# "See What We Do"

STONEBRIDGE SUSTAINABILITY SOLUTIONS, INC. (SSSI)
GOLD SEAL INDUSTRIES, LLC (GSI)





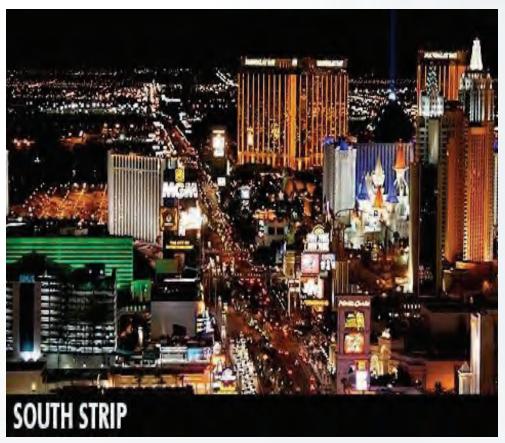
"Advanced Waste Conversion Technology, which through Collaboration, provides Alternative Solutions to Environmental Protection, Restoration, and Resiliency Goals"





### Target Customers

- Military Base
- Municipalities (Cities, Counties, etc.)
- Southern Nevada Water Authority
- Landfills/Waste Disposal
- Waste Water Treatment Facilities
- Agriculture Manure
- Tires
- Forestry Biomass
- Recycling Facilities
- Major Hotels/Casinos
- Indian Reservations
- Manufacturing
- Universities
- Hospitals
- Coal Mines







### Feedstock Diversity

### Works best when the input waste is carbon-rich:

- Municipality Solid Waste (MSW) / Refuse
  - Cooking Oils & Grease
- Medical Waste, Bio-hazardous and Pharmaceuticals
  - Paper / Cardboard
  - Coal, Petroleum Sludge, Oils, Oil Sands
    - Wood, Yard Waste, Biomass,
- Construction & Demolition Materials, Mattresses & Furniture
  - Tires / Rubber / Plastics / Textiles
  - Automobile Shredder Residue (ASR) or Auto fluff
    - Sewage & Sludge Treatment
    - Agricultural Wastes, Plant Stock, Manure
  - Commercial & Industrial Waste, Chemical Waste
  - Environmental Remediation, Soil, Surface & Groundwater
    - Brownfield Sites & Redevelopments



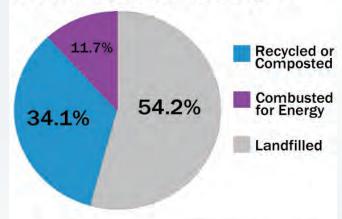








# What Happens to Stuff We Throw Away\*?





"No trash is sent to Landfills and/or Incinerators"

\*Based on the 2010 Municipal Solid Waste Characterization Report

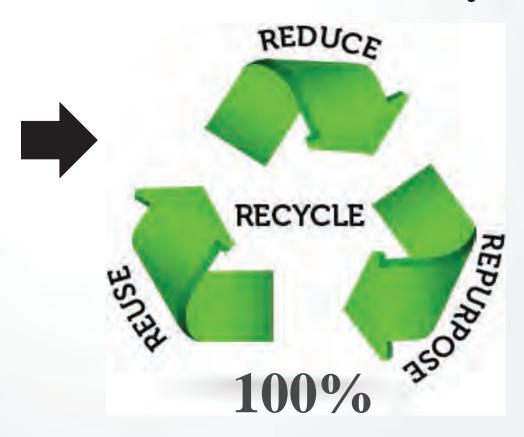




### Zero Landfills

### Gold Seal Industries System









### **Distilled Water System**

### **Gold Seal Industries**

"Highest Purity - Distilled Water"

#### MODULAR EVAPORATOR

1 Million Gallons Per Day

Water recovered can be used for clean-in-place procedures







# Recovery System





#### CONTINENTAL BIOMASS INDUSTRIES, INC.

World's Best Portable and Stationary Waste Recovery Systems





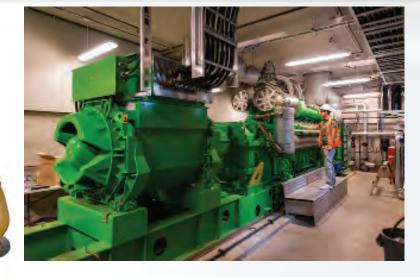




# Combined Heat and Power (CHP)

GE Jenbacher and/or Caterpillar CHP

These units produce Electricity and Hot Water and/or Steam.











### Fuel Cell Technology

Gold Seal Industries is working with Fuel Cell Manufactures to operate units on syngas

#### Solid Oxide Fuel Cell (SOFC)

- system efficiency up to 90%
  - system availability >95%
- durability 10-year cell stack life







### **MSW Environmental**

 Status: Feedstock: 500 tons per day (260 days per year) of MSW, C&D, Yard Waste, Animal Waste and Tires







# C&D Debris

### **Construction and Demolition**











### Medical & Pharmacy Waste

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# Medical Waste



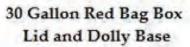




















### Biomedical Waste Management



Dispose of your sharps and red bag waste
Save Money - monthly fees - cost-effective
Make Facility Safer
Make Your Waste Disposal Simpler
Secure Your Confidence in a Proven Technology
Liability associated with waste - even years after
the fact







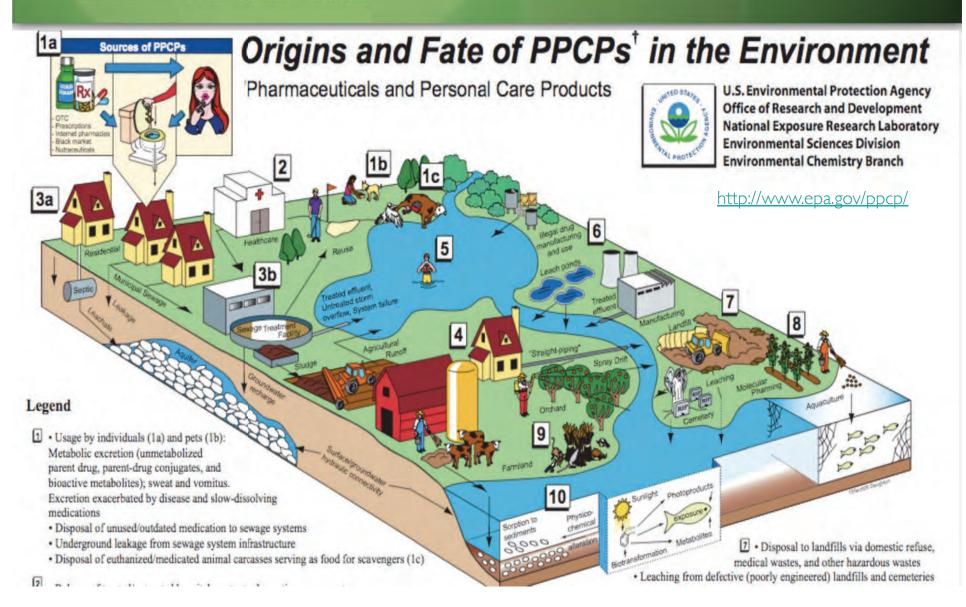






### Pharmaceuticals In Water

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NOTICE



### MSW Leachate

### 60% of Weight is Contaminated Water Transportation Cost

•Tipping Fees (\$250.00 Per Truck Load)









Converted to Clean Safe Drinkable Water

# Paper Industry

#### The pulp and paper industry



1995 1996 1997 1996 1999 2000 2001 2007 2003 2004 2005 2006 2007 2008



Agent	Content (g/kg dry solid)
Na	19.3
K	3.34
Stot	5.50
Clint	0.41
S <sup>2</sup>	1.93
NaOH	1.1
CO32-	6.2
Na <sub>2</sub> SO <sub>3</sub>	0.1
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	2.13
Na <sub>2</sub> SO <sub>4</sub>	1.23
C	31.9
H	3.33
N	0.08



Fixed Cost 37%

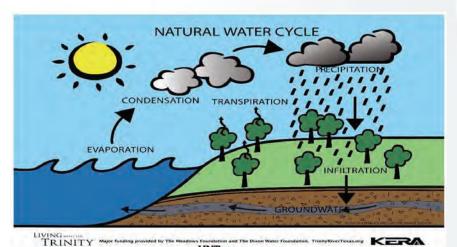


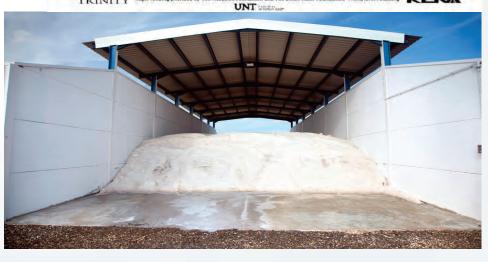
### Desalination

# Consumables 3% Maintenance and Parts 7% Membrane Replacement 5% Labor 4% Electrical Energy 44%



#### **Removal of Salts and Minerals**

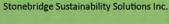








# Sewage & Sludge











### **Environmental Remediation**









(\$250.00 Per Truck Load)











# Military Applications













# Disaster Applications







# Used Oil & Grease

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# Oil & Gas Industry















# Ships and Tanks











# Oil & Gas Wells

















### Oil Sands Bitumen





### **Tailing (TAR) Ponds**

Typical breakdown is:

- Sand 83%
- Bitumen 10-12 %
  - •Water 4%
    - •Clay 3%







### HYDRAULIC FRACTURING

#### Elimination of all type of chemicals and fluids

- Our oilfield service company focused on the safe, efficient, cost effective disposal of hydraulic "fracking slurry or Frac Slurry".
- Waste contains harmful pollutants including salts, organic hydrocarbons (oils, grease and tar composites), inorganic and organic materials.
- NORM the naturally occurring "Radioactive" material can't be eliminated



Increase the evaporation process







### Biomass





#### **Organic Compounds:**

- Vinasse
- Liquid Stillage
- Bagasse
- Leafs, rice hulls
- Other Green Waste
  - Palm Cuttings
  - Plant Stock & Crop Residue



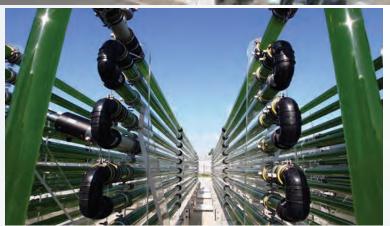


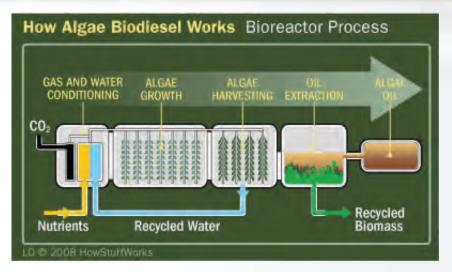




# Algae













# Wood-Biomass

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### Wood-Biomass



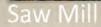


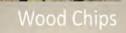




















# Manure Project









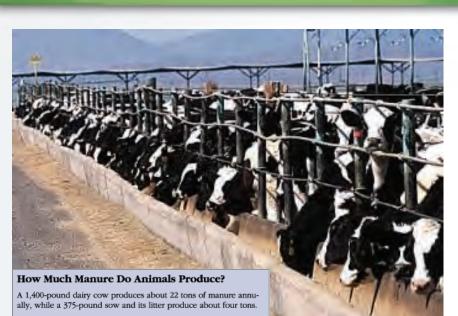








### **Animal Manure**





Approximate Annual Manure Production

Animal Type/Size		Manure Production	
Animal (Type)	Size (lbs.)	Manure (lbs./day)	Manure (tons/year)
Cattle			
Dairy cattle	500	43	7.8
	1,400	120	21.9
Beef cattle	750	45	8.2
	1,250	75	13.7
Swine			
Finishing pig	150	8.8	1.8
	200	13.1	2.4
Sow and litter	375	22.5	4.1
Poultry			
Layers	4	0.21	0.038
Broilers	2	0.14	0.026

Sources: Midwest Plan Service; University of Wisconsin-Extension





# Tire Fires











### Tire Project

#### 400 tons per day of Shredded Tires

12,000,000 tons per year (approximately used automobile and commercial tires)

Produces:

Synthetic Diesel – 12,000,000 gallons per year







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# Ohio Coal Project

# Coal Fines or Tailings

.The unit will operate 7 days per week for a minimum of 350 days per year

#### Annual Input/Output:

Feedstock – 351,000 tons per year Synthetic Diesel Produced – 10,225,352 gallons per year 360,000 tons of carbon dioxide will be captured per year

All coal is processed at the mine and the Biochar can be returned as part of the land reclamation program. Liquid fuels are shipped from the mine by rail on tanker cars or trucks.







# Island Fairies

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# Ocean Plastic







### Third Party Review



Social, Environmental & Economic Solutions (SOENECS) Ltd Technology Report for Albion Energy



**NEW TECHNOLOGY REVIEW** 

It is the view of SOENECS that the Electromagnetic Induction Gasification System (EIGS) has the potential to revolutionize the way that difficult wastes can be managed in an appropriate, localized and optimal way, according to their individual chemical and physical composition.

Author: Dr. David Greenfield February 2017





### Lloyd's

The world's specialist insurance market for over 325 years. The world's leading insurance platform



Underwriting since 1688

"Operational Performance Guarantee -Worldwide up to 120% of Total Equipment Cost"

