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 Importing Ltd.

Contact Name: Mr. Hilar 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

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) Other (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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
300 Sow		
600 Sow		
1200 Sow		

Cost Description: not applied yet 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?

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:

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.

i. Technology/Product Name: Near-Infrared Spectroscopy (NIRS) Tech ID: C-04

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

Company: PDK Projects, Inc.

Contact Name: Dr. Diane F. Malley

Address: 365 Wildwood Park

Winnipeg MB R3T 0E7

Phone: 204-475-2899 Email: pdk@mb.sympatico.ca

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) Other (please specify): capital cost outlay to have equipment on site; otherwise samples can be analyzed in the laboratory

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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:

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 capital)**

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
targeted mailings/brochures
media releases/commercial advertising
company website

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 Tech ID: C-06

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

Company: Andrey Levin, Independent Inventor/Consulter

Contact Name: A. Levin

Address: #118 - 8460 Lansdowne Rd.

Richmond BC V6X 3G8

Phone: 604-214-8164 Email: anlevin@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 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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?

Research **Engineering** **Testing** **Demonstration**
Staff **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.

i. Technology/Product Name: NOC-Zeolite Natural Odour Control Tech ID: C-11

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

Company: C2C Mining Corporation

Contact Name: Vern Hogg

Address: 503, 604 - 1st St. SW

Calgary AB T2P 3B1

Phone: 403-264-5352 Email: c2c@ezpost.com

Fax: 403-237-9260 Website:

iii. Technology Description:

Molecular encapsulation by zeolites

iv. Product Performance or Benefits:

Reduces odors as per application rates. Works under aerobic and anaerobic conditions.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

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

(b) Space of farm: storage for product 6' x 4'

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

(d) Staff/training: user friendly - minimal

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	~ $225 per tonne	as required
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

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

Can be field farmed after use; benefits soils and reduces nitrate development. Useful in permitting new intensive livestock operations.

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: R&D ongoing

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
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

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:

Establishment of cost benefits against regulations.

i. Technology/Product Name: Manure Away Tech ID: C-12

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

Company: Cyrus Consulting

Contact Name: Dr. John Olubobokun

Address: 180 St. Lawrence Cres.

Saskatoon SK S7K 3W7

Phone: 306-244-9787 Email:

Fax: 306-244-1036 Website:

iii. Technology Description:

Microbial pit or lagoon additive. Converts odorous end products to non-odorous or less odorous products.

iv. Product Performance or Benefits:

Reduces level of nitrogen, phosphate, and volatile fatty acids (odors).

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): none

(b) Space of farm: storage facility (10' x 10')

(c) Utilities (energy input, materials, etc.): mixer, sprayer

(d) Staff/training: dilution & mixing ratios. Frequency of spraying.

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
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?

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

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:

Convincing local trials and financing

i. Technology/Product Name: Autothermal Thermophilic Aerobic Digestion Tech ID: C-13

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

Company: Sanitherm Engineering Ltd.

Contact Name: R. Smith

Address: 431 MTN HWY

North Vancouver BC V2J 2L1

Phone: 604-986-9168 Email: saneng@direct.ca

Fax: 604-986-5377 Website:

iii. Technology Description:

The technology stabilizes and disinfects hog manure for use as a biosolid.

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.): n/a

(b) Space of farm: n/a

(c) Utilities (energy input, materials, etc.): n/a

(d) Staff/training: n/a

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

to the environmental markets in Canada

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:
n/a

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:

Too expensive for livestock operations

i. Technology/Product Name: Ecofluid USBF Tech ID: C-16

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

Company: Purestream / Ecofluid LLC

Contact Name: John Sainas

Address: #2 1020 W Pender St..

Vancouver BC V6E 2N7

Phone: 604-662-4544 Email: jsainas@ecofluid.com

Fax: 604-662-4564 Website:

iii. Technology Description:

Biological aerobic treatment of hog manure effluent. Final product water quality <30 mg/l BOD, <50 mg/l NH3, <40 mg/l TSS, & odour free.

iv. Product Performance or Benefits:

Reduces BOD/TSS/NH3 by 95% due to aerobic process sludge is stabilized and odour free. Eliminates odour from effluent fraction.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 100 sow equivalent

(b) Space of farm: 5m by 5m

(c) Utilities (energy input, materials, etc.): electricity

(d) Staff/training: 4 hours / week

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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

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:

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

i. Technology/Product Name: "Hog Mop" - Hog Manure Processing System Tech ID: C-17

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

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

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:

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

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.

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: 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.

i. Technology/Product Name: T-R Separator Tech ID: C-18

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

Company: Blossom Agritec

Contact Name: Kerry Doyle

Address: 2584 James St.

Abbotsford BC V2T 3L5

Phone: 604-852-1688 Email: kerrydoy@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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 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

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. Technology/Product Name: Continuous Flow Rotary Oven Tech ID: C-19

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

Company: Stromaze Inc.

Contact Name: George Eades

Address: 253 Route 138

Ormstown QC J0S 1K0

Phone: 450-829-2547 Email: geoeades@hotmail.com

Fax: Website:

iii. Technology Description:

The unit is a thermal unit which will dry material at 10% dry solids to any required dry matter.

iv. Product Performance or Benefits:

I have dried municipal waste with minimal odours. I have not tried scrubbing the air to reduce odour. The volumes of air are very small scrubbing would not be a problem. The products are steam and organic matter.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): can readily be sized to operation

(b) Space of farm: 10 x 10 x 30 footprint

(c) Utilities (energy input, materials, etc.): natural gas, propane or on site generated methane

(d) Staff/training: minimal

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

I would like to know what the industry acceptable cost estimate for manure handling is. I believe the technology will fall well within these norms.

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:
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

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 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 Tech ID: C-21/O-14

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 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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
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.

i. Technology/Product Name: Biodigestion Activator Tech ID: C-22

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

Company: SHAC Environmental Products Inc

Contact Name: Gary Lehr

Address: Box 73

Medicine Hat AB T1A 7E5

Phone: 403-527-0553 Email: SHAC@telusplanet.net

Fax: 403-529-9334 Website:

iii. Technology Description:

By activating and balancing biodigestion process in manure, less gases are released. This translates to less odours and improved production.

iv. Product Performance or Benefits:

Attached study done by Iowa State University

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 0

(b) Space of farm: 0

(c) Utilities (energy input, materials, etc.): 0

(d) Staff/training: minimal

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

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

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

i. Technology/Product Name: Envirozym Series (Manure Degradation) Tech ID: C-25

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

Company: Envirosafe Chemicals Canada

Contact Name: Jim Davey

Address: 3207 Wells Avenue

Saskatoon SK S7K 5W4

Phone: 306-933-0505 Email: envirosafechem.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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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
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

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:

Pilot project - cost.

i. Technology/Product Name: Manure and Soil Testing for Nutrient and Contaminant Tech ID: C-26

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

Company: Enviro-Test Laboratories

Contact Name: Pat Flaten

Address: 124 Veterinary Road

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

Details: 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:

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.

i. Technology/Product Name: Manure Recovery System Tech ID: C-28

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

Company: ATD Waste Systems Inc.

Contact Name: J.V. Van Slyke

Address: 3095 W 24th Ave.

Vancouver BC V6L 1R7

Phone: 604-736-4474 Email: vicatd@direct.ca

Fax: 604-736-4493 Website:

iii. Technology Description:

Zero discharge on-farm chemical/mechanical system.

iv. Product Performance or Benefits:

Under development

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 300

(b) Space of farm: minimal

(c) Utilities (energy input, materials, etc.): n/a

(d) Staff/training: computer controlled

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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:

All-weather proof, daily processing of liquid waste, dry organic fertilizers.

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)**

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:

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

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: Growing Media Ingredients and Fertilizers Produced from Tech ID: C-30

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

Company: Transform Compost Systems

Contact Name: John Paul

Address: 34642 Mierau Street

Abbotsford BC V2S 4W8

Phone: 604-504-5660 Email: transform@bc.sympatico.ca

Fax: 604-504-5666 Website:

iii. Technology Description:

In terms of working with hog producers, we have one project where we are producing growing media from separated hog solids, using worms to produce the solids. Vermicompost has growth promoting properties for plant growth. All products are free of weed seeds, pathogens and objectionable odours.

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Solid/Liquid Separator Tech ID: C-32

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

Company: GODRO

Contact Name: Pascal Russell

Address: 102 5th Rang Milton Rd.

Roxton Pond 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 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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 Tech ID: C-36

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

Company: bp Environmental

Contact Name:

Address: #643, 21-10405 Jasper Ave.

Edmonton AB T5J 3S2

Phone: 780-430-1566 Email: bpenviro@connect.ab.ca

Fax: Website:

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 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Liquid Manure Handling Equipment Tech ID: C-38

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

Company: Team Landmark

Contact Name: Randy Davage

Address: Box 70

Landmark MB R0A 0X0

Phone: 204-355-4061 Email: rdavage@mb.sympatico.ca

Fax: 204-355-4067 Website:

iii. Technology Description:

- Hydro 3 Point Hitch Manifold System - manure injection
- Husky's Elite Model - liquid manure spreader
- Liquid manure pumps

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: TurboGenerator Tech ID: C-39

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

Company: Mercury Electric Corporation / Allied Signal

Contact Name: Rob Woronuk

Address: 1130, 333 - 11th Ave. SW

Calgary AB T2V 4X3

Phone: 403-261-6811 Email: gasenerg@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
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)**

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 Tech ID: C-40

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

Company: Pollution Control Technologies Ltd.

Contact Name: Troy D. Lapul

Address: Suite 100, 4500 - 16th Ave NW

Calgary AB T3B 0M6

Phone: Email:

Fax: Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Ozone Generators Tech ID: C-41

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

Company: Envron Environmental

Contact Name: Allan Finney

Address: 4317 Robinson St.

Regina SK S4S 3E4

Phone: 306-586-3353 Email: allan.finney@sk.sympatico.ca

Fax: 306-584-2595 Website:

Website: http://www3.sk.sympatico.ca/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 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Covered In-Ground Anaerobic Reactor (CIGAR) Tech ID: C-42

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

Company: NovaTec Consultants Inc

Contact Name: Dr. Troy Vassos

Address: 224 West 8th Avenue

Vancouver 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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

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.

i. Technology/Product Name: Tech ID: C-47

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

Company: PureLean Hogs

Contact Name: Bob Notenbomer

Address: 666 – 4th Street SE

Medicine Hat AB T1A 0K9

Phone: 403-504-0364 Email:

Fax: 403-528-9922 Website:

iii. Technology Description:

Composting

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-48

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

Company: EarthCorp Environmental Ltd.

Contact Name: Cindy Duncan

Address: 41 Hidden Valley Gate NW

Calgary AB T3A 5M1

Phone: 403-275-1878 Email:

Fax: 403-275-9735 Website:

iii. Technology Description:

Biological Trigger Mechanism (BTM) & Humic acid (H-A) products

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-49

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

Company: Agrinet / Bio/Masster

Contact Name: Brad Drechler

Address: #204, 4711 – 51 Ave.

Red Deer AB T4N 6H6

Phone: 403-347-7877 Email:

Fax: 403-347-7890 Website:

iii. Technology Description:

Slurry separation

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-50

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

Company: Protect Environmental Products Ltd.

Contact Name: Ken Kingsmith

Address: Bay 6, 1303 – 44 Avenue NE

Calgary AB T2E 6L5

Phone: 403-291-4211 Email:

Fax: 403-291-4226 Website:

iii. Technology Description:

ADAB Sorbent - a ground polyurethane foam

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-51

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

Company: Nutri-Soils Inc.

Contact Name: Geoffrey Dobbs

Address: 304 – 1324 11th Ave SW

Calgary AB T3C 0M6

Phone: 403-245-1481 Email:

Fax: 403-245-1407 Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-52

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

Company: Space Carbon Insulation Inc. / Industrial World Technology Inc.

Contact Name: Joeseph Iwasenko

Address: Suite 203, 3511 – 118 Ave.

Edmonton AB T5W 4P6

Phone: 403-471-2355 Email:

Fax: 403-477-9511 Website:

iii. Technology Description:

processing fecal matter into Carbon Black, Fertilizer, Ammonia, and Methane; cyrogenic freezing storage containers

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-53

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

Company: TRIZONE International Technologies

Contact Name: Robert Tremblay

Address: 24 Rivervalley Drive SE

Calgary AB T2C 3K6

Phone: 403-279-9232 Email:

Fax: 403-279-9232 Website:

iii. Technology Description:

Ozone products for use in storage treatment

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-54

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

Company: Aquasol Technologies

Contact Name: Jose Lourenco

Address: 17307 – 107 Avenue

Edmonton AB T5S 1E5

Phone: 403-487-4243 Email:

Fax: 403-487-8875 Website:

iii. Technology Description:

Complete treatment - BAWT (biological animal waste treatment) process

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-56

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

Company: Reid Crowther

Contact Name: Gerry Stevens

Address: 201 – 3275 Lakeshore Rd

Kelowna BC V1W 3S9

Phone: 250-762-3727 Email:

Fax: Website:

iii. Technology Description:

mounded static pile composting

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-57

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

Company: Techni-Grow Greenhouses

Contact Name: Brian Pouwels

Address: 7512 Le Feuvre Road

Langley BC V3A 4P9

Phone: 604-792-0097 Email:

Fax: (604) 792-6558 Website:

iii. Technology Description:

Composting

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-58

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

Company: R.J. Marks & Sonic Fertilizers Ltd.

Contact Name: R.J. Marks

Address: Box 2276, Station Main

Sardis BC V2R 1A6

Phone: Email:

Fax: Website:

iii. Technology Description:

water treatment unit; removal of solids for drying, sterilization, and pelletizing

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-60

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

Company: DGH Engineering

Contact Name: Dr. Shahnaz Danesh

Address: 12 Aviation Blvd.

St. Andrews MB R1N 3N5

Phone: 204-334-8846 Email:

Fax: 204-334-6965 Website:

iii. Technology Description:

Low temperature anaerobic digestion

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-61

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

Company: EC Consulting

Contact Name: Doug Erdman

Address: 111 Lodge Ave

Winnipeg MB R3J 0R6

Phone: 204-896-3871 Email:

Fax: 204-896-3871 Website:

iii. Technology Description:

E-beam radiation

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-62

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

Company: AgWaste Management Corp.

Contact Name: Jean-Noel Guyot

Address: Box 179

Oak Bluff MB R0G 1N0

Phone: 204-895-4370 Email: agwaste@autobahn.mb.ca

Fax: 204-895-4370 Website:

iii. Technology Description:

Provide custom surface application of liquid fertilizer through a line-tractor

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-63

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

Company: Nelson River Construction

Contact Name: Martin Hildebrand

Address: 101 Dawson Rd.

Winnipeg MB R2J 0S6

Phone: 204-949-8700 Email:

Fax: 204-237-8337 Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-64

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

Company: Modern Organics Inc.

Contact Name: Ed Mayer

Address: 1350 – B Spruce Street

Winnipeg MB R3H 0Z6

Phone: 204-775-3433 Email:

Fax: 204-772-7258 Website:

iii. Technology Description:

filtration, compression drying, densifying to fuel a combustion engine gen-set

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-65

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

Company: PMG Construction LTD.

Contact Name: Jerry Sorokowski

Address: 2036 Sinclair St.

Winnipeg MB R2V 4S5

Phone: 204-334-8815 Email:

Fax: 204-334-8815 Website:

iii. Technology Description:

Clivus Multrum - separating solids & liquids; composting; and liquids treatment

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-66

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

Company: AGRI Solutions

Contact Name: Chad Hughes

Address: 1530 18th Street N

Brandon MB R7C 1A5

Phone: 204-725-3960 Email:

Fax: 204-725-1382 Website:

iii. Technology Description:

EMS aeration

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-70

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

Company: Original Vermitech Systems

Contact Name: Albert Eggan

Address: 2328 Queen St. E

Toronto ON M4E 1G9

Phone: 416-693-1027 Email:

Fax: 416-693-9744 Website:

iii. Technology Description:

Separation/ Composting

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-71

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

Company: Delta Engineering

Contact Name: George Brown

Address: 2301 St. Laurent Blvd.

Ottawa ON K1G 4J7

Phone: 613-521-0348 Email:

Fax: 613-521-5833 Website:

iii. Technology Description:

Snowfluent Atomizing Freeze Crystallization (AFC)

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-72

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

Company: Ontario Hydro Technologies

Contact Name: Paul Dinner

Address: 800 Kipling Ave.

Toronto ON M8Z 5S4

Phone: 416-207-5694 Email:

Fax: Website:

iii. Technology Description:

OHT/RCM Treatment System; bio-digestion and chemical separation.

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-74

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

Company: Atara Corporation

Contact Name: Dev Jassal

Address: 9700 Henri-Bourassa West

Ville St-Laurent QC H4S 1R5

Phone: 514-331-8332 Email:

Fax: 514-335-9346 Website:

iii. Technology Description:

Integrated Biologically Active Clarification (IBAC)

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-75

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

Company: DEC Group

Contact Name:

Address: Suite 704, 1100 Cremazie Blvd. East

Montreal QC H2P 2X2

Phone: 514-593-1001 Email:

Fax: 514-593-1479 Website:

iii. Technology Description:

DEC 2000 - thermal dehydration

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-76

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

Company: PAMI

Contact Name: David Gullacher

Address: P.O. Box 1060

Humbolt SK S0K 2H0

Phone: 306-682-2555 Email:

Fax: 306-682-5080 Website:

iii. Technology Description:

shallow injection of liquid hog manure on grassland

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-77

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

Company: Western Organics Ltd.

Contact Name: Alvey Halbgewachs

Address: 3134 Dewdney Ave

Regina SK S4T 0Y

Phone: 306-525-5871 Email:

Fax: 306-352-8691 Website:

iii. Technology Description:

In-vessel Composting

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Bercan Additives for Aerobic/Anaerobic Facultative Tech ID: C-79

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

Company: BERCAN INC.

Contact Name: Allan J. McInnes

Address: 6645 Elm Road

Lantzville 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) Other (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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
300 Sow		
600 Sow		
1200 Sow		

Cost Description: We have enclosed a copy of the Marten Marietta Technologies demonstration done by support of the north Carolina University.

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?

Research **Engineering** **Testing** **Demonstration**
Staff **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.

i. Technology/Product Name: CBPA Tech ID: C-80

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

Company: EcoChem Biotech Inc.

Contact Name: Wm. John Sanger

Address: CP Box 1388

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

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 Tech ID: C-81

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

Company: Enviro-Science Laboratories, Inc.

Contact Name: Timothy Knight

Address: A - 34252 industrial Way

Abbotsford BC V2S 7M6

Phone: 1-800-567-1191 Email: timk@borak.com

Fax: 604-850-5950 Website:

Website: http://www.borak.com

iii. Technology Description:

Used as both a pit additive and a food additive (in hogs' drinking water). Prevents the growth of bacteria that are responsible for the production of gases, in turn reslting in significant odour reduction.

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Bacta-Pur Tech ID: C-83

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

Company: International Ecological Technologies Inc.

Contact Name: Scott Moffat

Address:

North Hatley QC

Phone: 819-842-2494 Email:

Fax: 819-842-2902 Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Concrete Slurry Tank System Tech ID: C-84

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

Company: Con-Force Sturctures Limited

Contact Name: Rudy Sirke

Address: 301-1st Ave

Regina SK S4N 4Z1

Phone: 306-543-2662 Email:

Fax: 306-775-2340 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 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

i. Technology/Product Name: Bio-Fert Process Tech ID: EA-01

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 Signed Property Agreement

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

Cost Description: Depends on type of farm and size. Feeder/farrow-finish have different types of manure, therefore different needs.

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?

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

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:

i. Technology/Product Name: BIOLISER Tech ID: EA-02

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

Company: Meunerie J.B. Dionne 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

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	$50,000	
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.

i. Technology/Product Name: Floating Cover Tech ID: EA-03

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

Company: Engrais Naturels McInnes

Contact Name: James McInnes

Address: 971 LaSalle

St. Bruno QC

Phone: 450-441-6987 Email:

Fax: 450-283-3834 Website:

iii. Technology Description:

Floating cover - (description is in French)

iv. Product Performance or Benefits:

82% odour 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	none	
300 Sow	"	$8.33 - 1600 m3
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: 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?

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 Tech ID: EA-04

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

Company: Dept. of Forest Resources & Agri-Foods

Contact Name: Rosalind Pound

Address: Provincial Agriculture Bldg
Box 8700
St. Johns NF A1B 4J6

Phone: 709-729-2809 Email: rpound@agric.dffa.gov.nf.ca
Fax: 709-729-0205 Website:

iii. Technology Description:

Fish silage made from offal - by-products of processing. By-product addition will reduce feed cost and utilize fish offal waste.

iv. Product Performance or Benefits:

Work to substitute a portion of the feed - "savings"

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): no. sows = 70

(b) Space of farm: acreage -

(c) Utilities (energy input, materials, etc.): minor equipment

(d) Staff/training: one on one with equipment staff

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

Research **Engineering** **Testing** **Demonstration**
Staff **Marketing** **Financial (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?

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:

n/a

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

growth performance of the pigs

cost savings

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:

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

i. Technology/Product Name: Closed Vessel Composting Tech ID: EA-05

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

Company:
Contact Name: Michel Morin
Address: 936 Rg St-Philippe
St-Anselme QC
Phone: 418-885-4790 Email:
Fax: Website:

iii. Technology Description:

iv. Product Performance or Benefits:

98% odour reduction
50% reduction in solids and liquids volume

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 100 sows
(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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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 Tech ID: EA-06

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

Company: Innotag Inc.

Contact Name: Justin LaRouche

Address: 1681 Dei L'Industrie

Beloeil QC

Phone: 450-464-7427 Email: justinl@innotag.com

Fax: 450-464-0874 Website:

iii. Technology Description:

Technology to measure and control the rate of spreading to fields. Can be combined with GPS to apply at variable rates.

iv. Product Performance or Benefits:

Precise control of application volume and spreading rates.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): none

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

Cost Description: Total cost of the controller +/- $10,000

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)**

Details: 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

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

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:

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

i. Technology/Product Name: COMPOSTAIR Tech ID: EA-07

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

Company: Biomax Inc

Contact Name: Carl Genois

Address: 764 St-Joseph Est
Bur 124
QC

Phone: 418-529-2585 Email: general@biomax.qc.ca
Fax: 418-525-5413 Website:

iii. Technology Description:

Composting using forced air. Composts in 6-8 weeks with minimal emissions to the air. Liquids are recycled for flush water.

iv. Product Performance or Benefits:

Demonstration starting March 1999

Additional information provided Claims Substantiated Signed Property Agreement

v. 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 electricity

(d) Staff/training: farm workers

(e) Other (please specify):

vi. Capital and operating costs:

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

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?

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

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

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:

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: Tech ID: EA-08

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

Company: WIC (1993) Inc.

Contact Name: Martial Gagne

Address: 784 Principale

Wickham QC J0C 1S0

Phone: 819-398-6822 Email: info@wiciceal.com

Fax: 819-398-5227 Website:

iii. Technology Description:

- Fertilizer value
- Economical
- Reduction in odours
- Reduction in pollution

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.): n/a

(b) Space of farm:

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

(d) Staff/training: one operator

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	rampe = $10,000	
300 Sow	rampe = $10,000	
600 Sow	rampe = $10,000	
1200 Sow	rampe = $10,000	

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)**

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:

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: ENVIRODOM Tech ID: EA-09

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

Company: E.P.A. Canada Ltee

Contact Name: Vincent Boulet

Address: 4 Tache Est - 105

Montmagmy 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 Signed 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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.

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?

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

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:

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

i. Technology/Product Name: PhytoBact Tech ID: EA-10

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

Company: J & Y M. Ltee

Contact Name:

Address: 30 rue Meunesin #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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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.

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?

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

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:

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.

i. Technology/Product Name: PROGEST Tech ID: EA-11

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

Company: Centre des technologies du gaz naturel (CTGN)

Contact Name: Pierre Camirand

Address: 1350 rue Nobel

Boucherville QC J4B 5H3

Phone: 450-449-4774 Email: ctgn@cedep.com

Fax: 150-449-4994 Website:

iii. Technology Description:

Thermal treatment of manure. The integrated unit involves a drier and an incinerator for vapours. Dry solids are collected and can be reused for fertilizer or re-feeding. A zero discharge technology. Solids are compacted in powder form.

iv. Product Performance or Benefits:

Dehydration, pasteurization and odour elimination is achieved.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): very large or on a factory basis

(b) Space of farm:

(c) Utilities (energy input, materials, etc.): gas, electricity, and manure

(d) Staff/training:

(e) Other (please specify):

vi. Capital and operating costs:

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

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 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.

i. Technology/Product Name: Pricede SANI-PORC Inc. - Manure Treatment Tech ID: EA-12

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

Company: Energie-Bio G.V. Inc

Contact 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 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 Signed Property Agreement

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.): low cost. 1 only

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

(e) Other (please specify):

vi. Capital and operating costs:

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

Staff **Marketing** **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?

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/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 Tech ID: EA-13

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

Company: Julien, Lempicki et associes

Contact Name: Marcel Julien

Address: 8947 rue Maritain

St. Leonard 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:

see attached.

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

Cost Description: To be determined in a research project. 8000 sows: $80 - $114 capital set up and $2.50/yr operating costs (per sow equiv.)

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

Stabilized manure. Complete digesting; can handle 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?

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:
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

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:

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.

i. Technology/Product Name: Manure Management Tech ID: EA-14

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

Company: PSVC Inc

Contact Name: Dr. Ted VanLuven

Address: 550 University Ave

Charlottetown PE C1A 4P3

Phone: 902-628-4356 Email: tvanlunen@vpei.ca

Fax: 902-566-0823 Website:

iii. Technology Description:

Manure management techniques in liquid and solid composting systems.

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.): none

(b) Space of farm: 5000 sq. ft. of land area

(c) Utilities (energy input, materials, etc.): straw/sawdust

(d) Staff/training: minimal

(e) Other (please specify):

vi. Capital and operating costs:

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

Cost Description: 150 sows: $3300/sow equiv. (capital costs); $3000/sow equiv. (annual operating costs)

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

Building design alterations would be required for the deep bedded composting system. The compost is easily marketed.

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:

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

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:

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

i. Technology/Product Name: Bactericide Agent Production Tech ID: EA-18

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

Company:

Contact Name: Richard Massicotte

Address: 407 Beaudoin

Joliette QC J6E 6C7

Phone: 450-756-8415 Email: enviro@megacom.net

Fax: 450-756-8415 Website:

iii. Technology Description:

This process aims at reducing volume of manure while obtaining a bactericide agent. Anaerobic process. The agent obtained has potential in agriculture poultry and used in large quantities. Also potential in pharmaceutical industry.

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

Because bactericide agent is a by-product of process, adds value to anaerobic process.

viii. Stage of development: Concept (basic research still necessary)

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:

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

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:

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

i. Technology/Product Name: PURINTECH Tech ID: EA-19

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

Company: Stratech

Contact Name: Steven Blaney

Address: 144 Du Boiset

Saint-Etienne-de-LaQC

Phone: 418-831-6300 Email: stratech@medom.qc.ca

Fax: 418-831-2636 Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: EA-20

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

Company: Consumat Inc., Experts Conseils

Contact Name: Jean-Denis Major

Address: 4865, blvd Laurier (Rte 116)

St. Hyacinthe QC J2S 3V4

Phone: 450-773-6155 Email:

Fax: 450-773-3373 Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Solid-Liquid Separator Tech ID: EA-21

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

Company: R.Viens Inc.

Contact Name: Philippe Bedard

Address:

QC

Phone: 450-378-9891 Email:

Fax: Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: EA-22

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

Company: Le Club Agroenvironmental Argenfeuil

Contact Name: Phil Lavoie

Address: 505 rue Bethany, bureau 400

Lachutes QC J8H 4A6

Phone: Email:

Fax: Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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 Tech ID: EA-23

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

Company: GML Consultants

Contact Name: Guy-Michel Lanthier

Address: 6987-A de Bordeaux

Montreal QC H2E 2M2

Phone: 514-728-7263 Email: gmlanthi@francomedia.qc.ca

Fax: 514-728-8691 Website:

iii. Technology Description:

Natural Anaerobic Digestion. End product has no odour and can be sold as an amendment.

iv. Product Performance or Benefits:

R & D in process; 100% odour reduction

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms 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.): none

(d) Staff/training: none specific

(e) Other (please specify): simple technology

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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:

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:

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)

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:

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

i. Technology/Product Name: Anaerobic-Aerobic Biodegradation Tech ID: EA-24

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

Company: Benoit et Associes

Contact Name: Fernand W. Benoit

Address: 270 St-Georges

La Prairie QC J5R 2M5

Phone: 450-659-5271 Email: richreid@total.net

Fax: 450-659-5271 Website:

iii. Technology Description:

(information provided in French)

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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 Tech ID: EA-25

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

Company: Bioterre Systems Inc.

Contact Name: Gerard Laganiere

Address: 370, boul, Industriel

Sherbrooke QC J1L 1X8

Phone: 819-566-8855 Email: glaganiere@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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?

Research **Engineering** **Testing** **Demonstration**
Staff **Marketing** **Financial (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

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 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 Tech ID: O-01

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

Company: Agribrands Purina Canada

Contact Name: Greg Simpson

Address: 404 Main Street

Woodstock ON N4S 7X5

Phone: 519-539-8561 Email: greg@agribrands.ca

Fax: 519-537-7883 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 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.): n/a

(d) Staff/training: 10 minutes training session /demonstration

(e) Other (please specify): n/a

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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.

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: Business (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

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:

NMP's must have greater importance in minds of producers

i. Technology/Product Name: Environap Tech ID: O-02

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

Company: Soprema Inc.

Contact Name: Michael Hensen

Address: 151 York Street. #12

London ON N6A 1A8

Phone: 519-672-5561 Email: mhensen@sopremacanada.com

Fax: 519-672-1578 Website:

iii. Technology Description:

Waterproofing membranes for manure containment

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.): none

(b) Space of farm: none

(c) Utilities (energy input, materials, etc.): none

(d) Staff/training: none

(e) Other (please specify): none

vi. Capital and operating costs:

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

Cost Description: Does not apply

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

Details: Although at commercial stage, have recently installed demonstration manure pits.

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:

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

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:

Product awareness

i. Technology/Product Name: BILOGIC SR2 Tech ID: O-03

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

Company: SciCorp Systems Inc.

Contact Name: 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.scicorpbiologic.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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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

Staff **Marketing** **Financial (e.g. need for capital)**

Details: Distribution Network

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:
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:

i. Technology/Product Name: Geo Air-Dome Tech ID: O-04

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

Company: Summergreen Systems Ltd.

Contact Name: Dan Lambert

Address: P.O. Box

Seaforth ON N0K 1W0

Phone: 519-527-2470 Email: summerg@sunnorth.com

Fax: 519-527-2560 Website:

iii. Technology Description:

Air supported tank cover. Reduces odor and stops precipitation from entering manure tanks. Can be installed over an existing tank (full or empty). Not affected by high winds.

iv. Product Performance or Benefits:

Not available at this time

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: covers existing or new tanks

(c) Utilities (energy input, materials, etc.): $90.00 /annum approx.

(d) Staff/training: none required

(e) Other (please specify): some snow removal required

vi. Capital and operating costs:

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

Cost Description: individual calculations necessary depending on tank dimensions

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

climate condition (snow load)

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 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:

n/a

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

third party verification

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:

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

i. Technology/Product Name: Nature Works Onsite Management Treatment Tech ID: O-05

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

Company: SEPTECH

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 for20+ years

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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

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

i. Technology/Product Name: Treatment of Nitrate Contaminated Agriculture Run-Off Tech ID: O-06

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

Company: University of Waterloo

Contact Name: Scott Inwood

Address: University Avenue

Waterloo ON N2L 3G1

Phone: 519-888-4567 Email: sinwood@mc1adm.uwaterloo.ca

Fax: 519-746-3575 Website:

iii. Technology Description:

Nitrate contaminated run-off is gravity fed through a passive reactor system that uses a reactive porous carbonaceous media to convert nitrates to a less harmful form of nitrogen.

iv. Product Performance or Benefits:

~100% nitrate removal based on proper design and installation

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: installation involves excavation

(c) Utilities (energy input, materials, etc.): non

(d) Staff/training: none

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	Not Available	None
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)

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: 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 Tech ID: O-07

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

Company: Biorem Technologies

Contact Name: Richard Puntis

Address: 7496 Wellington Rd 34, RR #3

Guelph ON

Phone: 519-767-9100 Email: rpuntis@bioremtechnologies.com

Fax: 519-767-1824 Website:

iii. Technology Description:

The biofiltair system reliability and effectively destroys odors at farms by degrading them biologically and converting odors to carbon dioxide and water. It is probably the lowest cost and most reliable technology for odor control

iv. Product Performance or Benefits:

Reduces odors by > 90%

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

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

(b) Space of farm: needs space

(c) Utilities (energy input, materials, etc.): Basic electrical and water hook-up

(d) Staff/training: minimal is provided

(e) Other (please specify):

vi. Capital and operating costs:

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

Cost Description: To be determined

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

No weather or climate restrictions. All wastes are non hazardous and can be disposed of or sold to nurseries/landscapers

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

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

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:

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

i. Technology/Product Name: Micro-Aid Feed Coracle Concentrate Feed Additive Tech ID: O-08

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

Company: Papillon Agriculture Products Ltd.

Contact Name: Jeffery Currah

Address: P.O. Box 203

Innerkip ON N0V 1M0

Phone: 519-469-3022 Email: currach@execulink.com

Fax: 519-469-3301 Website:

iii. Technology Description:

Agriculture Canada Registration # 980510
Registered Claim - To aid in the control of odors through decreased ammonia release from the manure. Mode of Action - Inhibition of the urease enzyme

iv. Product Performance or Benefits:

40% reduction in ammonia

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): none

(b) Space of farm:

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

(d) Staff/training:

(e) Other (please specify): It is feed additive

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	cost/sow/year $2.00	= $200.00
300 Sow		$600.00
600 Sow		$1200.00
1200 Sow		$2400.00

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

Details: None

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
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:

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:

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 Tech ID: O-09

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

Company: Air Liquide Canada Inc.

Contact Name: Sylvain Raymond

Address: 1700 Steeles Ave. East

Bramalea ON

Phone: 905-793-2000 Email: sylvain.raymond@airliquide.com

Fax: 905-793-9257 Website:

iii. Technology Description:

Oxygen injection in manure holding tanks can shift chemical reaction from anaerobic to aerobic and stops production of H20 and CH4 which are responsible for odor problems.

iv. Product Performance or Benefits:

n/a

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: needs holding tank

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

(d) Staff/training:

(e) Other (please specify):

vi. Capital and operating costs:

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

Cost Description: N/A

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

No restrictions

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:

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

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:

Proof of feasibility, financial viability

i. Technology/Product Name: Global Earth Products "Marvel" automated composting Tech ID: O-10

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

Company: Global Earth Products

Contact Name: Tom Smith

Address: RR 2

Utopia ON L0M 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

Additional information provided Claims Substantiated 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

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:

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

i. Technology/Product Name: Envirocrete Concrete Treatment Tech ID: O-11

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

Company: Envirocrete Ltd.

Contact Name: Alex Skorik

Address: 385 Fairway Road South Unit 4A-218

Kitchener ON

Phone: 519-745-6408 Email:

Fax: Website:

iii. Technology Description:

Envirocrete Concrete Treatment is an environmentally friendly concrete treatment that can densify existing concrete. The result is the decontamination and waterproofing of the concrete.

iv. Product Performance or Benefits:

N/A

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): Any size 4000-8000 sq. ft./day

(b) Space of farm: n/a

(c) Utilities (energy input, materials, etc.): water

(d) Staff/training: n/a

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

A certified contractor may apply products topically. Animals may be returned same day process is complete. Repairs to damaged concrete may need to be done first.

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: 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:

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:

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 Tech ID: O-12

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

Company: LH Division of Full Circle Organics

Contact Name: Chriss Lee

Address: RR #1

Walton ON N0K 1Z0

Phone: 519-887-9378 Email: clee@scsinternet.com

Fax: 519-887-9011 Website:

Website: http://village.walton.on.ca/lh

iii. Technology Description:

See Outline

iv. Product Performance or Benefits:

See outline

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:
not available

xvi. Describe how you currently/plan to evaluate the effectiveness of the technology/product:
not availlable

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: Tech ID: O-13

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

Company: Conor Pacific Environmental Technologies

Contact Name: Dr. Mel Webber

Address: 867 Lakeshore Road, PO Box 5068

Burlington ON L7R 4R7

Phone: 905-336-4519 Email: mel.webber@conorpac.com

Fax: 905-336-4765 Website:

iii. Technology Description:

Volatile fatty acid generation and recovery from hog manure slurry

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

viii. Stage of development: Concept (basic research still necessary)

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:

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: Liquid Composter Tech ID: O-15

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

Company: KEMOMATIC

Contact Name: John Brown

Address: 2389 Rt. 202

Dunham QC J0E 1M0

Phone: 514-266-5323 Email:

Fax: 514-266-5708 Website:

iii. Technology Description:

Changes the anaerobic fermentation of the slurry into an aerobic fermentation,

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.): n/a

(b) Space of farm: cement-steel holding tanks or lagoons

(c) Utilities (energy input, materials, etc.): 230 1PH or 550 3PH

(d) Staff/training: n/a

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

Turn Hog manure into non-smelling, no solids, liquid compost with little danger to water table contamination.

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

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

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:

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:

Company: Soil Enrichment Systems Inc.

Contact Name: James Higgins

Address: 10800 Weston Rd

Vaughan ON L4L 1A6

Phone: 905-832-2166 Email: sessoil@aol.com

Fax: 905-832-0751 Website:

iii. Technology Description:

Advancement on ordinary constructed wetland technology. BREW is a sub-surface flow (SSF) engineered wetland designed to give enhanced secondary treatment year round.

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

BREW would be used in conjunction with other natural WW treatment technologies

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?

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:

ETV

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:

Pilot/Demo

i. Technology/Product Name: Liquid Manure application systems for spreaders Tech ID: O-17

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

Company: Nuhn Industries Ltd.

Contact Name: Dennis Nuhn

Address: Box 160

Sebringville ON

Phone: 519-393-6284 Email: dnuhn@quadro.net

Fax: 519-393-5104 Website:

iii. Technology Description:

Injectors and low to ground manure application reduces odor and nitrogen loss; controlled application rates reduces run-off

iv. Product Performance or Benefits:

ongoing studies with Agriculture Canada

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

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

(b) Space of farm:

(c) Utilities (energy input, materials, etc.): tractor, animal manure

(d) Staff/training: basic training on machine operation

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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** **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:

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:

n/a

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

field tests
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:

education ,economic conditions in farm industry

i. Technology/Product Name: SuperF Inc. Tech ID: O-18

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

Company: Carson's Farm Supply & Tack Shop

Contact Name: Al Lowry

Address: RR #3

Listowel ON N4W 3JG

Phone: 519-291-1094 Email:

Fax: 519-291-5065 Website:

iii. Technology Description:

Products neutralize odors and gas produced by manure.

iv. Product Performance or Benefits:

See information

Additional information provided Claims Substantiated Signed 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.): Mix with water

(d) Staff/training: very minimal

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

Manure can still be used as fertilizer without the odor

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:

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

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

i. Technology/Product Name: Phylmar Manure Treatment System Tech ID: O-19

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

Company: Hal-Mar International Inc.

Contact Name: Errol Butler

Address: 650 Scott Road, P.O. Box 20039

Sarnia ON N7S 6J3

Phone: 519-337-7677 Email:

Fax: 519-337-7599 Website:

iii. Technology Description:

A biological treatment system that enhances the natural breakdown of manure.

iv. Product Performance or Benefits:

Reduces solids and harmful bacteria

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 500 Sows minimum

(b) Space of farm: depends upon size farm

(c) Utilities (energy input, materials, etc.): motors

(d) Staff/training: 2 days training, 1 hour/day to operate

(e) Other (please specify):

vi. Capital and operating costs:

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

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?

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

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:

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

i. Technology/Product Name: Dr. Nigel Bunce Tech ID: O-20

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

Company: University of Guelph

Contact Name: Dr. Nigel Bunce

Address: Department of Chemistry and Biochemistry

Guelph ON N1G 2W1

Phone: 519-824-4120 Email:

Fax: 519-766-1499 Website:

iii. Technology Description:

This technology is presently at the research stage.

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

viii. Stage of development: Concept (basic research still necessary)

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:

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 Tech ID: O-21

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

Company: MTS Environmental Products -SHAC

Contact Name: Paul Revington

Address: 215 Pickard Road

Exeter ON N0M 1S3

Phone: 519-236-1074 Email:

Fax: 519-430-9673 Website:

Website: www.shacenviro.com

iii. Technology Description:

SHAC Reduces odours and bases.

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.): n/a

(b) Space of farm: n/a

(c) Utilities (energy input, materials, etc.): n/a

(d) Staff/training: n/a

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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

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

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:

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 Tech ID: C-14

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

Company: BIOSCAN A/S

Contact Name: Klaus Kristensen

Address: Tagtaekkervej 5

DK-5230 Odense S

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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** **Demonstration**
Staff **Marketing** **Financial (e.g. need for capital)**

Details: 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: Tech ID: C-73

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

Company: Hibotec Ltd.

Contact Name: Edwyn Stobart

Address: Elmsfield, Worcester Rd

Chipping Norton Oxford 0X7 5XS

Phone: 0160 864 1389 Email:

Fax: 0160 864 1643 Website:

iii. Technology Description:

slurry separation and aeration systems; preparation for land application

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Technolyse Sa

Contact Name: Mcheust

Address: Le Menehy

Plenee-Jugon 22640

Phone: 02-96-51-70-10 Email:

Fax: 02-96-51-70-11 Website:

iii. Technology Description:

Biological manure treatment.

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.): 100

(b) Space of farm: depends on volume of 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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)**

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

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:

Demonstrate feasibility and ease of operation.

i. Technology/Product Name: Bio Armor Tech ID: EA-16

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

Company: Bio Armor Environment

Contact Name: Louis Guillemot

Address: 21 de la Gare

Phone: 33-2-96-32-0478 Email:
Fax: 33-2-96-32-0628 Website:

iii. Technology Description:

Biological treatment (digestion), physio-chemical treatment.

iv. Product Performance or Benefits:

Odour reduction 100%; nitrates 75-98%; volume reduction 20-90%

Additional information 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 input, materials, etc.): electricity

(d) Staff/training: provided by Bio Armor

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
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?

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

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:

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

i. Technology/Product Name: ECOLIZ Tech ID: EA-17

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

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-atochem.fr
Fax: 33-1-49-00-72-53 Website:

iii. 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. 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.

Additional information provided Claims Substantiated Signed Property Agreement

v. 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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

Phone: 31-497-513281 Email:
Fax: 31-497-513281 Website:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-46

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

Company: World Water Engineering BV

Contact Name: P. Walthie

Address: Meidoom 14
6226 WB Maastricht

Phone: Email:
Fax: Website:

iii. Technology Description:
Wildwater Manure-Manager; concentration of liquid manure to 20% dry matter

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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 Enterprises, Inc

Contact Name: Marlin Fischer

Address: 2415 Utah Ave.

Thor IA 50591

Phone: 515-378-3365 Email: webmaster@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

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

i. Technology/Product Name: Manure Handling Equipment (including GPS) Tech ID: C-02

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: 319-277-2443 Email: curtaalserks@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
300 Sow		
600 Sow		
1200 Sow		

Cost Description: determined by size of trailed 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

Staff **Marketing** **Financial (e.g. need for capital)**

Details: 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:

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.

i. Technology/Product Name: In Gest O BAC Tech ID: C-05

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

Company: TOMCO

Contact Name: Tom Eden

Address: PO Box 78

Wantagh NY 11793

Phone: 516-781-4972 Email: tomcochemical.com

Fax: Website:

iii. Technology Description:

This is a live culture. It reduces sludge and odors. We grow the material.

iv. Product Performance or Benefits:

This bacteria reduces odour 70-80%.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

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

(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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	.30 - .35 cents/ animal	
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

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

The only element we ask for is liquid.

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?

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

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:

This will work anywhere there is dead organic matter. Hogs, poultry, beef, etc.

i. Technology/Product Name: Earth Balance X12 Technology Tech ID: C-07

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

Company: Earth Balance Technologies, LTD

Contact Name: Mike Mickley

Address: 752 Gapter Rd

Boulder CO 80303

Phone: 303-499-3133 Email: mmickle9@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 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.): aeration

(d) Staff/training: minimal

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
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:

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)**

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:

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:

product development; demonstration tests

i. Technology/Product Name: Lagoon Aid Tech ID: C-08

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

Company: SLR Distributing

Contact Name: Roger Shoemaker

Address: 2928 Wendover

Lincoln NE 68502

Phone: 402-475-4403 Email: rlsmaker@aol.com

Fax: 402-475-4403 Website:

iii. Technology Description:

Biological and natural elements digest waste and capture escaping gases (N).

iv. Product Performance or Benefits:

National Pork Producers "Odor Solutions Initiative" in process.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

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

(b) Space of farm: product storage

(c) Utilities (energy input, materials, etc.): none

(d) Staff/training:

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	none	
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: 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

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

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:

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 Tech ID: C-09

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

Bloomingdale IL 60108

Phone: 630-924-6870 Email: ian.a.taylor@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
300 Sow		
600 Sow	~$80,000 US for package	$1.00 per 1000 gal total
1200 Sow		

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)**

Details: 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:

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

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:

Awareness of successful operation elsewhere in world and put one in operation in Canada.

i. Technology/Product Name: GT-2000OC Odor Control & BC-2000V Microbes Tech ID: C-10

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

Company: G.T. Environmental Technology, Inc.

Contact Name: Stuart Bank

Address: 13071 Stone Road, Suite C

Pearland TX 77581

Phone: 281-997-0200 Email: gtenvtec@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

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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?

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

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

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 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 Tech ID: C-15

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

Company: Koch Membrane Systems

Contact Name: Kevin Donahue

Address: 850 Main Street

Wilmington MA 01887

Phone: 978-694-7175 Email: donahuek@kochind.com

Fax: 978-694-7020 Website:

iii. Technology Description:

Membrane filtration for volumetric reduction of manure. Result is concentrated solids and reusable water.

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

Cost Description: Captial: $150,000 for 4000 gallons/day of manure
Operating: $0.01/gallon of manure processed

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

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)**

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:

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) Tech ID: C-20

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

Company: Bion Technologies, Inc

Contact Name: Jeffrey Poulsen

Address: 606 North French Rd. Ste 6

West Amherst NY 14228

Phone: 716-697-3385 Email: jeffrey.poulsen@gte.net

Fax: 716-691-3609 Website:

iii. Technology Description:

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. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): 2000 sow equivalents

(b) Space of farm: 3 to 5 acres

(c) Utilities (energy input, materials, etc.): 10 hp (for aerators and pumps)

(d) Staff/training: minimal upon start-up

(e) Other (please specify):

vi. Capital and operating costs:

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

Cost Description: For a new 2000 sow (farrow to wean) farm (or equivalent) capital costs would be approx. $30-$60 per sow, depending on site layout, system requirements, liners etc. Retrofit of existing lagoon systems typically cost $15-$50 per sow but very site specific. Annual operating costs are limited to electrical for aeration equipment and pumps.

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)**

Details: 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

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 Tech ID: C-23

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

Company: BioSystems Technology Inc.

Contact Name: H.W. Cox

Address: 2903 Commerce St., Suite E

Blackburg VA 24060

Phone: 540-552-2600 Email: biosys@biosys.com

Fax: 540-552-4065 Website:

iii. Technology 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow		
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?

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

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 simply need an opportunity to install a full scale system.

i. Technology/Product Name: Hoffland Process Tech ID: C-24

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

Company: Hoffland Environmental, Inc

Contact Name: Robert O. Hoffland

Address: 10391 Silver Springs Road

Conroe TX 77303

Phone: 409-856-4515 Email: hoffland@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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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

Staff **Marketing** **Financial (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 Tech ID: C-27

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

Company: Cannon River Corp.

Contact Name: Bill McIntosh

Address: 912 Greenvale Ave.

Northfield MN 55057

Phone: 507-645-6213 Email: bmcintosh@microassist.com

Fax: Website:

iii. Technology Description:

Remove water from lagoon refuse, filter, return water to continually dilute waste, make dry fertilizer.

iv. Product Performance or Benefits:

no data yet.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

(a) Minimum farm size (in sow equiv.): don't know yet

(b) Space of farm:

(c) Utilities (energy input, materials, etc.): electricity

(d) Staff/training:

(e) Other (please specify):

vi. Capital and operating costs:

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

Cost Description:

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

Spread dry fertilizer, plus store, etc.

viii. Stage of development: Concept (basic research still necessary)

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

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

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:

Proved effective and cost effective.

i. Technology/Product Name: Bio-Digestor Tech ID: C-29

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

Company: EnviroGro Solutions, Inc

Contact Name: Jay Horvath

Address: 123 Main St.

Dublin PA 18917

Phone: 877-249-4922 Email: envirogro@enter.net

Fax: 215-249-4922 Website:

iii. Technology Description:

In-vessel composter - creates compost from hog manure in 3-5 days.

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.): ~ 1400

(b) Space of farm: < 1/8 acre

(c) Utilities (energy input, materials, etc.): 220 single phase (~$100,000 USD / month)

(d) Staff/training: 1 load unload, 1-2 times per week, minimum training

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

May need to enclose in an inexpensive structure. Easily adapts to any farm. Needs to include liquid/solid separation in flush op.

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?

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

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:

Demonstrations! With some government assistance!

i. Technology/Product Name: Manure Drying and Treatment Tech ID: C-31

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:

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

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Extreme Air & Lagoon Clean Machine Tech ID: C-33

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

Company: Oxyzone Systems, Inc.

Contact Name: Dr. Paul Ling Tai

Address: 30057 Orchard Lake Rd., Suite 250

Farmington Hills MI 48334

Phone: 248-855-9800 Email:

Fax: 248-855-8125 Website:

iii. Technology Description:

Patent process of super oxydation removing odor, dust, chemicals, permanently from air & water.

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.): none

(b) Space of farm: none

(c) Utilities (energy input, materials, etc.): electricity 110 - 220 v

(d) Staff/training: minor

(e) Other (please specify):

vi. Capital and operating costs:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	$40 / sow	$ 6 / year
300 Sow		
600 Sow		
1200 Sow		

Cost Description:

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

No by-product except O2 and CO2, no climate conditions - stable at all temperatures. Retrofit and new installation no problem.

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:

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

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: Lift HOG, Microbe Lift Super ENZ Tech ID: C-34

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

Company: Ecological Laboratories, Inc. - Technical Center

Contact Name: Mark J. Krupka

Address: 256 Oakshade Rd.

Tabernacle NJ 08088

Phone: 609-268-1633 Email: mjkrupka@aol.com

Fax: 609-268-1647 Website:

Website: http://www.tncaustria.com/microbe-lift/default

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:

Size of Operation (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
100 Sow	$0 **	$300
300 Sow	$0 **	$750
600 Sow	$0 **	$1500
1200 Sow	$0 **	$3000

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.

i. Technology/Product Name: Concentrated Wastewater Treatment - Toast Tech ID: C-35

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

Company: Engineering Concepts

Contact Name: John Petering

Address: 804 South Broad St.

Mankato MN 56001-3822

Phone: 507-625-8830 Email: toast@mctcnet.com

Fax: 507-387-7415 Website:

Website: http://www.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 provided Claims Substantiated Signed 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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (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: 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

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:

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 Tech ID: C-37

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

Company: Agro Industrias El Alamo

Contact Name:

Address: PO Box 530324

San Diego CA 92153-0324

Phone: 619-428-5638 Email: mktg@yucca.com.mx

Fax: 619-428-6028 Website:

Website: http://www.yucca.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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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 Tech ID: C-43

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

Company: Natural Aeration Inc.

Contact Name: Gary Wegner

Address: 28598 N. Riffe Road

Reardan WA 99029

Phone: 509-796-4825 Email: naturalaeration@circul8.com

Fax: 509-796-4826 Website:

Website: http://www.circul8.com

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Modular Reclamation and Reuse System (MRRS) Tech ID: C-44

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

Company: Sheaffer International, Ltd.

Contact Name: John A. Johnson

Address: 10355 Harvest Lane

Broadway VA 22815

Phone: 540-896-6173 Email: johnsonfour@rica.net

Fax: 540-896-4361 Website:

iii. Technology Description:

anaerobic/aerobic sequential treatment; intense aeration; oxidation.

iv. Product Performance or Benefits:

Eliminates odour at lagoon and in reclaimed water reduces nutrient content by 75%.

Additional information provided Claims Substantiated Signed Property Agreement

v. Technology/product requirements in terms of:

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

(b) Space of farm: varies, 4-20 acres

(c) Utilities (energy input, materials, etc.): varies with farm; 500,000 - 1,000,000 kWh annually off peak

(d) Staff/training: minimal

(e) Other (please specify):

vi. Capital and operating costs:

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

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

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:

Recognition that manure management requires upfront investment that pays dividends down the road.

i. Technology/Product Name: Tech ID: C-55

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

Company: EM Technologies, Inc.

Contact Name: John M. Phillips

Address: Suite 122, 1802 W. Grant Road

Tucson AZ 85745

Phone: 520-659-9301 Email:

Fax: Website:

iii. Technology Description:

Effective Microorganisms (EM); EM Probiotic & EM Waste Treatment

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-59

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

Company: Dry Vac Environmental

Contact Name: Mark Chaddick

Address: 101 North Front Street

Rio Vista CA 94571

Phone: 707-374-7500 Email:

Fax: 707-374-7505 Website:

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-67

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

Company: BioSUN Systems

Contact Name: Guy Miller

Address: Suite 700, 5775 Wayzata Blvd.

Minneapolis MN 55416

Phone: 612-525-2251 Email:

Fax: 612-417-0729 Website:

iii. Technology Description:

Biological treatment of EMS plus aeration

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-68

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

Company: ADI Systems Inc. / Bio Specific Systems, USA

Contact Name: Joe Kowalski

Address: Suite 300, 1133 Regent St.

Fredricton NB E3B 3Z2

Phone: 506-452-7307 Email:

Fax: 506-452-7388 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

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-69

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

Company: Ekokan LLC

Contact Name: Alexandra Kantardjieff

Address: 103 Arbor Way, Suite 1D

Cary NC 27513

Phone: 919-469-3727 Email:

Fax: 919-467-0294 Website:

iii. Technology Description:

Anaerobic biofilter

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Tech ID: C-78

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

Company: Global Waste Management

Contact Name: Rob Adams

Address: 2430 East Highway 153

Beaver UT 84713-1913

Phone: 435-438-1716 Email:

Fax: Website:

iii. Technology Description:

Chemical and polymer used in solid separation

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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:

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: Biozome Tech ID: C-82

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

Company: Biozome

Contact Name: Guy McGowen

Address: 4606 Copano Court

Austin TX 78749

Phone: 512-282-2087 Email:

Fax: 512-292-6419 Website:

Website: http://www.biozome.com

iii. Technology Description:

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 (sow equiv.)	Capital Costs (per sow equiv.)	Annual Operating Costs (per sow equiv.)
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:

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 Staff **Engineering Marketing** **Testing** **Demonstration** **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:

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: