, organic chemicals present are degraded and destroyed, significantly decreasing BOD, total HC, TC and other indicators of organic load. Second, the leachable levels of inorganic chemicals, including heavy metals, nitrates, and phosphates, are significantly reduced. Third, the waste is disinfected due to the action of the reagent on the organic bodies of microorganisms and viruses.

Additional information provided Claims Substantiated

v. Technology/product requirements in terms of:

- (a) Minimum farm size (in sow equiv.):
- (b) Space of farm:
- (c) Utilities (energy input, materials, etc.): aeration
- (d) Staff/training: minimal
- (e) Other (please specify):
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:	too early to estimate	

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

vili. Stage of development: Development (technical feasibility established)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e	e.g. need for capital)
Details:				

March 31, 1999

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

product development; demonstration tests

ii. Party responsible for promotion/distribution/developer of product:

	Company	r	SI R Distr	ibutina						
	Contact	Namo:	Bogor Sh	oomokor						
	Addroood		Roger Sh							
	Audress		2928 Wer	ndover		COF	00			
	Phone:	402-475	-4403	Fmail:	rlsmak	er@a	ol.com			
	Fax:	402-475	-4403	Website:						
iii. To	echnology l Biologic	Description al and na	n: tural eleme	nts diges	t waste	and c	apture	escapin	ng ga	ses (N).
iv. P	roduct Per	formance	or Benefits:							
	National	I Pork Pro	oducers "Oc	dor Soluti	ons Init	iative"	in proc	ess.		
	Additiona	al informa	tion provide	d	Clai	ms Sub	ostantiat	ed		Signed Property Agreement
v. Te	chnology/	product re	equirements	in terms (of:					
	(a) Minim	num farm s	size (in sow	equiv.):	no mir	imum				
	(b) Space	e of farm:	product sto	orage						
	(c) Utiliti	ies (energy	y input, mate	rials, etc.): nor	e				
	(d) Staff	/training:								
	(e) Other	r (please sj	pecify):							
vi. C	apital and o	operating	costs:							
	Size of	Operatio	n C (p	apital Co er sow e	osts quiv.)		Annual	Opera	ating	Costs
	(sow e 100 \$	quiv.) Sow	·	none			(pe	er sow	equi	v.)
	300 \$	Sow								
	600 \$	Sow								
	1200	Sow								
	Cost Des	scription:								
Vİİ.	Special Cir	cumstance	es that will a	affect the	econom	ic or te	echnical	feasibili	ity of	the technology/product:
VIII.	Stage of d	levelopmen	it: Comm	nercial la	unch ha	is bee	n carrie	d out		
ix. I	f your tecl	hnology is a	at the pre-c	ommercia	l phase,	what f	further a	octivitie	s are	required to make this a commercially viable
tecr	inology?	Re	esearch	Engi	neering]	Testin	g	Der	nonstration
	Details:	St	aff	Mark	eting		Finand	cial (e.g	g. ne	ed for capital)
x. D	o you have	e a busines:	s plan for co	mmercial	izing you	ur tech	nology?			
xi I	- lave vou n	erformed :	anv market	research	to deter	rmine t	he feasi	bilitv of	the to	echnology for livestock operations?
7.11 I										

Inventory Questionnaire Responses

- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: user verification

Possibly one or two demonstration projects. Can be used in most livestock manure problem areas.

i. Technology/Product Name: Tangential Flow Separator (TFS) Based Systems

ii. Party responsible for promotion/distribution/developer of product:

Company		Gaston County / Animal Environment Specialists Inc				
Contact Name:		Dr. Ian Taylor				
Address:		163 Canterbury Court				
		Blooming	dale	IL	60108	
Phone:	630-924-	6870	Email:	ian.a.ta	ylor@worldnet.att.net	
Fax:	630-924-	6871	Website:			

iii. Technology Description:

A tangential flow separator is essentially a cylindrical vessel with a cone base. The effluent is introduced to the vessel through a feed pipe set at a tangent to the side wall. The main outlet is from the top centre of the vessel. The flow from within the vessel follows the pattern of a flat coiled spring, and is divided so that 90% is discharged as clarified liquor. 10% emerges from the cone base of the vessel and contains all the precipitated or settleable solids.

iv. Product Performance or Benefits:

Odor Reduction: removes 90% of settleable solids; retards the onset of septicity; reduces containment size for separated slurry.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): small mobile units can be shared between farms (batch style)

(b) Space of farm: very small footprint for system

(c) Utilities (energy input, materials, etc.): very low electric consumption

(d) Staff/training: simple tasks = low skill (greater automation possible)

(e) Other (please specify): local supply / storage for basic available / chemicals to enhance separation

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs		
(sow equiv.) 100 Sow		(per sow equiv.)		
300 Sow				
600 Sow 1200 Sow	~\$80,000 US for package	\$1.00 per 1000 gal total		

Cost Description: larger (custom sized) skid mounted.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Available liquid containment, local demand for stabilized "manure concentrate".

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
ntaile				

Details: n/a

March 31, 1999
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: patented technology licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: "manure concentrate" fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: supplement other composting; refeed value (eg. Cattle).
- xv. Market research undertaken concerning by-products: Review and interview of potential users/purchasers - vary regionally
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: lab analysis of flows has already been documented at various sites around world

Awareness of successful operation elsewhere in world and put one in operation in Canada.

ii. Party responsible for promotion/distribution/developer of product:

Company	:	G.T. Envi	ronmenta	l Techno	ology, Inc.
Contact N	lame:	Stuart Ba	nk		
Address:		13071 Sto	one Road	, Suite 0	2
		Pearland		ТΧ	77581
Phone:	281-997-	0200	Email:	gtenvte	c@flash.net
Fax:	281-997-	0201	Website:		

iii. Technology Description:

GT-2000OC addresses the problem of odour control and sludge reduction of the hog manure by providing an enhanced bio-stimulant catalyst to the microbial population. This technology allows the microbial population to be converted from an anaerobic population to the more effective aerobic population.

iv. Product Performance or Benefits:

Additional information provided	Claims Substantiated	Signed Property Agreement
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- v. Technology/product requirements in terms of:
 - (a) Minimum farm size (in sow equiv.): any size farm
 - (b) Space of farm: existing lagoons
 - (c) Utilities (energy input, materials, etc.): n/a
 - (d) Staff/training: existing staff
 - (e) Other (please specify): recycle water from last pond to first pond or recycle single pond
- vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow		\$1875.00/yr
300 Sow		\$5700
600 Sow		\$11,400
1200 Sow		\$22,800

Cost Description:

 vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: The producer will realize an economic value from reduction of sludge from the lagoons and an increased clarity of the effluent water.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

R	esearch	Engineering	Testing	Demonstration
S	taff	Marketing	Financial (e.g	. need for capital)

Details:

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: effluent / irrigation water recycling water
- xiv. Value / Selling Price of by-products: Increased crop growth and soil restoration.
- xv. Market research undertaken concerning by-products: We have not started any market research as to the cost effectiveness of the by product.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification

The hog producer has to be educated to accept that there are products and technologies that may not conform with that is known. The willingness to accept these products and technologies, even as far fetched as some of them may seem, they really do work. Testing will begin in April 1999 by the National Pork Producers Council.

i. Technology/Product Name: Membrane Technology

ii. Party responsible for promotion/distribution/developer of product:

Company:	Koch Me	embrane Syster	ns		
Contact Name:	Kevin Do	onahue			
Address	850 Mai	n Street			
/luur 035.	Wilming	ton MA	01887		
Phone: 978-	694-7175	Email: don	ahuek@kochind.co	m	
Fax: 978-	694-7020	Website:			
iii. Technology Descri Membrane filt	ption: ration for volu	imetric reductio	n of manure. Resu	It is concentrated solids and	d reusable water.
iv. Product Performa	ince or Benefit	S:			
Additional info	rmation provid	led C	laims Substantiated	Signed Property Ag	reement
(a) Minimum fa (b) Space of fai (c) Utilities (en (d) Staff/train (e) Other (pleas	rm size (in sov rm: ergy input, ma ing: se specify):	v equiv.): terials, etc.):			
vi. Capital and operat	ing costs:				
Size of Opera	ation	Capital Costs	Annual Or	perating Costs	
(sow equiv.) 100 Sow	(per sow equiv	.) (per s	ow equiv.)	
300 Sow					
600 Sow					
1200 Sow					
Cost Descripti	011: Capti Opera	al: \$150,000 fo ating: \$0.01/ga	r 4000 gallons/day Illon of manure proc	of manure cessed	
vii. Special Circumst	ances that wil	affect the econ	omic or technical fea	sibility of the technology/prod	luct:
viii. Stage of develop	ment: Deve	elopment (techr	nical feasibility estal	blished)	
ix. If your technolog technology?	y is at the pre-	commercial phas	se, what further activ	vities are required to make th	is a commercially viable
<i></i>	Research	Engineer	ing Testing	Demonstration	
Details:	Staff	Marketing	J Financial	(e.g. need for capital)	

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Cost and performance comparison vs. other methods.

i. Technology/Product Name: Bion Nutrient Management System (NMS)

ii. Party responsible for promotion/distribution/developer of product:

Company	:	Bion Technologies, Inc			
Contact N	lame:	Jeffrey Po	oulsen		
Address:		606 North	French I	Rd. Ste	6
		West Aml	nerst	NY	14228
Phone:	716-697-	3385	Email:	jeffrey.p	ooulsen@gte.net
Fax:	716-691-	3609	Website:		

iii. Technology Description:

V. .

vi.

The Bion NMS process is designed to biologically treat manure and feedlot runoff through a complex series of natural microbial processes. The solids generated from the process have a texture of humus rich topsoil, good nutrient characteristics, and smells like well-tended garden soil.

iv. Product Performance or Benefits:

Bion has developed a body of data generated over the past three years from the Quin Deca Farm site in North Carolina; summary information in provided. Evidence to reduction in odours is purely empirical and not included, however the owner lives less than 100 yards from the operating system with no odour problems.

	Additional information	provided	Claims Substantiated	Signed Property Agreement
v. T	echnology/product requi (a) Minimum farm size (b) Space of farm: a t	rements in terms of: (in sow equiv.): 2 2 5 acres	000 sow equivalents	
	(c) Utilities (energy inc	o 5 acres out, materials, etc.):	10 hp (for aerators and	pumps)
	(d) Staff/training: mi	nimal upon start-up		
	(e) Other (please speci	fy):		
vi. (Capital and operating cost	IS:		
	Size of Operation	Capital Cos	ts Annual Opera	ating Costs
	(sow equiv.) 100 Sow		(per sow	equiv.)
	300 Sow			
	600 Sow			
	1200 Sow			
	Cost Description:	For a new 2000 so \$30-\$60 per sow, existing lagoon sy costs are limited	ow (farrow to wean) farm depending on site layout, stems typically cost \$15-5 to electrical for aeration e	(or equivalent) capital costs would be approx. system requirements, liners etc. Retrofit of \$50 per sow but very site specific. Annual operating quipment and pumps.
vii.	Special Circumstances t	hat will affect the ec	onomic or technical feasibil	ity of the technology/product:
viii.	. Stage of development:	Commercial laun	ch has been carried out	

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Testing

Demonstration

Research

March 31, 1999

Engineering

x. Do you have a business plan for commercializing your technology?

Marketing

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: "BionSoil"
- xiv. Value / Selling Price of by-products:

Currently being sold in New York, BionSoil is used as a potting soil or a soil amendment. The average price during a market study was \$39.37 per cubic yard.

- xv. Market research undertaken concerning by-products:
 A limited market test of blended BionSoil product through retail and commercial outlets in western New York was conducted in 1998.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests growth studies

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Identifying specific producer and/or environmental need (odor reduction, nutrient control, etc) and proposing specific applications is the next step.

i. Technology/Product Name: High Strength Sequential Biotreatment

ii. Party responsible for promotion/distribution/developer of product:

	Company: BioSystem		ns Technology Inc.				
	Contact Name: н.v		H.W. Cox	H.W. Cox			
	Address		2903 Com	nmerce S	t., Suite	e E	
			Blackburg	I	VA	24060	
	Phone:	540-552-	2600	Email:	biosys	@biosys.com	
	Fax:	540-552-	4065	Website:			
iii. To	echnology	Description):				

Sequential biological treatment of liquid high strength animal waste with solids composting of biosolids.

iv. Product Performance or Benefits:

see web page: www.biosys.com

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 25,000 hogs / year

(b) Space of farm: ~ 150' x 60'

(c) Utilities (energy input, materials, etc.): 240 V / 3-phase - 500 amp

(d) Staff/training: Week on-site training

(e) Other (please specify): System designed to be monitored and operated remotely

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs	
(sow equiv.) 100 Sow		(per sow equiv.)	
300 Sow			
600 Sow			
1200 Sow			

Cost Description: This data is subject to final full scale testing. Pilot was unreliable for predictive purposes.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Can use existing lagoons although we will make them considerably smaller

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capital)

Details: Full scale testing needed.

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: joint venture with major producers
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant recycleable water
- xiv. Value / Selling Price of by-products: \$12 - 15 per cubic yard
- xv. Market research undertaken concerning by-products: Joint venture with soil retailers.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

We simply need an opportunity to install a full scale system.

i. Technology/Product Name: Hoffland Process

ii. Party responsible for promotion/distribution/developer of product:

Company		Hoffland E	Environm	ental, In	C
Contact N	lame:	Robert O.	Hoffland		
Address:		10391 Silv	ver Spring	gs Road	I
		Conroe		ТΧ	77303
Phone:	409-856-	4515	Email:	hofflan	d@flex.net
Fax:	409-856-	4589	Website:		

iii. Technology Description:

HEI has developed and is marketing a process and equipment to treat the liquid waste slurry resulting from the large scale confinement of swine. The turn-key system provides all equipment with installation. The process treats the waste to remove not only the solid waste but also the excess nutrients, nitrogen, and phosphorous.

iv. Product Performance or Benefits:

Since the solids are essentially removed, the aerobic bio-oxidation system operates very efficiently. Using aerobic microbial cultures removes all odor.

Additional information provided Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): any facility large enough to employ a flush system of any sort should invest in

(b) Space of farm: solids separation requires a min. of 10' x 15' to a max. of 15' x 40'.

(c) Utilities (energy input, materials, etc.): 3 phase electricity is preferred. Single phase is adequate for small farms.

(d) Staff/training: operating manuals and training is provided.

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	\$600 / \$1000	\$1.50 / \$9.00
300 Sow	\$250 / \$350	\$1.50 / \$9.00
600 Sow	\$200 / \$300	\$1.50 / \$9.00
1200 Sow	\$150 / \$200	\$1.50 / \$9.00

Cost Description: Left values listed above are for dispersing N on crops, right values are for deintrification before irrigation.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

1. Biological removal of nitrogen can only occur in warm months or additional energy must be provided.

- 2. Retrofit: Most waste collection systems can be modified to incorporate the HEI system.
- 3. By-Products: The infrastructure must be developed to economically distribute the by-products.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration	
March 31, 1999		Inventory C	uestionnaire Res	sponses	Page 225 of 258

StaffMarketingFinancial (e.g. need for capital)

Details: The equipment and technology have been developed and are being marketed. The by-product solids requires additional testing and market development.

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:
 - demonstrations direct marketing/sales
- xiii. Marketable By-Products Produced: manure solids fertilizer / soil amendmant compost animal feed
- xiv. Value / Selling Price of by-products: Animal feed - \$100-\$150/ton Fertilizer - \$50-\$100.ton
- xv. Market research undertaken concerning by-products: Animal feed - extensive evaluation Fertilizer - initial evaluation
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

Acceptance of the process requires education of the agricultural industry (and an improvement in the price of pork)

i. Technology/Product Name: Manure Dewatering

ii. Party responsible for promotion/distribution/developer of product:

Company:	Cannon	Cannon River Corp.					
Contact Name	: Bill McIn	Bill McIntosh					
Address:	912 Gree	envale Ave.					
	Northfiel	d MN	55057				
Phone: 507 Fax:	-645-6213	Email: bmcir Website:	ntosh@microassist.co	om			
iii. Technology Desci Remove wat	ription: er from lagoon	refuse, filter, ret	urn water to continua	lly dilute waste, make dry fertilizer.			
iv. Product Perform no data yet.	nance or Benefits	5:					
Additional inf	ormation provid	ed Cla	ims Substantiated	Signed Property Agreement			
v. Technology/produ (a) Minimum f (b) Space of f (c) Utilities (e (d) Staff/trai (e) Other (ple	uct requirement arm size (in sow arm: nergy input, mat ning: ase specify):	s in terms of: / equiv.): don't :erials, etc.): ele	know yet ectricity				
vi. Capital and opera Size of Ope	nting costs: ration	Capital Costs per sow equiv.)	Annual Opera	ating Costs			
sow equiv) 100 Sow	.)	TBD	(per sow	equiv.)			
300 Sow							
600 Sow							
1200 Sov	v						
Cost Descrip	tion:						
vii. Special Circums Spread dry f	stances that will ertilizer, plus st	affect the econor ore, etc.	nic or technical feasibil	ity of the technology/product:			
viii. Stage of develo	pment: Conc	cept (basic resea	arch still necessary)				
ix. If your technolo technoloay?	gy is at the pre-	commercial phase	, what further activitie	es are required to make this a commercially viable			
Dotaile	Research Staff	Engineerin Marketing	ig Testing Financial (e.	Demonstration g. need for capital)			
Dergii2							

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: fertilizer / soil amendmant
- xiv. Value / Selling Price of by-products: don't know
- xv. Market research undertaken concerning by-products: interviews, competition research
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests

Proved effective and cost effective.

ii. Party responsible for promotion/distribution/developer of product:

Company: Contact Name: Address:	EnviroGro	Solutions	s, Inc				
Contact Name:	.lav Horva						
Addrass	ouy norva	th					
MUUI 533.	123 Main	St.					
	Dublin		PA	18917			
Phone: 877-249- Fax: 215-249-	-4922 -4922	Email: Website:	envirog	ro@enter.net			
iii. Technology Description In-vessel compos): ter - create:	s compos	t from h	og manure in 3	-5 days		
iv. Product Performance	or Benefits:						
Additional informat	tion provided	k	Claim	ns Substantiated		Signed Property Agreement	
 v. Technology/product re (a) Minimum farm s (b) Space of farm: 	quirements ize (in sow e < 1/8 acre	in terms o equiv.):	f: ~ 1400				
(c) Utilities (energy	input, mate	rials, etc.):	220	single phase (~	\$100,00	00 USD / month)	
(d) Staff/training:	1 load unlo	ad, 1-2 tir	nes pei	r week, minimu	m trainir	ng	
(e) Other (please sp	ecify):						
vi. Capital and operating c	costs:						
Size of Operation	n C (pe	apital Co er sow eq	sts juiv.)	Annual O	perating	g Costs	
(sow equiv.) 100 Sow				(per s	sow equ	uiv.)	
300 Sow							
600 Sow							
1200 Sow							
Cost Description:							
vii. Special Circumstance May need to enclo in flush op.	es that will a ose in an in	ffect the e expensive	economic e structi	c or technical fea ure. Easily ada	isibility o pts to ai	of the technology/product: ny farm. Needs to include liquid/solid se	eparation
viii. Stage of developmen	t: Field T	rials (pro	duct is	exposed to real	world o	perating conditions)	
ix. If your technology is a	at the pre-co	ommercial	phase, v	vhat further act	ivities ar	re required to make this a commercially via	ble
Re	search	Engin	eering	Testing	D	emonstration	
Sta Details:	aff	Marke	eting	Financia	l (e.g. n	eed for capital)	
x. Do you have a business	s plan for co	mmercializ	zing you	r technology?			

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: independent Ag reps licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: compost
- xiv. Value / Selling Price of by-products: \$5 per cubic yard to \$35 per cubic yard
- xv. Market research undertaken concerning by-products: Agricultural data from USDA; Batelle Research and independent market research for organic soil amendments data.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests testing protocol

Demonstrations! With some government assistance!

i. Technology/Product Name: Manure Drying and Treatment

ii. Party responsible for promotion/distribution/developer of product:

Company:		Hg Engineering					
Contact Name:		Harry Gatley					
Address:		2133 E 9400 S, Suite 153					
		Sandy		UT	84093		
Phone:	801-272-	2411	Email:	harry@	networld.com		
Fax:	801-272-	2411	Website:				

iii. Technology Description:

V.

My process dries and pulverizes manure and seems to reduce pathogens using ultra high velocities and boundary air laminar flow technology. The test units we ran last year showed cattle manure inlet at 40% moisture and 5% discharge with no detectable coliform on the discharge. The dryer dries manure without reducing the protein value. I have also designed a high impact, high velocity pelletizer that eliminates the need of binders.

iv. Product Performance or Benefits:

Additional information provided	Claims Substantiated	Signed Property Agreement
Technology/product requirements in terms of: (a) Minimum farm size (in sow equiv.): (b) Space of farm: (c) Utilities (energy input, materials, etc.): (d) Staff/training:		
(e) Other (please specify):		

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing Demonstra	tion
	Staff	Marketing	Financial (e.g. need for c	apital)
<u></u>				

Details:

x. Do you have a business plan for commercializing your technology?

March 31, 1999

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

ii. Party responsible for promotion/distribution/developer of product:

	<i>y</i> .	•			•	•	
	Company		Oxyzone	Systems, li	nc.		
	Contact N	lame:	Dr. Paul	Ling Tai			
	Address:		30057 Oi	rchard Lake	Rd., Su	iite 250	
			Farmingt	on Hills	MI 4	18334	
	Phone: Fax:	248-855 248-855	-9800 -8125	Email: Website:			
iii. T	Fechnoloav E)escriptio	n:	Hoboltol			
	Patent p	rocess of	f super oxy	dation remo	oving od	or, dust, chemic	cals, permanently from air & water.
iv. F	Product Per	formance	or Benefits	:			
	Additiona	I informa	tion provide	ed	Claims	Substantiated	Signed Property Agreement
v. T	echnology/p	product re	equirements	s in terms of	:		
	(a) Minim	um farm s	size (in sow	equiv.): n	ione		
	(b) Space	of farm:	none				
	(c) Utilitie	es (energy	y input, mat	erials, etc.):	electri	city 110 - 220 v	
	(d) Staff/	/training:	minor				
	(e) Other	(please s	pecify):				
vi. (Capital and c	operating	costs:				
	Size of (Operatio	n ((r	Capital Cos	sts uiv.)	Annual Ope	erating Costs
	(sow ec 100 S	quiv.) Sow	u	\$40 / sow	/	(per so \$ 6	ow equiv.) / year
	300 S	Sow					
	600 S	Sow					
	1200	Sow					
	Cost Des	scription:					
Vİİ.	Special Circ No by-pi no probl	cumstance roduct ex em.	es that will cept O2 ar	affect the ea nd CO2, no	conomic o climate o	or technical feasi conditions - stat	bility of the technology/product: ble at all temperatures. Retrofit and new installatio
Vİİİ.	. Stage of d	evelopmer	it: Comr	mercial laun	ich has b	been carried out	t
İX.	If your tech	nology is	at the pre-c	commercial p	hase, wh	at further activi	ities are required to make this a commercially viable
icu	Dataila	Re St	esearch aff	Engine Market	ering	Testing Financial (Demonstration (e.g. need for capital)
	Details:						
Х.	Do you have	a busines	s plan for c	ommercializi	ng your t	technology?	
xi.	Have you pe	erformed	any market	research to	o determi	ne the feasibility	of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: dedicated distributorship
- xiii. Marketable By-Products Produced: none
- xiv. Value / Selling Price of by-products: none
- xv. Market research undertaken concerning by-products: none
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:
 field tests
 third party verification
 university & engineering institutes

ii. Party responsible for promotion/distribution/developer of product:

<i>J</i>									
Company: Ecological Laboratories,				ories, In	c Teo	chnical Ce	enter		
Contact N	lame:	Mark J. Kı	rupka						
Address:		256 Oaksl	hade Rd.						
		Tabernacl	е	NJ	08088	}			
Phone:	609-268-	1633	Email:	mjkrupł	ka@ao	l.com			
Fax:	609-268-	1647	Website:						
			Website:	http://w	ww.tnc	austria.co	om/micro	be-lift/def	ault

iii. Technology Description:

Microbe Lift HOG is a consortium of naturally occurring bacteria developed to improve the performance of all kinds of biological processes, including suspended growth and fixed film wastewater treatment systems. Microbe Lift Super ENZ is a biological accelerator with white rot fungus enzyme, bio stimulants and a small % of chemical oxidizers as a catalyst. When used in conjunction with Microbe Lift HOG to initiate treatment the performance in enhanced where a boost to performance is required.

iv. Product Performance or Benefits:

Studies were conducted in Switzerland last year; currently studies are underway in North Carolina and Korea.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): can be used cost effectively on farms of any size

(b) Space of farm: used in existing manure collection and holding facilities

(c) Utilities (energy input, materials, etc.): none, although aeration may enhance the benefits.

(d) Staff/training: no specialized staff or training is required. Application takes about 10 minutes per week.

(e) Other (please specify):

vi. Capital and operating costs:

Capital Costs (per sow equiv.)	Annual Operating Costs
	(per sow equiv.)
\$0 **	\$300
\$0 **	\$750
\$0 **	\$1500
\$0 **	\$3000
	Capital Costs (per sow equiv.) \$0 ** \$0 ** \$0 ** \$0 **

Cost Description: ** assumes existing lagoons, storage tanks, treatment system, etc.

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

As a biological product, Microbe Lift HOG will be affected by temperature and pH conditions although it functions over a surprisingly wide range of both. The product can be used in pits, lagoons, tanks, etc. with pH values ranging from 3.5 to 9.5 with little impact on performance. As with most biological processes, low temperature will slow down the activity but good results are generally observed from 4 - 45 C with the optimum performance found in the 10 - 37 C range.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research Engineering Testing Demonstration Staff Marketing Financial (e.g. need for capital)

- Details:
- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: licensed marketing groups/distributors/manufacturers telemarketing
- xiii. Marketable By-Products Produced: liquid slurry
- xiv. Value / Selling Price of by-products: n/a
- xv. Market research undertaken concerning by-products: n/a
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: field tests third party verification

university studies

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

In some cases, we could use more data, more market visibility, and the "donut" factor. i.e. field support and service from distributors.

ii. Party responsible for promotion/distribution/developer of product:

Company: Engineering			ing Conc	epts		
Contact Name: John Pete			ering			
Address	5:	804 Sout	h Broad S	St.		
		Mankato		MN	56001-3822	
Phone: Fax:	507-625 507-387	-8830 -7415	Email: Website:	toast@	emctcnet.com	
			Website:	http://w	ww.agtoast.com	

iii. Technology Description:

A pressurized aerobic treatment process with anaerobic step that removes BOD, N, and P by microbe incorporation. Tertiary treatment.

iv. Product Performance or Benefits:

Reduces H2S by 99.7%, Reduces odour by 99%, reduces NH3 released to atmosphere by 80%.Additional information providedClaims SubstantiatedSigned Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 200

(b) Space of farm: 50 sq. metres small, 100 sq. metres large

(c) Utilities (energy input, materials, etc.): 5 kW for 300 SE - 20 kW for 1000 SE.

(d) Staff/training: Remote control PtC - need 1 week to train - 10 min/(?) inspection

(e) Other (please specify): portable - could use 50 gal water/day for seals

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow	\$80	\$10
300 Sow	\$26	\$5
600 Sow	\$15	\$2.50
1200 Sow	\$10	\$2.00

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Able to replace any lagoon - effluent is pasteurized and drinkable by humans.

viii. Stage of development: Field Trials (product is exposed to real world operating conditions)

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing	Demonstration
	Staff	Marketing	Financial (e.g. need for capital)
Details' sa	ome one needs to h	uu ono Leon deliv	or a triad and t	rue commercial model right

Details: Some one needs to buy one. I can deliver a tried and true commercial model right now.

x. Do you have a business plan for commercializing your technology?

- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies: direct marketing/sales licensed marketing groups/distributors/manufacturers
- xiii. Marketable By-Products Produced: single cell protein effluent / irrigation water
- xiv. Value / Selling Price of by-products: 15 cents/lb.
- xv. Market research undertaken concerning by-products: Make a portable unit for several farmers to share and make their own pit additive deodorant.
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: third party verification

Laws must be enacted to require manure treatment. After that, I have the most efficient competitive way. This can save the Canadian Environment - it is easy to use and aerobic treatment is the best.

i. Technology/Product Name: Biopowder M & Bioliquid 3000

ii. Party responsible for promotion/distribution/developer of product:

Company	y:	Agro Indu	ustrias El .	Alamo	
Contact	Name:				
Address	5.	PO Box 5	530324		
		San Dieg	0	CA	92153-0324
Phone:	619-428-	5638	Email:	mktg@	yucca.com.mx
Fax:	619-428-	6028	Website:		
			Website:	http://w	ww.vucca.com.mx

iii. Technology Description:

Biopowder and bioliquid, whose active ingredient is the extract concentrate from the Yucca schidigera plant, are safe, environmentally friendly, 100% natural products. They reduce the toxic levels of nitrogen compounds, like ammonia, improving the environment, health, productivity and the efficiency properties of animal production. Biopowder M is a Yucca extract in powder form which may be added to animal feed. Bioloquid 3000 is a Yucca liquid extract which can be added to animal drinking water or to waste water in pits or lagoons.

iv. Product Performance or Benefits:

Reduces ammonia and other noxious gases; improves air quality for livestock; reduces ammonia levels in the digestive track and in the metabolic process of the animals; improves feed conversion efficiency; prevents sludge buildup in pits and lagoons.

Additional information provided

Claims Substantiated

Signed Property Agreement

v. Technology/product requirements in terms of:

- (a) Minimum farm size (in sow equiv.):
- (b) Space of farm:
- (c) Utilities (energy input, materials, etc.):
- (d) Staff/training:
- (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.) 100 Sow		(per sow equiv.)
300 Sow		
600 Sow		
1200 Sow		
Cost Description:		

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

Research	Engineering	Testing	Demonstration
----------	-------------	---------	---------------

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
- xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name: Aeration

ii. Party responsible for promotion/distribution/developer of product:

	• •						-		
	Company	:	Natural A	eration In	c.				
	Contact N	Vame:	Gary We	gner					
	Address:		28598 N.	Riffe Roa	ad				
			Reardan		WA	9902	29		
	Phone: Fax:	509-796 509-796	-4825 -4826	Email: Website: Website:	natura http://v	laerati www.ci	on@circu ircul8.com	18.com	
iii. Te	chnology [Descriptio	n:						
iv. Pr	oduct Per	formance	or Benefits	:					
	Additiona	al informa	tion provide	d	Clai	ms Sub	stantiated		Signed Property Agreement
v. rec	 (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other 	of farm s of farm: es (energy /training: (please s	size (in sow y input, mate pecify):	equiv.): erials, etc.)):				
vi. Ca	pital and c	operating	costs:						
	Size of	Operatio	n (Capital Co	osts		Annual C	peratin	ng Costs
	(sow eo 100 S	quiv.) Sow	(P	iei sow e	quiv.)		(per	sow eq	juiv.)
	300 \$	Sow							
	600 \$	Sow							
	1200	Sow							
	Cost Des	scription:							
vii. S	pecial Cir	cumstanc	es that will	affect the	econom	ic or te	echnical fe	asibility	of the technology/product:
viii. S	Stage of d	evelopmer	nt:						
ix. If	your tech	nnology is	at the pre-c	ommercia	l phase,	what f	urther act	tivities a	are required to make this a commercially viable
tuun	iology:	Re St	esearch aff	Engiı Mark	neering etina	9	Testing Financia	D al (e.a. r	Demonstration need for capital)
	Details:				- . .			(· · J· ·	
x. Do) you have	a busines	s plan for co	ommerciali	izing you	ur tech	nology?		
xi. H	ave you pe	erformed	any market	research	to deter	rmine t	he feasibil	ity of the	e technology for livestock operations?

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

ii. Party responsible for promotion/distribution/developer of product:

	J 1					1				
	Company:		Sheaffer I	nternatio	∩al, Ltd.					
	Contact Na	me:	John A. Jo	ohnson						
	Address:		10355 Ha	rvest Lan	e					
			Broadway		VA	22815				
	Phone: 5 Fax: 5	40-896-6 40-896-4	361 361	Email: Website:	johnsor	nfour@rica.ı	net			
iii. Te	chnology Des anaerobic/	scription: /aerobic :	sequentia	treatmer	nt; inten	se aeration;	oxidation.			
iv. Pr	roduct Perfo Eliminates	rmance o s odour a	r Benefits: t Iagoon a	nd in recl	laimed v	vater reduce	es nutrient	content by 75	j%.	
	Additional	informati	on provide	b	Clain	ns Substantia	ited	Signed Prop	erty Agreement	
v. Te	chnology/pro (a) Minimun (b) Space of (c) Utilities (d) Staff/tr (e) Other (p	oduct req n farm siz f farm: v (energy i raining: n blease spe	uirements te (in sow e aries, 4-2 nput, mate ninimal cify):	in terms c equiv.): 0 acres rials, etc.))f: any sizo): varie	e es with farm	; 500,000 -	· 1,000,000 kV	Wh annually off pe	eak
vi. Ca	apital and ope	erating co	sts:							
	Size of Op	peration	C	apital Co	osts	Annua	al Operatir	ng Costs		
	(sow equ 100 So	liv.) w	(þ		quiv.)	(r	er sow eq	luiv.)		
	300 So	w								
	600 So	w								
	1200 S	ow	\$	140 - 150) US		\$23 US			

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product: Above costs are offset by lower ammonia levels, better animal health, and better crop yields on irrigated land.

viii. Stage of development: Commercial launch has been carried out

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

	Research	Engineering	Testing Demonstrat	ion
	Staff	Marketing	Financial (e.g. need for ca	pital)
-				

Details:

x. Do you have a business plan for commercializing your technology?

xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?

March 31, 1999

- xii. Current/Planned Marketing Strategies: direct marketing/sales
- xiii. Marketable By-Products Produced: effluent / irrigation water grain better animal health
- xiv. Value / Selling Price of by-products: 30-50 bushel increase in corn production.
- xv. Market research undertaken concerning by-products: Ammonia impacts in live production, nutrient loading restrictions, odour conflicts
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: University verification

Recognition that manure management requires upfront investment that pays dividends down the road.

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

J 1	•		•	•		
Company:	EM Tech	nologies, In	c.			
Contact Name	: John M. F	Phillips				
Address:	Suite 122	, 1802 W. C	Grant Ro	ad		
	Tucson	/	AZ 8	5745		
Phone: 520 Fax:	-659-9301	Email: Website:				
iii. Technology Descr Effective Mic	iption: roorganisms (E	M); EM Pro	obiotic &	EM Waste Treatm	ent	
iv. Product Perform	ance or Benefits	:				
Additional inf	ormation provide	d	Claims	Substantiated	Signed Property Agreemen	t
v. Technology/produ (a) Minimum f (b) Space of fa (c) Utilities (e (d) Staff/trai (e) Other (plea	uct requirements arm size (in sow arm: nergy input, mate ning: ase specify):	in terms of: equiv.): erials, etc.):				
vi. Capital and opera	iting costs:		4-	Annual Oneset	ing Coots	
Size of Ope	ration (p	er sow equ	its Jiv.)	Annual Operat	ing Costs	
sow equiv) 100 Sow	.)			(per sow e	equiv.)	
300 Sow						
600 Sow						
1200 Sov	V					
Cost Descrip	tion:					
vii. Special Circums	tances that will	affect the ec	conomic o	r technical feasibilit	y of the technology/product:	
viii. Stage of develo	pment:					
ix. If your technolo	gy is at the pre-c	ommercial p	hase, wh	at further activities	are required to make this a con	nmercially viable
Details:	Research Staff	Engine Market	ering ing	Testing Financial (e.g	Demonstration . need for capital)	
Details:						
x. Do you have a bu	siness plan for co	ommercializi	ng your t	echnology?		
xi. Have you perfor	med any market	research to	determir	ne the feasibility of t	he technology for livestock ope	rations?
xii. Current/Planne	d Marketing Stra	ategies:				
March 31, 1999		Ir	ventory (Questionnaire Respo	nses	Page 245 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

5 1							
Company:		Dry Vac	Environme	ental			
Contact N	lame:	Mark Ch	addick				
Address:		101 Nort	h Front Str	eet			
		Rio Vista	a	CA	94571		
Phone:	707-374	-7500	Email:				
rax: iii Technology D	707-374 Ascrintia	-7505 n·	website:				
iv Droduct Dort	formanco	or Ronofite	c.				
N. FI UUUCL FEI	l informa	tion provid	od	Cloir	ne Substantiated	Signad Droparty Agraama	nt
Additiona	i informa	tion provid	eu	Ciali	ns substantiated	Signed Property Agreeme	111
(a) Minim (b) Space (c) Utilitie (d) Staff/ (e) Other	um farm s of farm: es (energy (training: (please s	size (in sow y input, mat pecify):	/ equiv.): :erials, etc.)	:			
vi. Capital and o	perating	costs:					
Size of (Operatio	n	Capital Co	osts	Annual Opera	ating Costs	
(sow eo 100 S	quiv.) Sow	(per sow e	quiv.)	(per sow	equiv.)	
300 S	Sow						
600 S	Sow						
1200	Sow						
Cost Des	cription:						
vii. Special Circ	cumstance	es that will	affect the	economi	ic or technical feasibil	ity of the technology/product:	
viii. Stage of de	evelopmer	nt:					
ix. If your tech technology?	inology is	at the pre-	commercial	phase,	what further activitie	es are required to make this a co	ommercially viable
Details:	Re St	esearch aff	Engir Marke	neering eting) Testing Financial (e.	Demonstration g. need for capital)	
x. Do you have	a busines	s plan for c	commerciali	zing you	ır technology?		
xi. Have you be	erformed	anv marke	t research t	to deter	mine the feasibility of	the technology for livestock op	erations?
xii. Current/Pla	anned Ma	rketina Str	ategies:			у, соостор	
March 31, 1999				Invento	ry Questionnaire Resp	onses	Page 247 of 2

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

Company	:	BioSUN S	Systems					
Contact I	Name:	Guy Mille	r					
Address:		Suite 700), 5775 Wa	ayzata l	Blvd.			
		Minneapo	olis	MN	55416			
Phone: Fax:	612-525- 612-417-	2251 0729	Email: Website:					
iii. Technology [Description	1:						
Biologic:	al treatme	ent of EMS	plus aera	tion				
IV. Product Per	Tor mance	or Benefits	:		<u>.</u>			
Additiona	al informat	tion provide	d	Clair	ns Substa	antiated	Signed Property Agreement	
v. Technology/ (a) Minim (b) Space (c) Utiliti (d) Staff, (e) Other	product re hum farm s e of farm: es (energy /training: f (please sp	quirements ize (in sow input, mate pecify):	in terms c equiv.): erials, etc.)	of: :				
vi. Capital and c	operating c	costs:						
Size of	Operatior	n ((n	Capital Co	osts auiv.)	Ar	nual Oper	rating Costs	
(sow eo 100 S	quiv.) Sow	14		4)		(per sow	w equiv.)	
300 \$	Sow							
600 \$	Sow							
1200	Sow							
Cost Des	scription:							
vii. Special Cir	cumstance	s that will a	affect the	economi	c or tech	nical feasibi	ility of the technology/product:	
viii. Stage of d	evelopmen	t:						
ix. If your tech technology?	nnology is a	at the pre-c	ommercial	phase, v	what fur	ther activiti	ies are required to make this a commercially vi	able
toonnorogy	Re	search	Engir	neering	Te	esting	Demonstration	
Details:	Sta	aff	Marko	eting	F	inancial (e	e.g. need for capital)	
x. Do you have	a business	s plan for co	ommerciali	zing you	ır technol	ogy?		
xi. Have you pe	erformed a	any market	research	to deter	mine the	feasibility o	of the technology for livestock operations?	
xii. Current/Pl	lanned Mar	- keting Stra	ategies:			-		
		0	J					

March 31, 1999

Inventory Questionnaire Responses

Page 249 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

xvii. In your opinion, what must be accomplished before your technology/product is accepted to Canadaian conditions and the circumstances under which it would be useful:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

Company:		ADI Systems Inc. / Bio Specific Systems, USA						
Contact Name:		Joe Kowa	Joe Kowalski					
Address	Address:		Suite 300, 1133 Re					
		Fredricto	n	NB	E3B 3Z2			
Phone: Fax:	506-452 506-452	-7307 -7388	Email: Website:					

iii. Technology Description:

utilizes high oxidation rates through biostimulation and selective bioaugmentation; use of bacterial aggregates

iv. Product Performance or Benefits:

Additional information provided	Claims Substantiated	Signed Property Agreement
Technology/product requirements in terms of:		
(a) Minimum farm size (in sow equiv.):		

(b) Space of farm:

V.

- (c) Utilities (energy input, materials, etc.):
- (d) Staff/training:
- (e) Other (please specify):

vi. Capital and operating costs:

Size of Operation	Capital Costs (per sow equiv.)	Annual Operating Costs
(sow equiv.)		(per sow equiv.)
100 Sow		
300 Sow		
600 Sow		
1200 Sow		
0		

Cost Description:

vii. Special Circumstances that will affect the economic or technical feasibility of the technology/product:

viii. Stage of development:

ix. If your technology is at the pre-commercial phase, what further activities are required to make this a commercially viable technology?

 Research	Engineering	Testing	Demonstration
Staff	Marketing	Financial (e.g. need for capital)

Details:

- x. Do you have a business plan for commercializing your technology?
- xi. Have you performed any market research to determine the feasibility of the technology for livestock operations?
xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

- xiv. Value / Selling Price of by-products:
- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

in run (j roopo										
Compan	y:	Ekokan L	LC							
Contact Name:		Alexandra Kantardjieff								
Address	S:	103 Arbo	r Way, Su	ite 1D						
		Cary		NC	27513					
Phone: Fax:	919-469 919-467	-3727 -0294	Email: Website:							
iii. Technology Anaero	Description bic biofilte	ו: r								
iv. Product Pe	rformance	or Benefits	:							
Additior	nal informa	tion provide	ed	Clair	ns Substantiated	Signed Property Agreement				
v. Technology, (a) Minin (b) Spac (c) Utilit (d) Staf (e) Othe	/product re mum farm s ce of farm: ties (energy f/training: er (please sj	equirements size (in sow r input, mate pecify):	s in terms (equiv.): erials, etc.)	of:):						
vi. Capital and	operating	costs:								
Size of	Operatio	n (Capital Co	osts	Annual Opera	ting Costs				
(sow equiv.) 100 Sow				equiv.)						
300	Sow									
600	Sow									
120	0 Sow									
Cost De	escription:									
vii. Special Ci	rcumstance	es that will	affect the	economi	c or technical feasibili	ty of the technology/product:				
viii. Stage of	developmer	it:								
ix. If your technology?	chnology is	at the pre-c	commercial	l phase, v	what further activitie	s are required to make this a com	mercially viable			
Details:	Re St	esearch aff	Engir Mark	neering eting	Testing Financial (e.ç	Demonstration g. need for capital)				
x. Do you hav	e a busines	s plan for c	ommerciali	izing you	ir technology?					
xi. Have you p	performed	any market	research	to deter	mine the feasibility of	the technology for livestock oper	-ations?			
xii. Current/l	Planned Ma	- rketing Stra	ategies:		,					
March 31, 1999	9	-	-	Invento	ry Questionnaire Respo	onses	Page 253 of 258			

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

i. Technology/Product Name:

ii. Party responsible for promotion/distribution/developer of product:

5 1			•	•				
Company:	Global V	/aste Manag	gement					
Contact Nam	e: Rob Ada	ims						
Address:	2430 Ea	st Highway 1	153					
	Beaver	ι	UT 84	4713-1913				
Phone: 43 Fax:	5-438-1716	Email: Website:						
iii. Technology Desc Chemical a	ription: nd polymer used	d in solid sep	paration					
iv. Product Perform	mance or Benefit	S:						
Additional in	formation provid	ed	Claims S	ubstantiated	Signed Property Agreem	ent		
v. Technology/proc (a) Minimum (b) Space of f (c) Utilities ((d) Staff/tra (e) Other (ple	luct requirement farm size (in sow farm: energy input, mat ining: ease specify):	s in terms of: / equiv.): :erials, etc.):						
vi. Capital and oper	ating costs:	Canital Cos	te	Annual Oper	ating Costs			
Size of Operation		(per sow equiv.)						
sow equiv) (sow equiv	/.) '	(per sow equiv.)						
300 Sow	,							
600 Sow	,							
1200 So	w							
Cost Descri	otion:							
vii. Special Circum	stances that will	affect the ec	conomic or	technical feasibil	lity of the technology/product:			
viii. Stage of devel	opment:							
ix. If your technolo technology?	ogy is at the pre-	commercial p	hase, wha	t further activitie	es are required to make this a c	commercially viable		
Details:	Research Staff	Engine Market	ering ing	Testing Financial (e.	Demonstration .g. need for capital)			
x. Do you have a b	usiness plan for c	commercializi	ng your te	chnology?				
xi. Have you perfo	rmed any marke	t research to	determine	e the feasibility of	f the technology for livestock o	perations?		
xii. Current/Plann	ed Marketing Str	ategies:		5				
March 31, 1999	-	- Ir	ventory Q	uestionnaire Resp	oonses	Page 255 of 2		

age 255 of 258

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

xv. Market research undertaken concerning by-products:

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:

i. Technology/Product Name: Biozome

ii. Party responsible for promotion/distribution/developer of product:

	5 .	•			•					
	Company		Biozome							
Contact Name: Address:		Guy McGowen								
		4606 Copano Court								
			Austin		ТΧ	7874	19			
	Phone: Fax:	512-282 512-292	-2087 -6419	Email: Website: Website:	http://w	ww.bi	ozome.co	om		
iii. Te	chnology l	Description	n:							
iv. Pr	roduct Per	formance	or Benefits:							
	Additiona	al informa	tion provide	d	Clain	ns Sub	stantiated	ł	Signed Property Agreement	
v. Te	chnology/ (a) Minim (b) Space (c) Utiliti (d) Staff (e) Other	product re num farm s e of farm: es (energy /training: - (please sp	equirements size (in sow o y input, mate pecify):	in terms c equiv.): rials, etc.))f:):					
vi. Ca	pital and o	operating	costs:							
Size of Operation		n C	Capital Costs			Annual Operating Costs				
(sow equiv.) 100 Sow		(P	(per sow equiv.) (per sow equiv.)							
	300 \$	Sow								
	600 \$	Sow								
	1200	Sow								
	Cost Des	scription:								
vii. S	Special Cir	cumstance	es that will a	affect the	economi	c or te	echnical fe	asibilit	ty of the technology/product:	
viii.	Stage of d	evelopmer	nt:							
ix. If tech	f your tecl	hnology is a	at the pre-co	ommercial	phase, v	what f	urther ac	tivities	s are required to make this a commercially viable	
COUL	nonogy:	Re St	esearch aff	Engir Mark	neering eting		Testing Financia	al (e.g	Demonstration g. need for capital)	
	Details:				J					
x. Do	o you have	a busines	s plan for co	mmerciali	zing you	r tech	nology?			
xi. H	ave you p	erformed	any market	research	to deter	mine t	he feasibil	ity of 1	the technology for livestock operations?	

xii. Current/Planned Marketing Strategies:

xiii. Marketable By-Products Produced:

xiv. Value / Selling Price of by-products:

- xv. Market research undertaken concerning by-products:
- xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product: