



Date: September 15, 2016

**COMPANY INFORMATION**

<b>Company Name:</b> Larsen Engineers	
<b>Phone:</b> 585-272-7310	<b>Web Site:</b> www.larsen-engineers.com
<b>Address:</b> 700 West Metro park	<b>City:</b> Rocheste
<b>State:</b> NY	<b>Zip Code:</b> 14623

**BUSINESS CONTACT**

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<b>Address:</b> 700 West Metro park
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**TECHNICAL CONTACT**

<b>Name:</b> Ram Shrivastava
<b>Phone:</b> 585-272-7310 x 640
<b>Email:</b> ram@larsen-engineers.com
<b>Address:</b> 700 West Metro park
<b>City:</b> Rocheste
<b>State:</b> NY
<b>Zip Code:</b> 14623

**BUSINESS HISTORY**

**How long have you been in business?** 60 years

**Are you part of a larger company?**  Yes  No

**Did you exist as another company before this company was formed?**  Yes  No

*If so, what was that company's name?*

**Number of employees?** 15

**What is your business structure?** Professional Corporation

**What types of insurance and or surety do you provide?**

General insurance and professional Liability coverage

**References. Please provide customers or colleagues with whom we can discuss your business and performance.**

*Please include a separate list with company name, location, contact name and contact information.*

Spruce Haven Farm  
Doug Young

**Describe your business service(s).** *For example: consulting, development, engineering, equipment sales, finance, other.*

Professional Engineering services for Environmental needs for Municipalities and Dairy Farms

**Area or region of operation.**

New York state and northeastern USA

**Does your company hold any patents or the rights to any patents?** *Please identify.*

No

**Do you manufacture equipment?**  Yes  No *Please describe.*

**Do you integrate equipment manufactured by others?**  Yes  No

*If you integrate, please list the names of the companies you represent.*

Integrate equipment supplied by other companies  
Open source procurement

**How do you answer potential customer's question about financial strength of your company?**

Past performance

**Do you offer technical/service support?**  **Yes**  **No** *If so, what methods?*

Contract for services with defined scope and costs

**Do you offer design services?**  **Yes**  **No** *Please describe.*

**Do you offer financing?**  **Yes**  **No** *If so, what terms?*

**Are you a full stop shop?** *Design to construction to operate?*  **Yes**  **No** *Please describe.*

We can do design build for funded projects

**Do you have preferred partners?**  **Yes**  **No**

*If so, please list and provide contact information/identify partners by name.*

No.. each project needs determines what supplier meets it

**Do you have any third-party verification/research that has been done on this technology?**  Yes  No

*If so, please describe.*

No response given

**Do you provide a performance guarantee?**  Yes  No

*If so, what are you guaranteeing? For example: up time, methane production, biogas production, parasitic load, throughput, O&M cost, percent recovery, other.*

Biogas production based on feed source and organic load

**Are there any other aspects of your business that you feel should be included in this document?**

Our designs are based on 30 years of digester experience on variety of feedstocks

**INITIAL TECHNOLOGY OVERVIEW**

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**This information is to guide in the development of a more specific and detailed Technology Information Request. Please answer the following questions for each Technology or Service Provided.**

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**What is the name of the technology or service?**

For Dairy waste – RAD2 ( Recirculated Anaerobic Ditch Digester)

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**What unit process is the technology used in?**

*For example: initial collection/transfer manure storage, energy recovery, primary/coarse solids recovery, advanced suspended/fine solids recovery, drying, struvite production, nitrification denitrification, ammonia stripping, algae, vermi composting, membrane filtration, evaporation, other.*

Anaerobic digestion and biogas production at dairy farms for energy production

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**How many systems have you installed on dairy farms or other livestock operations?**

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**Size of farm(s)?**

2000 cows

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**Location of farm(s)?**

Cayuga County

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**What's the smallest/largest farm for your system?**

500 cows

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**Input material description/characteristics:**

*For example: raw manure, digestate, screened digestate, suitable non-farm feedstocks, other.*

Manure with no sand or inorganic material

**Does the technology treat the full manure stream for a farm or a fraction of the stream?**

Full manure stream with some pretreatment as required

**Do you consider this a mature system or ongoing farm development?**

YES the system is proven technology

**Any weather constraints?**  Yes  No *Please describe.*

**Any bedding constraints?**  Yes  No *Please describe.*

Sand bedding will require special sand removal system

**Is this process scalable and to what extent (top and bottom limits)?**  Yes  No *Please describe.*

Yes. Suitable for 500 to 2000 cows where lower cost and lagoon treatment is preferred

**Do you have a known scaling factor?**  Yes  No *Please describe.*

No. it is Project specific

Input and output of your unit/system – do you have a mass balance analysis?  Yes  No *Please describe.*

Yes

Do you consider this technology part of a larger system that you provide?  Yes  No *Please describe.*

Has your technology been accepted by the NRCS?  Yes  No *Please describe.*

Basic process design follows old digester design with enhancements to increase process performance

Would you be willing to provide information for a technical review?  Yes  No

Would you be willing to respond to a Request for Quotation (RFQ) on a generic project for comparison of your technology against other technologies in the same unit process?  Yes  No

Are there any other facts about this technology that you feel should be included in this document?

The technology performance matches other system with 40% higher costs and uses proven modular components as part of the system