

US EPA ARCHIVE DOCUMENT



# REFUSE TO RESOURCE

## “A Future Without Landfills”

California Bioresources Alliance 2012 Symposium

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Salinas Valley Solid Waste Authority

*“We Can’t Become What We Want To Be By Remaining What We Are”  
Max DePree*



# OUR PAST, OUR PRESENT: BUT IS THIS OUR FUTURE?



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# Salinas Valley Materials Recovery Center

“Recycling a ton of waste has twice the economic impact of burying it in the ground.”

In addition, recycling one additional ton of waste will pay **\$101** more in salaries and wages, produce **\$275** more in goods and services, and generate **\$135** more in sales than disposing of it in a landfill.”

*CalRecycle presentation on the economic benefits of recycling*

# What is the Salinas Valley Solid Waste Authority?

- Publically owned utility
- Economic engine for Salinas Valley jobs
- Advocate/facilitator for sustainability movement
- Manager/ operator of recycling, resource recovery and disposal facilities
- Educator/facilitator
- Independent voice for the unique nature of the Salinas Valley businesses and residents
- ***#1 – Regional Public Service Agency***

***“The best way to find yourself is to lose yourself in the service of others.” - Gandhi***



# Mission/Vision/Values

## Mission

To manage Salinas Valley solid waste as a resource, promoting sustainable, environmentally sound and cost effective practices through an integrated system of waste reduction, reuse, recycling, innovative technology, customer service and education.

## Vision

To reduce the amount of waste by promoting individual and corporate responsibility.

To recover waste for its highest and best use while balancing rates and services.

To eliminate the need for landfills.

To transform our business from burying waste to utilizing waste as a resource.

## Values

Innovation • Integrity • Public Education • Efficiency • Fiscally Prudent  
Resourcefulness • Customer Service • Community Partnerships



# “How Did We Get Here?”

- Agency History Has Taught Us Well – Too Many Landfills / Too Many Problems
- Are Landfills A Gift To Our Children?
- Just Recycle More! Is That Enough?
- Alternatives To Landfills: Study, Study, Study – THEN DECIDE

# Strategic Plan Objectives

**1. Develop a sustainable finance plan**

**2. Promote Authority's role and value as a resource recovery agency**

**3. Achieve 75% [or more] diversion by 2015**

**4. Enhance and improve public facilities and services**

**5. Promote and maintain a high performance, efficient and flexible workforce**



# Leadership for Change

*“Two roads diverged in the woods, and I took the one less traveled by, and that has made all the difference.”*

**Robert Frost**

# “Where Are We Going?”

Continue Landfilling

New Technologies



# Salinas Valley Solid Waste Authority

- **Joint Powers Authority made up of five Cities + eastern unincorporated Monterey County, CA**
- **165,000 tons per year landfilled**
- **Goal 75% Diversion (by 2015), currently at 69% (2011)**
- **Enthusiasm for conversion technologies (CT) grew from opposition to new landfill studies in 2004**
- **Study of CTs began in 2006 with formation of CT Committee**
- **Two focus projects:**
  - **Autoclave paper fiber/organics recovery project**
  - **Plasco plasma gasification project**

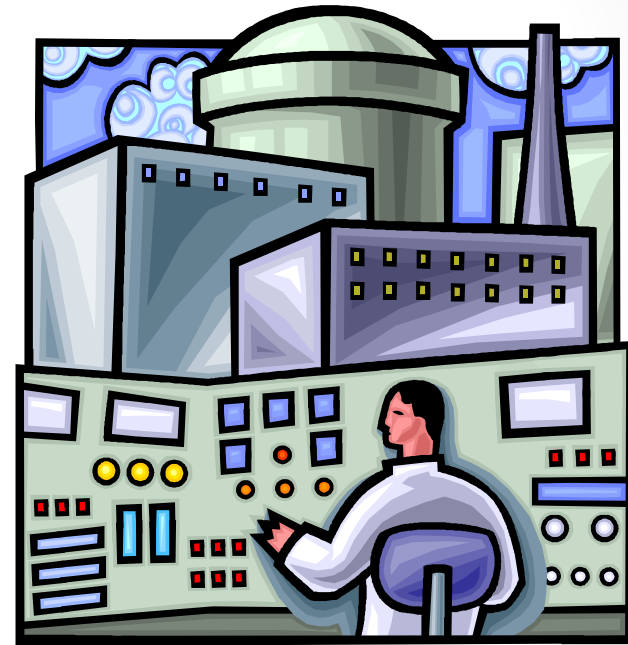
# What to Do With the Rest?

- Autoclave Technology for Cellulose Recovery
- 60%+ of Residential and Commercial “Wet” Wastestream is Cellulose: 300-400 TPD
- Many market opportunities for cellulose and organics
- Simple Technology, extensively tested by USDA, SVSWA
- Relatively low cost: \$30-\$40/ton

# Autoclave Testing Program

## 5 year testing program

- Partnership with USDA and SVSWA
- Environmental Impacts
  - Air, wastewater, noise and residue
- Technological
  - O&M requirements
  - Energy usage
  - Costs
- Marketability of products
  - Paper Pulp
  - Anaerobic Digestion
  - Ethanol Production
  - Composting
- Implementation Decision at the End of the Testing program



# Autoclave Testing Program

Rotating steam autoclave reaction vessel, 6' diameter x 15' long, 2 ton capacity



# Autoclave Testing Program

## Waste Feeding into Pilot Autoclave



# Autoclave Testing Program

## Before Steam Treatment





# Autoclave Testing Program

After steam treatment

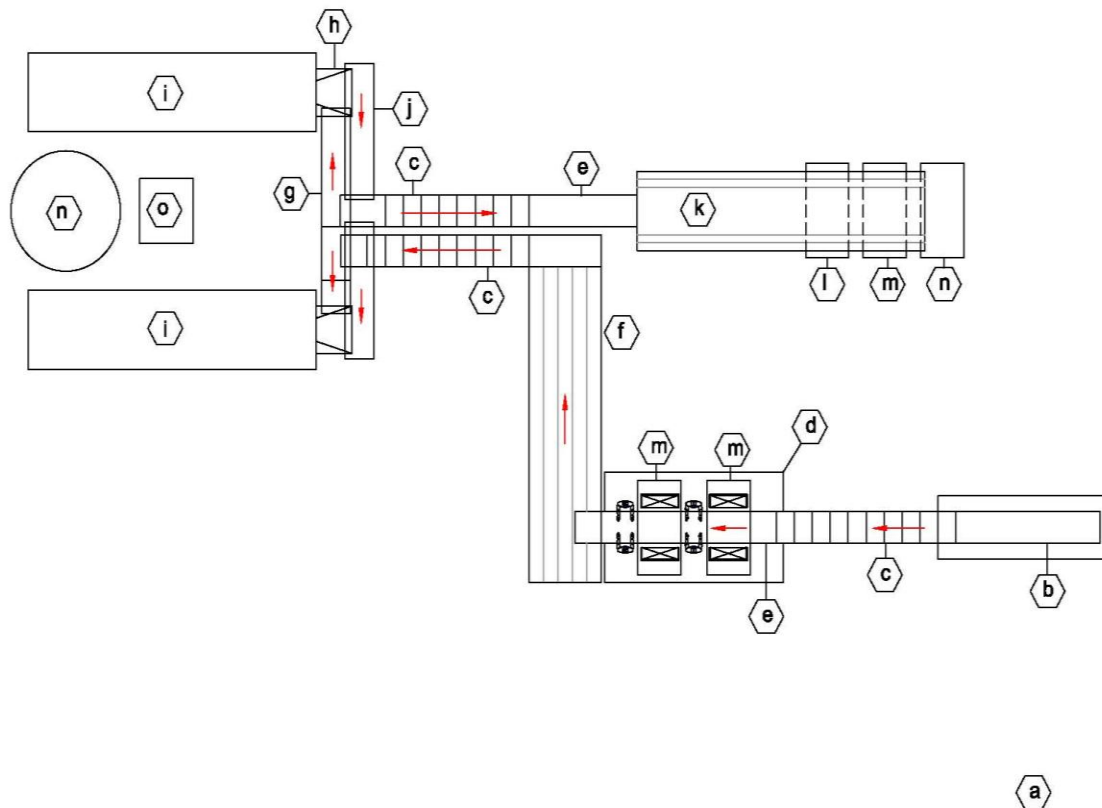


# Autoclave Testing Program

Material (3/8" -) screen separated



# Conceptual Autoclave System



## EQUIPMENT

- a** — Tipping Floor
- b** — Pit Infeed Conveyor
- c** — Incline Conveyor
- d** — Sorting Platform
- e** — Slider Belt Conveyor
- f** — Material Surge Bunker w/ Walking Floor
- g** — Loading Shuttle conveyor
- h** — Loading/Unloading Hopper
- i** — Autoclave
- j** — Unloading Conveyor - below
- k** — Trommel
- l** — Product Bin
- m** — Waste Bin
- m** — Container Bin
- n** — Liquids Recovery Tank
- o** — Steam Boiler

# Autoclave Conclusions

- Over 60% reduction in waste volume
- Cellulose recovery options
  - Ethanol production feedstock
  - Compost feedstock
  - Anaerobic digester feedstock for methane production
  - Paper Pulp w/additional washing process
- Factual performance, emissions and cost information



# COMMUNITY VALUE

- **Jobs and Economic Development**
- **Monterey County Business Council report**
  - **Supported by CA Association for Local Economic Development**
  - **\$30 million private investment**
  - **Up to 360 jobs (full and part-time) benefit from the project**
  - **\$42 million in gross economic benefit**
- **“Sustainable” project structure**
- **Enhances “Green Image” of Salinas Valley**
- **Keeps materials in U.S. (and local) economy**
  - **Supports re-birth of U.S. manufacturing**
- **Supported by Mission and Vision**
- **Would achieve SVSWA 2015 goal of 75% diversion**

# What to Do With the Residue, “Except Landfilling”?

- Incineration
- Rocket to the Sun
- **Conversion Technologies?**

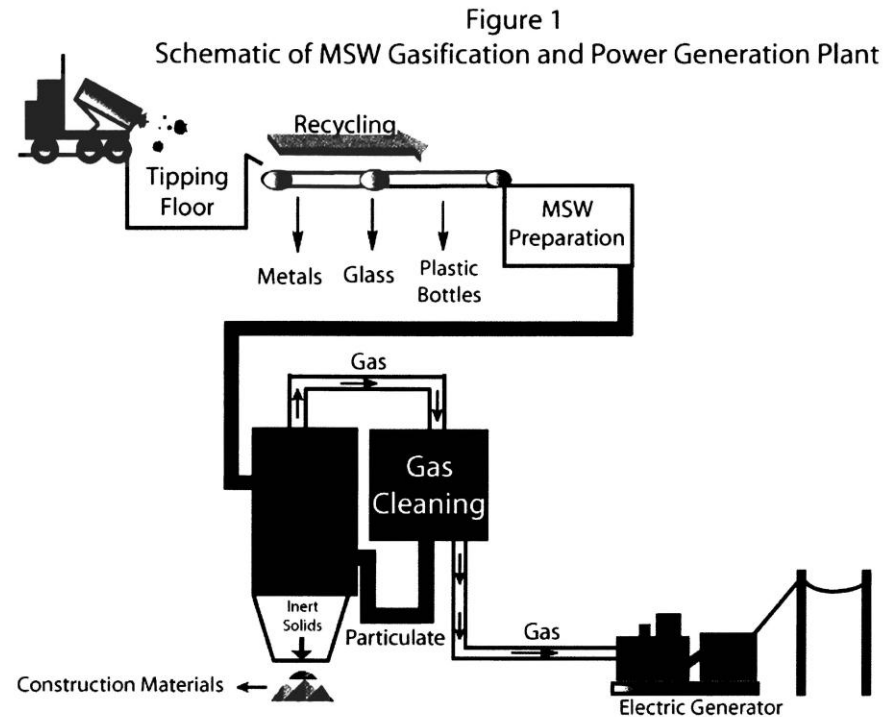
# What is a Conversion Technology

“A change in nature or form”

- Gasification
- Gasification with introduction of Plasma
- Pyrolysis
- Hydrolysis
- Anaerobic Digestion
- Many other options in various states of study

# And the Winner is? Gasification

- Use of heat, pressure and steam
- Conversion to syngas that can produce electricity
- Various processes: conventional, plasma, and pyrolysis





# Why Gasification?

- May be cheaper than continuing landfilling in the long run
- Landfills store community liability, gasification treats it!
- No new landfills in CA
- Smaller systems than incinerators, can be sized to fit our needs
- Replaces landfill
- Optional future mining and energy production from old waste
- Creates jobs
- Creates energy

# HURDLES TO SUCCESS?

- Special Interests confusing the public about technology
  - We have to redouble our efforts to keep the public factually informed
- Change is hard
- Confusing regulations
  - Badly written legislation, or is it that the plan?
- Still too easy and cheap to landfill
  - Artificially low or subsidized landfill rates slow innovation

# What's Next?

- Final project siting & CEQA for Salinas Area Materials Recovery Center (2012-13)
  - Autoclave Process, HHW, Materials Recovery Center, Organics and C&D pre-processing, transfer operations (markets & LF)
- USDA Anaerobic Basin Study
- 2012-2014
  - Ag waste and cellulose feedstock
- Plasco Plasma Gasification Project (or any thermal CT Project in CA)?????
  - On hold pending Legislative action
  - Is it Renewable?
  - CalRecycle legislative process starting

# Salinas Valley Resource Recovery Center

## QUESTIONS?

