

# Evolution of Best Available Control Technology (BACT) for WTE Plants in New York State



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# Typical Uncontrolled MSW Incinerator at Amsterdam, NY circa 1968

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- ❑ Manual combustion controls
- ❑ Rudimentary settling chamber or cyclone dust collector
- ❑ Mainly opacity standards



# First Dry Scrubber and Baghouse in New York State

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- ❑ Alcoa Primary Aluminum Pot Furnace, Dry Scrubber Activated Alumina Fabric Filter
- ❑ Massena, NY circa 1969



# Albany NY – Energy Answers Corp. WTE RDF (Refuse Derived Fuel) Suspension Fired Boiler Plant

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- ❑ Good RDF WTE burning concept
- ❑ Equipped only with ESP, not BACT\*
- ❑ BACT suggested, but not required

*\*BACT: Best Available Control Technology*

# Albany NY – Energy Answers WTE RDF



# The Teller *Tesisorb* Dry Injection Scrubber

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- ❑ First used in secondary aluminum and glass process furnaces
- ❑ Framingham, MA: Teller dry scrubber installed in WTE facility in 1974
- ❑ BACT Air Pollution Control technology transfer to Japan, Mitsubishi & Takuma 1976
- ❑ Control of dioxin emissions from incineration - Teller/Lauber 1983 AWMA, Atlanta GA

# Teller Dry Scrubber circa 1980

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- Japanese installations
- Tesisorb direct dry venturi injection to fabric filter inlet duct
- Lime + alumina + silica injection



# First Teller NYS MSW WTE Facility

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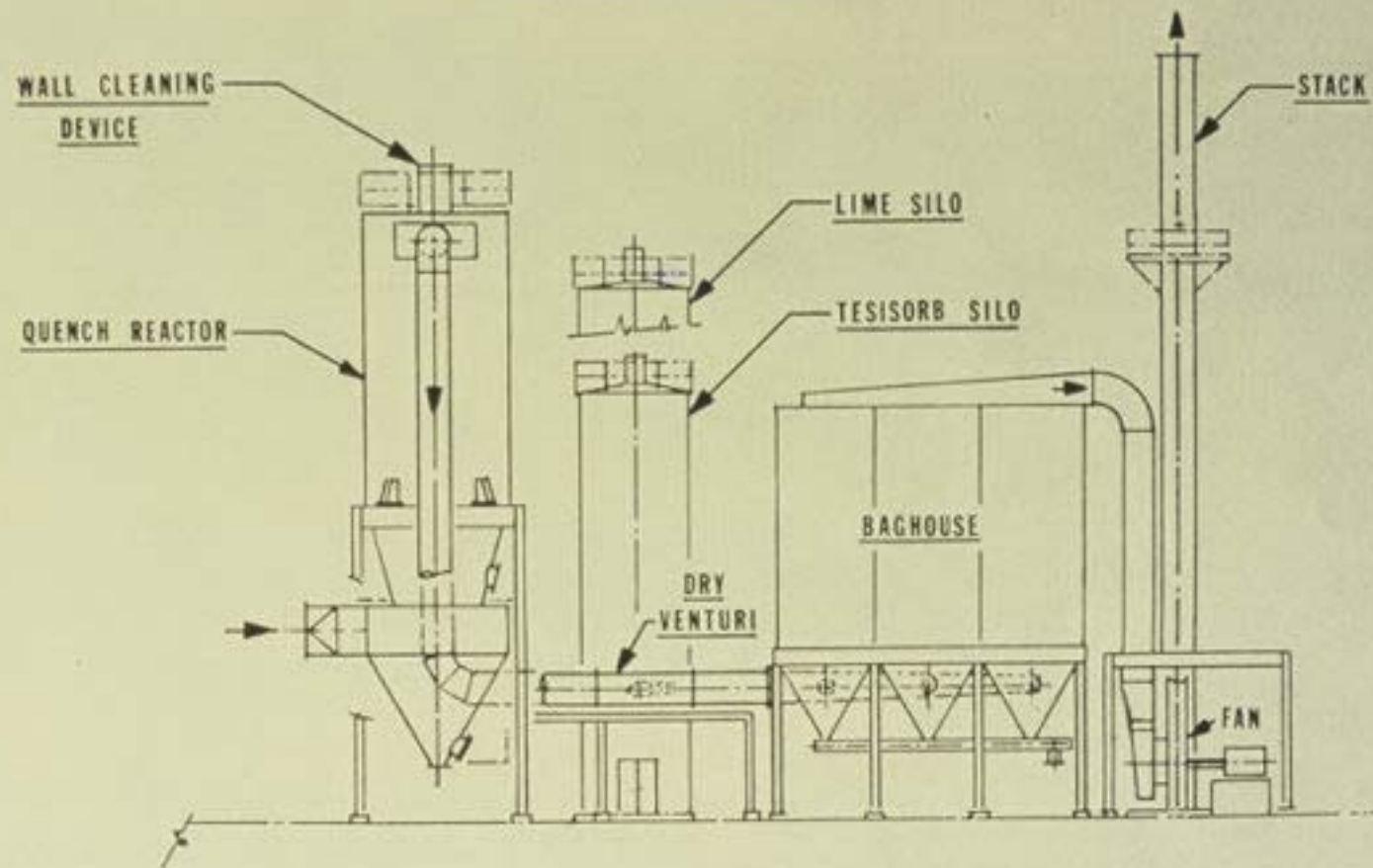
- ❑ Montenay, Dutchess County WTE Plant -1989  
O'Connor rotary combustor WTE
- ❑ 450 tpd
- ❑ Modified to Dry Scrubber, Fabric Filter (FF),  
and Activated Carbon Injection (ACI)

# Dutchess County, NY – Montenay WTE Plant

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## TELLER SYSTEM



SIDE ELEVATION

FIG. 4B

# Hempstead NY – ARF (now Covanta) WTE Plant

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- ❑ 3 units, 850 tpd ea., Mass Burn
- ❑ SDA
- ❑ Fabric Filter baghouse/lime injection
- ❑ Selective Non-Catalytic Reactor (SNCR) for NO<sub>x</sub> reduction, use of urea
- ❑ Continuous Emission Monitoring (CEM)

## Hempstead NY – ARF (now Covanta) WTE Plant

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# Onondaga Covanta WTE plant, Mass Burn

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- 3 units - 330 tpd each
- SDA
- FF/lime injection
- SNCR-NH<sub>3</sub>
- Act. C injection
- MACT Hg standard 80 ug/dscm
- CEM

# Onondaga – Covanta WTE plant

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# BACT today and for the future

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- ❑ U.S.: Implementation of EPA Maximum Available Control Technology (MACT) regulations
- ❑ E.U.: Best Available Technology (BAT) emission standards
- ❑ Afval Energie Bedrijf (AEB), Amsterdam, the Netherlands
- ❑ **Hybrid dry/wet scrubbers**

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