

Press Release

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For Immediate Release
Date: January 18, 2007

Subject: Cheyenne, Wyoming postpones consideration of trash-to-energy technology.

WaterSmart Environmental, Inc. announces the postponing of its proposed **Wastes-To-Renewable Energy & Biofuels Project** at the City of Cheyenne, Wyoming. The principal features of the proposed technology include:

1. **Energy, Fuels, and Water Independence for the City of Cheyenne.**
2. **The distribution and sale of electricity to the citizens and businesses of Cheyenne at a discount from retail.**
3. **The distribution and sale of biofuels to the citizens and businesses of Cheyenne at a discount from retail.**
4. **The distribution and sale of potable water to the citizens and businesses of Cheyenne at a discount from retail.**
5. **Cheyenne becomes a zero wastes-to-landfill community.**
6. **The gradual elimination of the existing landfill by mining its contents to create additional renewable energy.**
7. **Zero capital costs to the City of Cheyenne and zero requirement to increase either sales or property taxes.**
8. **The 50:50 sharing of operating profits with the City of Cheyenne to increase municipal employee pay and to help fund routine municipal projects.**
9. **The bottled water quality water discharged from the trash-to-energy facility would be pumped into the Ogallala Aquifer to help refill it to its original condition, a condition that existed before massive irrigation began many years ago. The pumping would be accomplished on a 100% donation basis free of cost to the City of Cheyenne and free of cost to the present and future benefactors of the aquifer itself.**
10. **The technology also helps reverse global warming by eliminating all discharges of greenhouse gases to the environment.**

The city officials that considered the proposal consisted of Craig C. Whitehead (Landfill Project Manager and Assistant Public Works Director), Kenneth W. Lewis (Director of Planning & Development Department City Engineer), and Jackie C. Smith (Public Works Director). The proposal occurred on January 16, 2007 and its consideration was postponed on January 18, 2007. In an email to WaterSmart Environmental, Inc. Mr. Whitehead stated..."Although there is little risk to the City we will need to wait until you have an operating plant on the ground before we are able to move forward with a project in Cheyenne."

A copy of the two technical presentations are attached.

WaterSmart Environmental is marketing its Kyoto Protocol compliant wastes-to-energy technology on an economic development platform to concentrated animal feeding operators and to municipalities. Animal farmers benefit by purchasing biodiesel, electricity, and natural gas (methane) at a 20% discount from retail. Municipalities also benefit by making biodiesel, electricity, natural gas, and potable

water available to its citizens and businesses at a 20% discount from existing prices. The technology is marketed on a build-own-operate basis thereby eliminating the necessity for local sales and property tax increases since project financing is entirely secured from the financial marketplace. Municipalities that embrace the waste-to-energy technology automatically become zero waste-to-landfill communities. The waste-to-renewable energy technology has been slowly developed over the last 10 years. It is just now being introduced to the international marketplace. The technology has the clear potential for making every single city throughout the world energy and fuels independent while reducing oil and natural gas imports. The technology will also permit every single city throughout the world to improve water and wastewater treatment infrastructure while creating jobs and investment opportunities. The waste-to-energy technology can also be applied to Sugar Cane Mills as well as Pulp & Paper Mills with equal success. Both types of mills become energy, food, fuels, and water independent while significantly increasing profits from routine operations. In the case of Sugar Cane Mills temporary and seasonal jobs turn into full time better paying jobs.

WaterSmart Environmental, Inc. is a provider of waste-to-energy, food independence, water independence, and energy independence technologies and a manufacturer of highly engineered water purification components and systems. The company designs and builds a wide variety of water treatment equipment including packaged water and wastewater treatment plants, UltraPac™ aerobic package plants, OAT™ Process anaerobic digesters with associated energy production, aerators, filters, Pur-iSep™ and SmartWater™ oil/water and solids/liquids separators, RainDrain™ perimeter trench sand filters for stormwater runoff, dissolved air flotation separators, air strippers, complete skid assembled aqueous waste treatment plants, FilterFresh™ skid mounted potable water production plants, skid mounted wastewater treatment systems for laundromats, commercial laundries, and car/truck wash facilities with water reclamation and reuse, softeners, demineralizers, activated carbon treatment equipment, and water purifiers for domestic and international markets.

*Specialists in Water and Wastewater Treatment Featuring
Next Generation Wastes-To-**Renewable Energy** Technologies*



**MSW-To- Renewable Energy
and Biofuels BioRefinery
City of Cheyenne, Wyoming**

Made possible by the
OAT™

Optimized Anaerobic Treatment
Process and **Spirulina Photobioreactor**
Microalgae Production Technologies

Zero Wastes to Landfill.

- 💧 All ferrous and non-ferrous metals sorted out and recycled.
- 💧 Glass, rubber, leather, plastics, and other residuals are ground and digested.
- 💧 All remaining organics are also anaerobically digested.

Digester Co-Products.

- 💧 Methane gas
- 💧 Carbon dioxide gas
- 💧 Organic fertilizer – 30% moisture
- 💧 Liquid fertilizer concentrate
- 💧 Reverse osmosis permeate water

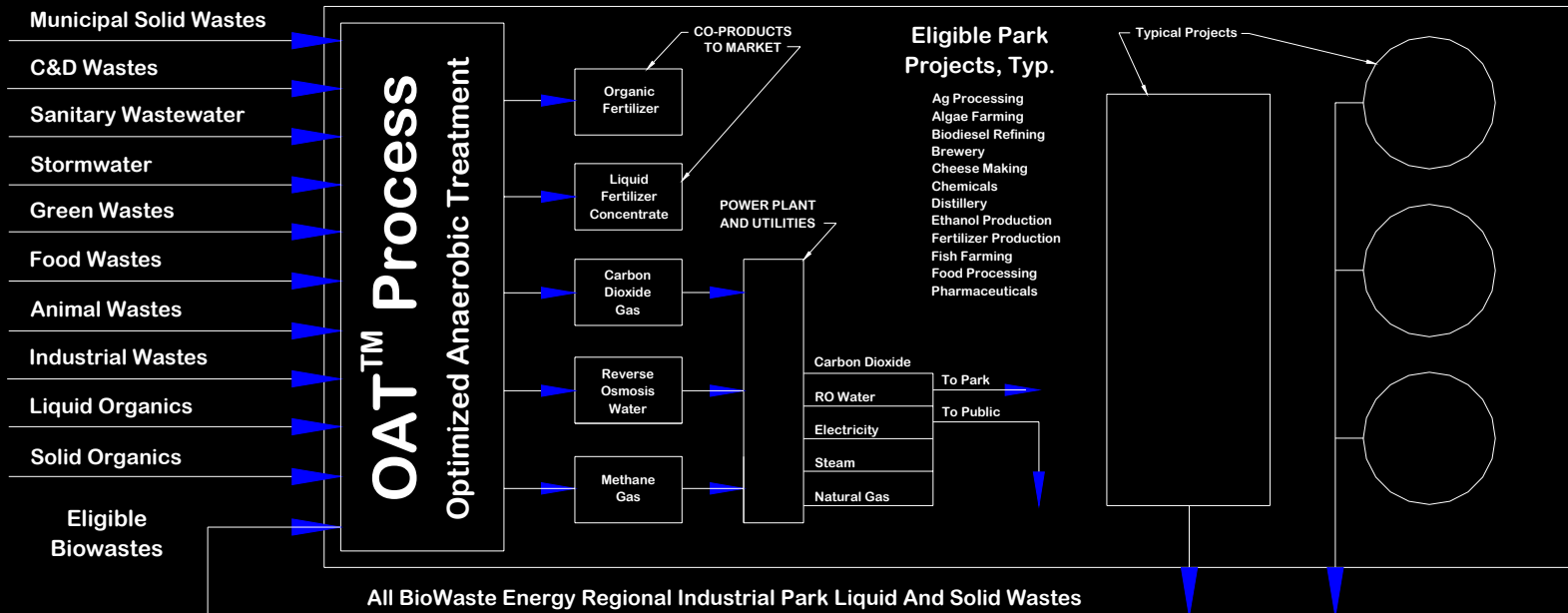
Combined Cycle Electricity Generation.

- 💧 Methane gas is used to generate electricity with reciprocating engines or gas turbines.
 - 💧 Waste heat from methane gas electric power generation is used to make steam.
 - 💧 Steam is then used in a steam turbine generator to make additional electricity.
- ...Very efficient cogeneration of electricity.

Regional Industrial Energy Park

BioWaste Energy Regional Industrial Park

Operated By BioWasteEnergy, A Division Of WaterSmart Environmental, Inc.



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 File: D:\2003\7-5-03\7500

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 WaterSmart Environmental, Inc.
 Shawnee, Kansas

Material Flow Schematic

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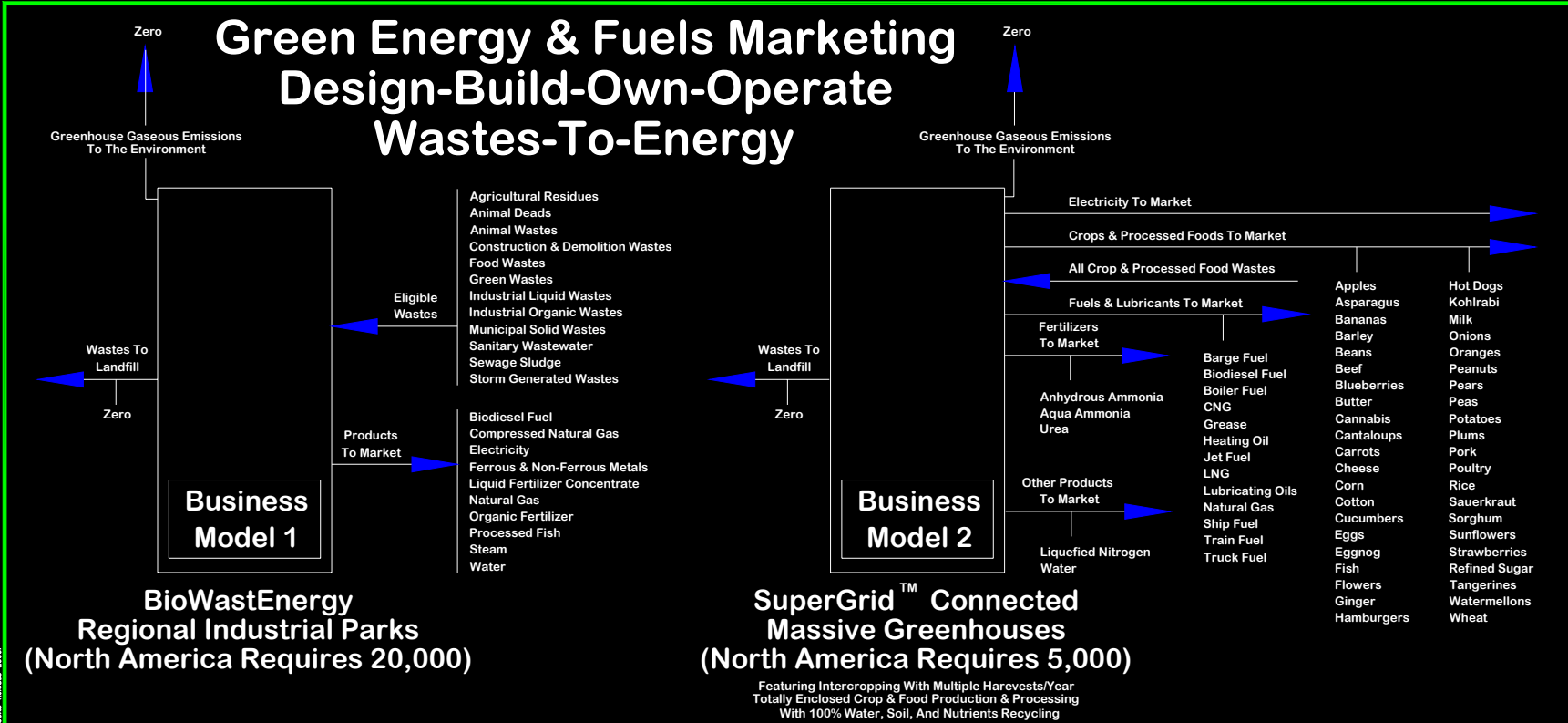
TITLE: **BioWaste Energy Regional Industrial Park**
 JOB: **Any Municipality or County Anywhere Located**

REV.	DATE	DESCRIPTION	BY	CHK

SCALE: NONE DRAWN: B.E.H. CHECKED: C.G.S.
 DATE: 7/5/03
 SHEET NO.: S-0201-1

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Business Models



100% Renewable Energy, Food, Fuels, and Water Independence Technologies
 Kyoto Protocol Compliant Producing CO₂, Mercury, NO_x, SO_x, Renewable Energy, and Weather Credits
 With Enormous High Quality Permanent Jobs Creation Potential

- Note 1: Governmental Subsidies Not Required Or Considered.
- Note 2: Above Technologies Gradually Replace Oil Companies.
- Note 3: Above Technologies Gradually Replace Existing Electricity Grids.
- Note 4: Above Technologies Gradually Replace Decommissioned And Active Landfills.
- Note 5: Above Technologies Gradually Replace Coal Fired And Nuclear Power Plants.
- Note 6: Above Technologies Gradually Eliminate Dependency On Domestic And Foreign Oil.
- Note 7: Above Technologies Gradually Eliminate The Bases For Existing Agricultural And Energy Subsidies.
- Note 8: Above Technologies Gradually Promote Global Peace While Completely Eliminating World Hunger.
- Note 9: Above Technologies Gradually Lower The Marketplace Price Of Electricity, Food, Fuels, And Water.
- Note 10: Above Technologies Gradually Reverse Global Warming Due To Consumptive Depletion Of Carbon Dioxide!

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Renewable Energy, Food, Fuels and Water Independence

For Every City And Nation
 Anywhere Located

SCALE: NONE DRAWN: B.E.H. REC. BY: S-2004-2
 DATE: 6/1/04 CHECKED: C.A.S.

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Rev. Date: 6-1-2004/1500
 File: S-2004-2-1-1
 Prepared On: AutoCAD Release: 2000

Solids (Digestate) Composition.

- 💧 Grit and sand.
- 💧 Insoluble Sulfides of Cadmium, Calcium, Copper, Iron, Lead, Manganese, Trivalent Chromium, and Zinc.
- 💧 Approximately 1-1-1 NPK (Nitrogen, Phosphorus, and Potassium)
- 💧 Qualifies as Class “A” Biosolids in compliance with 40 CFR Part 503
- 💧 Also Qualifies as Organic Fertilizer

Solids Management.

- 💧 May be sold to the marketplace as an organic fertilizer commodity.
- 💧 May be sold to the marketplace as a soil amendment.
- 💧 May be used as an aggregate in the manufacture of precast concrete wall and floor panels.

Liquid Streams.

- 💧 Liquid fertilizer concentrate.
- 💧 Reverse osmosis permeate.

Liquid Fertilizer Concentrate.

- 💧 Contains about 20-10-10 NPK in a 70% water solution.
- 💧 Contains trace amounts of aluminum, magnesium, and sodium salts

Reverse Osmosis Permeate Water.

- 💧 Total dissolved solids < 50 mg/L
- 💧 Total coliform count < 1MPN/100 mL
- 💧 BOD < 1 mg/L
- 💧 COD < 1 mg/L
- 💧 TOC < 1 mg/L
- 💧 TSS < 1 mg/L
- 💧 NPK < 1 mg/L

Liquids Management.

- 💧 Liquid fertilizer concentrate may be sold to the marketplace as a commodity.
- 💧 Reverse osmosis permeate water may be used for boiler water make-up, aquifer recharge, bottled water, or irrigation.

Other Co-Products.

- ☹ Methane gas.

- ☹ Carbon dioxide gas.

Co-Product Methane Gas.

- 💧 Is compressed, dried, and stored at 300 psig for possible site use and for the generation of electricity.
- 💧 Compressed methane may also be sold as CNG (compressed natural gas).
- 💧 Generated electricity may be used at site as well as sold to utility grid.

Co-Product Carbon Dioxide Gas.

- 💧 Is compressed, dried, purified, liquefied, and stored at 300 psig for sale to the marketplace as a commodity.
- 💧 Meets food and medical grade quality.

Co-Product Management.

- 💧 No release of methane gas to the environment.
- 💧 No release of carbon dioxide gas to the environment.
- 💧 No gas releases accomplish a 500%+ reduction in greenhouse gas effect.

Odor Control.

- 💧 MSW receiving and sorting building is kept under negative pressure thereby preventing odor escape to the environment.
- 💧 Air quality within receiving and sorting building is continuously purified by vapor phase activated carbon.

The OAT™ Process.

Is the *only* process that combines:

- 💧 Two-phase Anaerobic Digestion
- 💧 Thermophilic Bacteria
- 💧 Staged Phase Treatment
- 💧 Fixed Growth Media
- 💧 Flow Recirculation
- 💧 pH and Temperature Control
- 💧 Essential Nutrient Addition

Bacteria Can Produce Fuel From Liquid & Solid Wastes.

- 💧 Solid waste landfills biologically generate methane gas (called *biogas*) as clear evidence of the ability of bacteria to produce fuel.
- 💧 Biogas is a mixture of carbon dioxide and methane gas. It has a heating value of about 25,000 kJ per cubic meter.
- 💧 Biogas may be used as a primary fuel or to generate electricity.

Wastewater Treatment Plants Use Bacteria.

- 💧 Almost all wastewater treatment plants use bacteria to treat the water.
- 💧 Aerobic plants use aeration. They *consume* about 8,000 kJ per kg COD (Chemical Oxygen Demand) removed.
- 💧 WaterSmart's OAT™ anaerobic plant *generates* about 22,000 kJ/kg COD for an energy improvement of about 30,000 kJ/kg COD.

Wastes That Can Be Converted Into Methane.

- 💧 Municipal Wastewater
- 💧 Landfill Leachate
- 💧 Chemical Manufacturing
- 💧 Pulp & Paper Mills
- 💧 Sugar Mills
- 💧 Palm Oil Mills
- 💧 Breweries & Distilleries
- 💧 Fish & Food Processing
- 💧 Agricultural Solid Wastes
- 💧 Cardboard & Sawdust
- 💧 Ethanol Plants
- 💧 Rubber Plantations

...More Eligible Wastes.

- 💧 Animal Feed Lot Wastes
- 💧 Dairy & Cheese Production
- 💧 Fruit & Vegetable Canning
- 💧 Pharmaceutical Wastes
- 💧 Rendering Plants
- 💧 Textile Manufacturing
- 💧 Municipal & Industrial Digester Sludge
- 💧 Municipal Solid Wastes
- 💧 Landfill Wastes

A Renewable And Alternative Energy Source.

- 💧 These many wastes are generated each and every day in the normal course of living.
- 💧 The routine treatment or disposal of wastes is tremendously *expensive*.
- 💧 The OAT™ process, however, makes their conversion into methane gas and other co-products *profitable*, an extremely pleasant surprise.
- 💧 This was made possible by viewing wastes as a resource rather than a burden on society.

Excess Energy Produced.

- 💧 The OAT process uses some of the methane it generates to heat the wastewater being treated.
- 💧 The excess methane can be sold, used to operate equipment, or generate electricity.
- 💧 The excess **green power** electricity can be used by the treatment plant, sold to the local electric utility, or even to a distant business or city through the Internet.

Positive Return On Investment.

- 💧 When one generates a profit from the treatment of wastes, a *positive return on investment* (ROI) always results.
- 💧 Rather than a burden on society, wastes may now be viewed as an asset--an incredible reversal of common perception.
- 💧 Wastewater treatment plants of the patented OAT™ design pay for themselves!

Energy Costs.

- 💧 Wastewater treatment is very expensive, particularly because of energy costs that frequently seem to increase at 3-5% every year.
- 💧 A typical biological wastewater treatment plant uses about 8,000 kJ per kg COD (Chemical Oxygen Demand) removed.
- 💧 WaterSmart's OAT process can produce up to 22,000 kJ/kg COD removed, for an *energy improvement* of about 30,000 kJ per kg COD.

Capital Equipment Costs.

- 💧 Are also very expensive, on the order of US\$2K+ for every kg of COD treatment capacity.
- 💧 If ammonia, nitrate, phosphorus, or heavy metal removals are required, the associated costs are much higher.
- 💧 WaterSmart's OAT™ Anaerobic Treatment Plant costs about half as much as other anaerobic systems treating the same amount of COD or Volatile Solids.

Environmentally Friendly And Sensible.

- 💧 Korea's Sudokwon Landfill, the world's largest, has the motto: *"Don't Waste Wastes."*
- 💧 We share that view and believe wastes should be converted into something useful, like fuel or electricity, if it can be done so safely and economically.
- 💧 In so doing, waste volumes are greatly reduced to better manage the environment for ourselves and the next generation.

Odors?

Absolutely None!

- 💧 All treatment is carried out in closed vessels
- 💧 Hydrogen Sulfide is removed from produced biogas.
- 💧 All gasses are captured and used or recycled. None escape.

Environmental Damage? Absolutely None!

- 💧 No emissions to atmosphere
- 💧 Heavy metals removed as insoluble sulfides
- 💧 Organic constituents are converted into methane gas.
- 💧 All nutrients are captured and recycled.

Beneficial Co-Products.

In addition to **methane gas**, the OAT™ process generates other useful and profitable co-products.

- 💧 Carbon Dioxide
- 💧 Organic Fertilizer
- 💧 Liquid Fertilizer Concentrate
- 💧 Reverse Osmosis Permeate Water

Greenhouse Gas.

- 💧 All power generation combustion gas is routed to an enclosed photobioreactor for the purpose of enhancing the growth of Spirulina microalgae.
- 💧 Carbon dioxide gas from the anaerobic digester is used for dry ice production with excess routed to an enclosed photobioreactor for the purpose of enhancing the growth of Spirulina microalgae.
- 💧 No methane or other gas is ever discharged to the environment.

Noise...

Practically none!

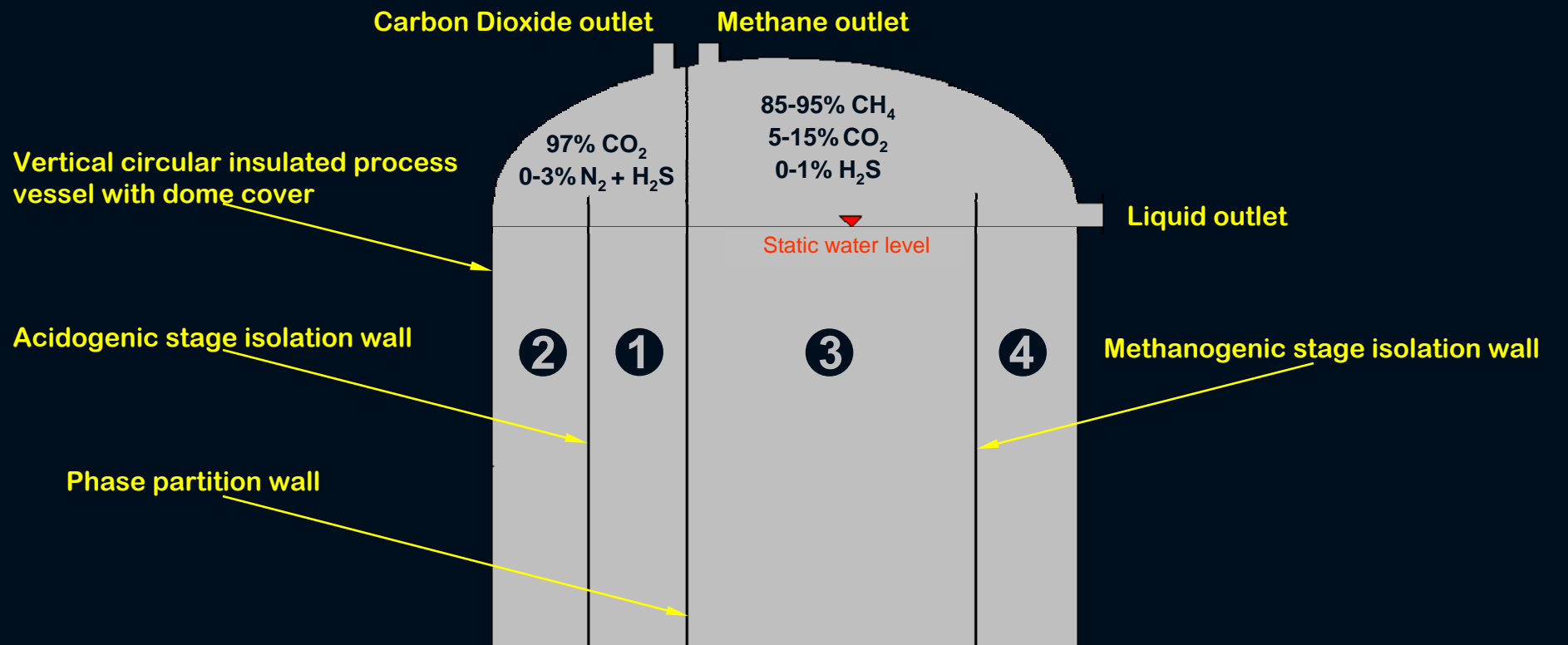
The loudest component is a biogas powered generator or turbine -- similar to a truck engine.

Noise producing equipment can easily be enclosed for noise attenuation

Sludge

- 💧 0.01 pounds of solids produced for every pound of BOD removed—about 25% that of competitive anaerobic treatment plants!
- 💧 OAT™ process sludge qualifies as **Class “A” Biosolids** that can be sold as fully certified organic fertilizer.

Single Vessel Design.



① 1st stage acidogenic digester

② 2nd stage acidogenic digester

③ 1st stage methanogenic digester

④ 2nd stage methanogenic digester

Headworks.

- 💧 Trash and grit removal.
- 💧 Grind or comminute the raw wastewater.
- 💧 No primary treatment required.
- 💧 Biosolids may be ground and added.
- 💧 Organic solid wastes may also be added.
- 💧 Liquid organic wastes may also be added.
- 💧 Green wastes may also be added.
- 💧 Food wastes may also be added.
- 💧 Existing landfill wastes may also be added.

Sophisticated Design But Easy To Operate.

- 💧 **Automatic controls simplify routine plant operations.**
- 💧 **Close process control translates into a high degree of treatment efficiency.**
- 💧 **Minimal plant operator skill required.**

OAT Upgrades Available.

- Existing anaerobic digesters may usually be upgraded to the OAT process thus saving project site construction and piping costs.
- A complete upgrade to the OAT process can increase the digester organic loading capacity 10 times.
- Beneficial use or sale of the produced methane gas, generated electricity, Class A biosolids, reverse osmosis permeate water, and carbon dioxide gas makes the upgrade a positive ROI.

BioRefinery

- 💧 Consists of SuperBiodiesel™
- 💧 Consists of Compressed Natural Gas (CNG)
- 💧 And also includes BioLubricants™

Summary.

- 💧 Wastes can be beneficially converted into fuel or electricity.
- 💧 An efficient anaerobic treatment process results in a positive return on investment.
- 💧 The OAT™ process is the **most efficient** anaerobic treatment available worldwide.
- 💧 OAT™ plants are smaller, less expensive, do not smell, and generate a profit.
- 💧 Reverse Osmosis permeate water can be used for aquifer recharge.

SuperBiodiesel™

- 💧 Will be sold at a 20% discount from petroleum diesel.
- 💧 Fueling stations will be installed on both sides of Interstate 80.

Compressed Natural Gas (CNG)

- 💧 Will be sold at a 20% discount from gasoline, gasohol (E10), and ethanol (E85) on a gasoline gallon equivalent (GGE) basis.
- 💧 Fueling stations will be installed on both sides of Interstate 80 at the same fueling stations that sell SuperBiodiesel™. The fueling stations will also sell BioLubricants™, Bottled Water, and Frozen Fish.

Hand-Out Publications

- 💧 WSE Publication No. 1346 – Fate and Effects of Heavy Metals
- 💧 WSE Publication No. 1455 – Solid Waste Management
- 💧 WSE Publication No. 2201 – Biowastes-To-Energy Business Models 1 & 2
- 💧 WSE Publication No. 6000 - Concession Agreements

For Project Development and Feasibility Studies

Contact: *WaterSmart Environmental, Inc.*

POC: C. G. (Chuck) Steiner

Phone: 913.897.2727

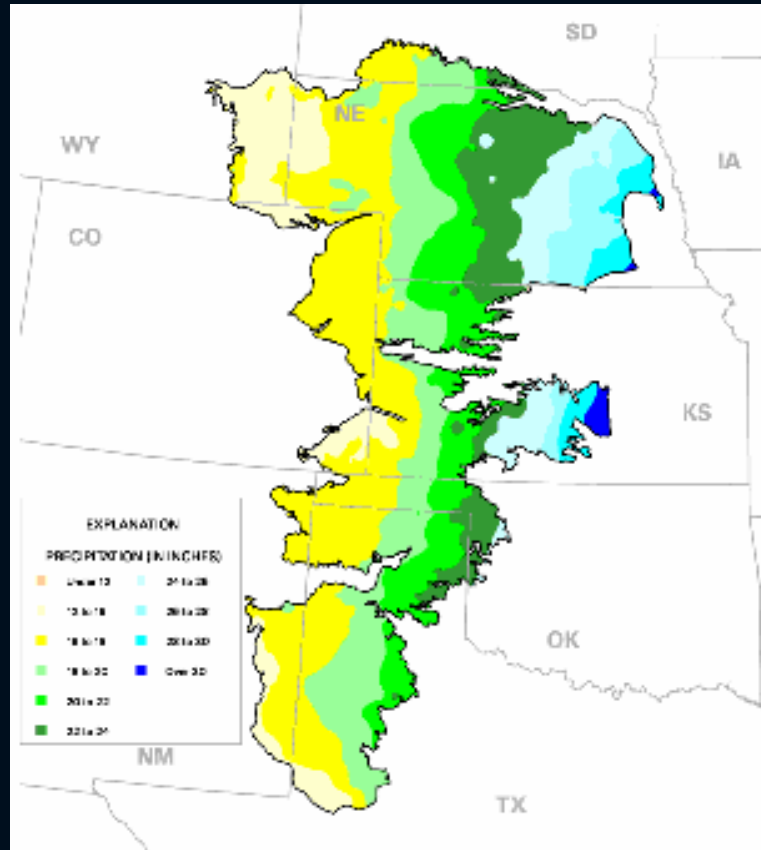
Fax: 913.897.1902

email: ChuckSteiner@watersmart.com

Website: www.watersmart.com

**Recharge The Ogallala
And Other Aquifers Through
Waste-To-Energy
Technologies**

Ogallala Rainfall Map



Waste-To-Energy

Is marketed and developed as

BioWaste Energy Regional Industrial Parks

- ◆ Each park treats sanitary wastewater, municipal solid wastes, food processing wastes, and biodiesel refining wastes.
- ◆ All organic wastes can be accepted.
- ◆ Each Park is operated by BioWasteEnergy, A Division of WaterSmart Environmental, Inc.

Zero Capital Costs For

💧 Cities

💧 Counties

💧 Utilities

💧 Industrial Waste Generators

💧 Agricultural Waste Producers

💧 Animal Feed Lots

💧 Landfill Operators

Regional Industrial Parks

- 💧 No tax money for their construction. Project financing is raised from financial markets. Sales and property taxes will not increase due to park construction.
- 💧 Always generate significant renewable energy credits because they have a positive impact on global warming. These credits increase park profits.
- 💧 Always increase farming property worth by creating greater value per acre than existing use.
- 💧 Have zero emissions to the environment.
- 💧 Have zero wastes that require landfill disposal.
- 💧 Always create both temporary and permanent jobs.

Regional Industrial Parks

- 💧 **Generate 100% of a community's electricity demand thereby permitting a city to eventually disconnect from the grid.**
- 💧 **Generate 100% of a community's diesel fuel demand with biodiesel as a perfect replacement for petroleum diesel.**
- 💧 **Generate 100% of a community's demand for natural gas since digester methane gas is a perfect replacement for pipeline supplied natural gas.**
- 💧 **Enable the use of compressed natural gas (CNG) fuel for gasoline powered engines. CNG is cleaner burning than gasoline and significantly extends engine life.**

Regional Industrial Parks

- 💧 Supply 100% of the local demand for fresh fish through fish farming activities. All fish raised will be Mercury free by being grown under cover. Mercury-free fish will be exported to the marketplace. Fish farming will be practiced 365 days/year using waste heat energy for heating of pond water during winter months.
- 💧 Produce biodiesel via microalgae farming 365 days/year.
- 💧 Fish and microalgae farming generate far greater value/acre than all other food production products. Processing fish and biodiesel refining are “value added” activities for the economic benefit of local farmers.

Regional Industrial Parks

- ◆ Allow the full privatization of a community's wastewater treatment plant.
- ◆ Convert the community's potable water plant to membrane treatment. Membrane treatment is far more secure from terrorist attack than all lesser forms of water treatment. The cost of membrane conversion is included within total project financing. If the water plant is fully privatized the cost of potable water to citizens and businesses decreases by 20%.
- ◆ The electricity, natural gas, CNG fuel, and biodiesel fuel will also be sold at a discount.

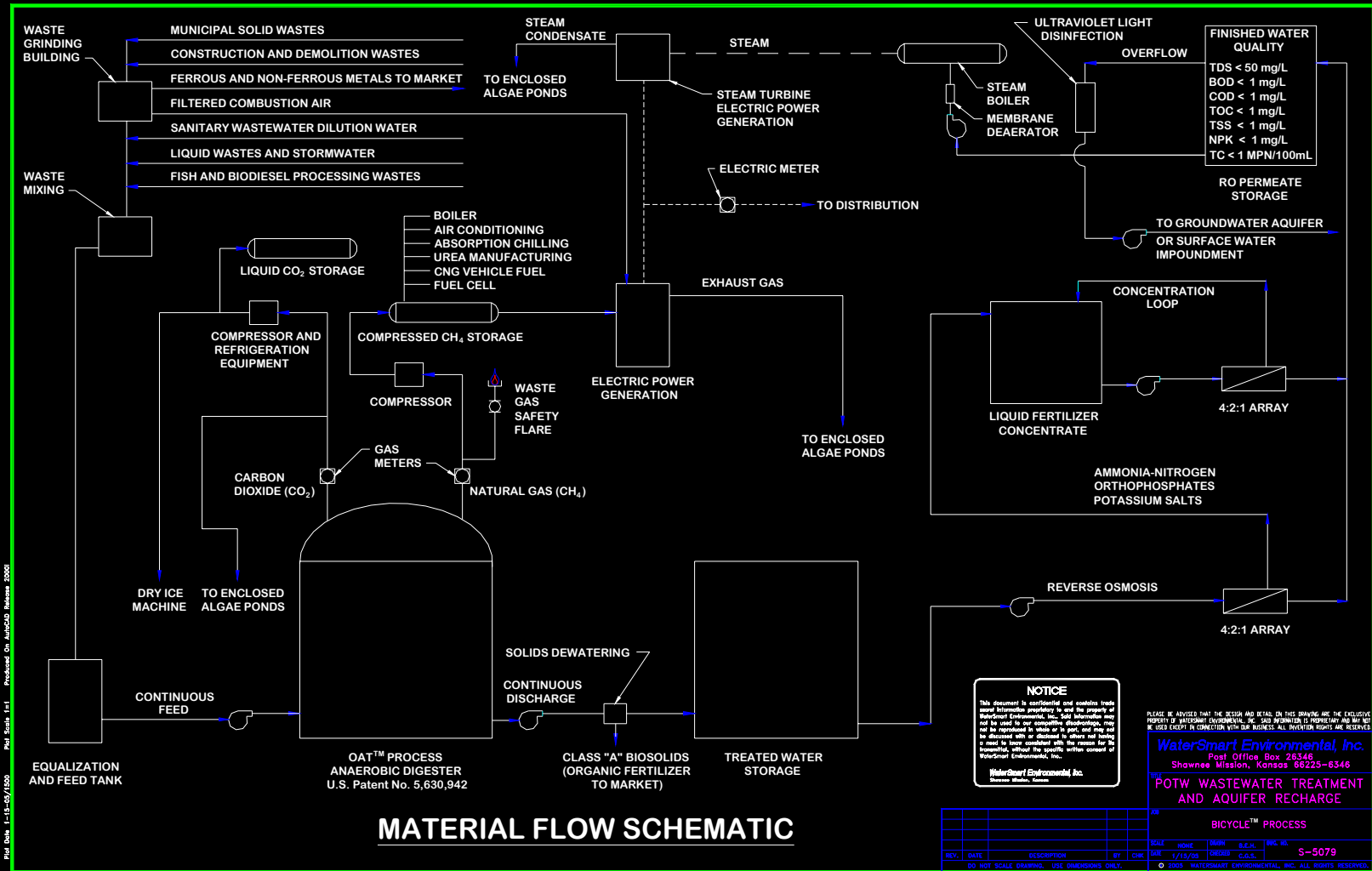
Regional Industrial Parks

- ◆ Permit the continuance or elimination of community trash recycling programs. Each park will recycle ferrous and non-ferrous metals (beer and pop cans) and nothing else.
- ◆ Will accomplish stormwater treatment by beneficially using it as municipal solid waste dilution water.
- ◆ Will be organized as for-profit corporations. Each park will share its annual profits with the city or county on a 50:50 donation basis to enhance municipal payroll compensation and to help fund routine municipal projects.
- ◆ Can be implemented through a simple city or county concession agreement.

WaterSmart's Waste-To-Energy Anaerobic Treatment Process

- 💧 Has been carefully designed to recycle 100% of its residuals.
- 💧 Therefore, no material left over requires landfill or other disposal.

Material Flow Schematic No. 1



MATERIAL FLOW SCHEMATIC

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POTW WASTEWATER TREATMENT AND AQUIFER RECHARGE

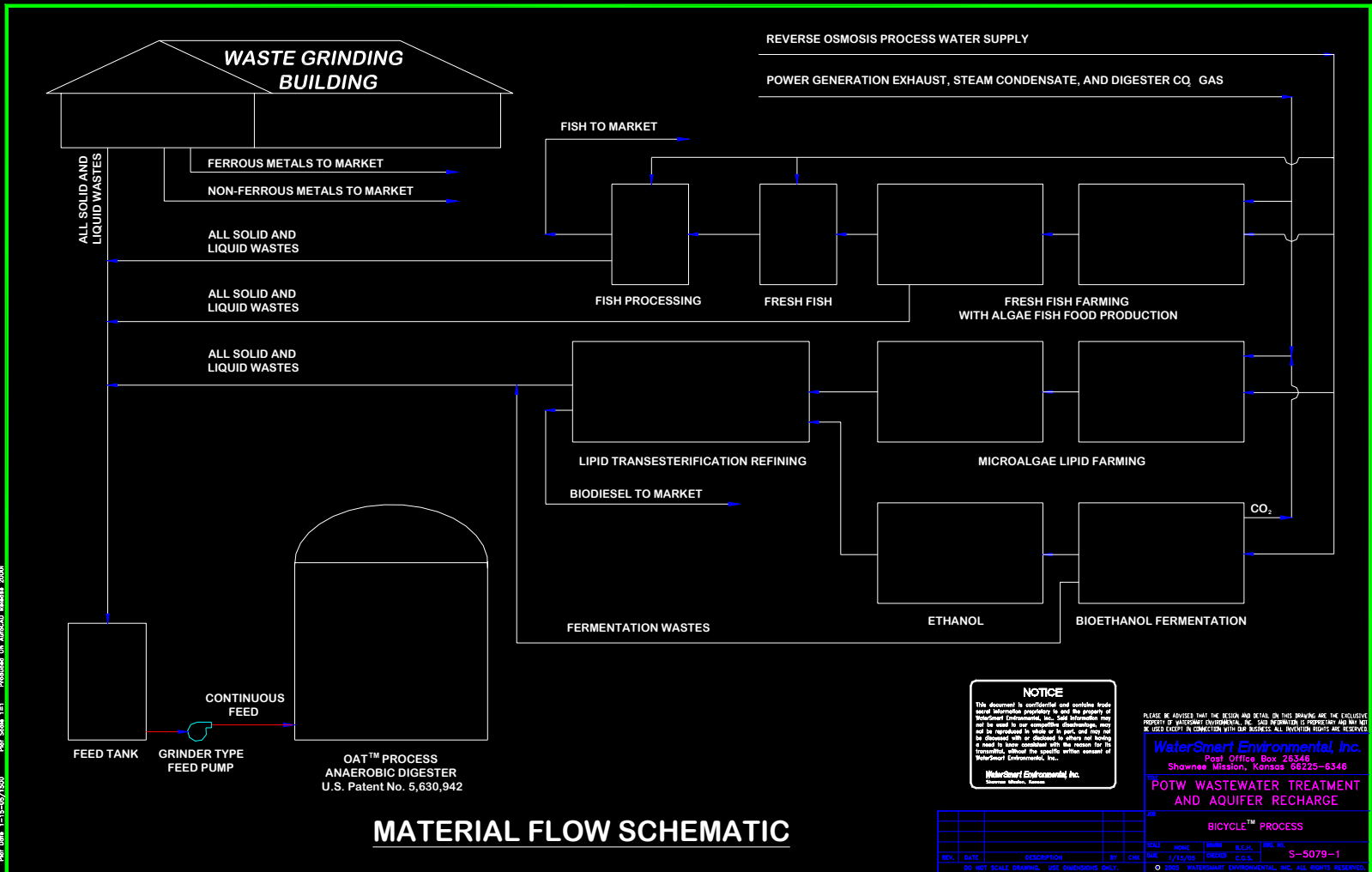
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 Ref: 2004-1-15-05/1030
 Produced On: AutoCAD Release: 2005

Material Flow Schematic No. 2



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POTW WASTEWATER TREATMENT AND AQUIFER RECHARGE

MATERIAL FLOW SCHEMATIC

REV.	DATE	DESCRIPTION	BY	CHK

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SCALE	NO.	FRAME	SHEET	REV.

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Plot Date: 1-13-07/100
 Plot Scale: 1:1
 Prepared On: AutoCAD Release: 2006

More Than 50 Existing North American MSW-To-Energy Plants Use Incineration To Generate Electricity

- 💧 Other than scrap metals no other valuable co-products are produced.
- 💧 Associated air pollution is always a concern.
- 💧 The resulting ash must be landfill disposed.
- 💧 The plant's owner/operator makes very little profit.
- 💧 Consequently, existing MSW-to-energy technology is held in low esteem by both investors and environmentalists.

One Major Reason For Low Profits--

The High Moisture Content Of Municipal Solid Wastes (MSW)

- 💧 The efficiency of incineration technology is **Greatly Diminished** by the ever present high moisture content of MSW.
- 💧 Incineration Technology is a **Dry Process**.
- 💧 Anaerobic Digestion is a **Wet Process**.

Anaerobic Digestion

- 💧 Is already being used by municipalities to generate methane gas to fuel electric power generators.
- 💧 Is already being used by dairies and concentrated animal feeding operators to produce fuel and generate electricity.
- 💧 Is already being used by the food and beverage industry to generate electricity.
- 💧 Can be used to produce methane gas from municipal solid wastes.

Each System Component Is Established Technology

- 💧 MSW sorting to remove beer and pop cans.
- 💧 Size reduction (grinding).
- 💧 Slurry mixing.
- 💧 Anaerobic digestion.
- 💧 Carbon dioxide compression.
- 💧 Methane compression.
- 💧 CNG fuel for gas generators.
- 💧 Reverse osmosis membrane treatment.

Digester Co-Products

- 💧 Methane gas
- 💧 Carbon dioxide gas
- 💧 Digester solids
- 💧 Liquid fertilizer concentrate
- 💧 Reverse osmosis permeate water

Methane Gas

- ◆ Is dried, compressed, and beneficially used as a fuel to power internal combustion engines or *gas turbines* to generate electricity.
- ◆ Waste heat from power generation equipment is beneficially used to make steam. The steam is used to make additional electricity. When two methods are simultaneously used to make electricity its power generation is referred to as **combined cycle**. The efficiency of combined cycle generation is about 15% greater than simple cycle electricity generation.
- ◆ The compressed methane gas (called CNG) can also be used to fuel transportation equipment like city and county buses and trucks.
- ◆ The compressed methane gas can also be used to manufacture anhydrous ammonia and urea fertilizers.
- ◆ No methane gas from the anaerobic treatment process is released to the environment.

Carbon Dioxide Gas

- 💧 Some is used in making dry ice.
- 💧 The balance is beneficially used in the photosynthesis of carbohydrates during fish farming microalgae farming.
- 💧 No carbon dioxide will be released to the environment.

Digester Solids Composition

- ◆ Ground glass, ground sand, ground rubber, ground leather, and ground plastics.
- ◆ Highly insoluble sulfides of Cadmium, Calcium, Copper, Iron, Lead, Manganese, and zinc, Chromium Oxides, and Calcium salts. These metals and salts are beneficial, necessary, and valuable micronutrients in soil.
- ◆ Approximately 1-1-1 N-P-K (Nitrogen, Phosphorus, and Potassium).
- ◆ Qualifies as Class “A” Biosolids in compliance with 40 CFR Part 503.
- ◆ Also qualifies as an organic fertilizer.

Solids Management

- 💧 May be sold to the marketplace as an organic fertilizer or soil conditioner at 30% moisture content.
- 💧 May be sold as animal bedding.

Liquid Fertilizer Concentrate

- 💧 Contains about 20-10-10 N-P-K in a concentrated 10% dissolved solids water solution.
- 💧 Will also contain soluble aluminum, magnesium, and sodium salts.
- 💧 Is sold to the marketplace.

Reverse Osmosis Permeate Water

- 💧 Is used as boiler water make-up in producing high pressure steam for steam turbine generators.
- 💧 The balance can recharge aquifers such as the Ogallala (High Plains Aquifer).
- 💧 Orange County, California has been successfully recharging its aquifer with RO permeate water for the last 25 years.
- 💧 **If the 250 communities on the Ogallala implement the Waste-To-Energy Industrial Park Technology the High Plains Aquifer will begin refilling to its former (prior to 1940) size because recharging will then exceed depletion.**

For Project Feasibility Studies And Other Inquiries

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