

J. Russell
Freeman Royal,
Please Handle!
MANATEE COUNTY
BOARD OF COUNTY COMMISSIONERS

May 12, 1993

RECEIVED

The Honorable Lawton Chiles
Governor, State of Florida
The Capitol
Tallahassee, Florida 32399-0001

RECEIVED
MAY 19 1993
D.R. OFFICE
OF THE SECRETARY

Dear Governor Chiles:

I am writing to you to ask you to look into a very serious threat to our environment. I know you are busy with many other issues. As an elected official myself, I know how many pans can be in the fire at one time; however, I am positive that irreparable damage to the environment will take place if we do not act responsibly now.

The problem is the process being used to handle our garbage. It is an unproven technology called MSW composting which is being promoted throughout our state and country. This is not the typical composting system that composts organic waste but rather a process which encompasses the entire waste stream and includes very harmful hazardous waste. Once composted, the composted material is distributed throughout the area to be used on yards, in nurseries, agriculture, etc. While the promoters, who stand to reap large profits say it is safe, I feel this method can be more hazardous than any method currently used today to handle our waste stream.

With MSW composting, there is no way to prevent hazardous waste from ending up in someone's backyard. There is no record kept of who buys this contaminated compost, so it will be next to impossible to clean up the contamination after it has been sold. This is why we need to react now. I have enclosed information that best summarizes my concerns in more detail.

To avoid further damage to our environment, it is essential to place into effect a ban on distributing this mixed composted material until the environmental concerns are addressed. Many of our rivers and lakes are closing due to mercury poisoning and no one knows what is causing this pollution. The effects of contaminated compost can touch us all. Let us not wait until this destroys our environment.

Governor Lawton Chiles


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May 12, 1993

I know you will have some questions regarding this very serious matter and I hope you will call me at once to set up a meeting so we may discuss the seriousness of this situation. I can be reached at (813) 745-3714.

Thank you for your time in reading this letter, I look forward to hearing from you.

Sincerely,


JOE MCCLASH
Vice Chairman

st

Enclosure

c: The Honorable John McKay, State Senator
The Honorable Mark Ogles, State Legislator
The Honorable Julie McClure, State Legislator
Virginia Wetherell, Acting Director, D.E.R.

BCC30857

THE REAL FACTS

ABOUT MANATEE COUNTY'S GARBAGE PLAN

Do you know the facts about this plan?

WHY IS THE COUNTY PURSUING GARBAGE SORTING?

The consultants, who have been paid more than \$200,000 and County Staff recommended this facility as the easiest and cheapest way to meet the State's 30% recycling mandate by the end of 1994. Manatee County is currently recycling 28% of its waste.

HOW MUCH WILL THE PROPOSED AMERECYCLE FACILITY COST THE MANATEE COUNTY TAXPAYER?

No one knows. It is known that this plan requires taxpayers, (homes and businesses) in the county to pay at least \$80 MILLION OVER A MINIMUM 10 YEAR CONTRACT PERIOD. This price tag is also going up as concerns are raised concerning odors at the 50 acre plus facility.

WHAT IS AMERECYCLE'S EXPERIENCE IN COMPOSTING?

Amerecycle's only facility which processes 50 tons per day began operation June 1, 1990 in Sumter County, Florida. Manatee County's proposed facility at 525 tons per day is more than 10 times the size of the Sumter County facility. The Florida Department of Environmental Regulation has found violations of environmental rules and imposed fines on the Sumter County facility in April, 1993.

HOW WILL YOUR RECYCLABLES AND GARBAGE BE COLLECTED?

Residential garbage collection will continue twice weekly. Under the proposal, your recyclables, such as newspaper, glass, plastics, aluminum will be mixed together with your garbage including disposable diapers, moldy food, button batteries, plastic packaging and dumped in the regular garbage truck. Hazardous waste in the form of motor oil, household cleaner, paint products and fluorescent lights containing high mercury levels are also in the waste stream and thrown away with your garbage.

HOW DOES THIS FACILITY TURN HOUSEHOLD GARBAGE CONTAMINATED WITH HAZARDOUS WASTE INTO SAFE "ORGANIC COMPOST"?

There is no way to provide a consistently safe compost product with this composting procedure. Garbage is dumped on a conveyor belt at the facility and employees manually sort through garbage containing disposable diapers, kitchen waste, household hazardous material, broken glass and other unknown trash. These employees attempt to remove some hazardous material and recyclables from this contaminated mixture. The remaining garbage is shredded and spread over 50+ acres to compost.

IS THIS A PROVEN TECHNOLOGY OR A GIANT EXPERIMENT?

Clearly it is an experiment. There is no facility in the United States of similar size which has operated without major problems. The two largest facilities, Portland, Oregon and Pembroke Pines, Florida were closed in 1992 due to a number of operational difficulties including odors. Pembroke Pines is paying \$4.7 million and the Oregon facility \$3.5 million to get rid of the stench. Pembroke Pines has failed to obtain a Class A compost rating.

HOW WILL THE COUNTY'S CURRENT RECYCLING PROGRAMS BE AFFECTED?

The County's curbside recycling program and drop-off centers will be eliminated, even though County staff has reported these programs have been successful due to high rates of public participation. No newspaper will be recycled. Glass recycling will be minimal. Other recyclables will be difficult to remove and reduced in value because of contamination.

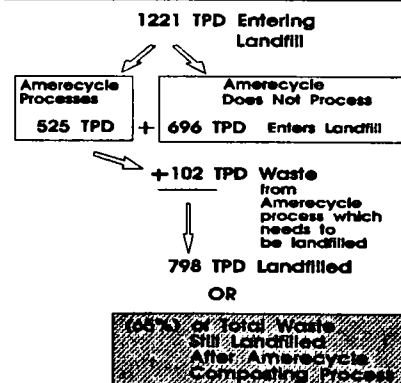
WHAT INCENTIVES WOULD THERE BE FOR HOUSEHOLDS AND BUSINESSES TO REDUCE THEIR WASTE AND RECYCLE?

NONE. Amerecycle as a private facility is paid based on quantities of garbage delivered to them. The more garbage delivered, the more revenue. No incentive plans have been offered by the County staff or consultant.

WILL CITIES USE THIS FACILITY?

NO. The facility is being built to handle the County's waste stream and exclude's the City of Bradenton, the County's largest city. Other cities can opt in or out, however, the plant can only handle 1/2 the waste stream entering the landfill.

HOW MUCH WASTE IS PROPOSED TO BE HANDLED AT THIS PLANT?



This illustration is best to describe how much waste the plant is proposed to handle in relationship to the total waste stream.

TPD (Tons per day garbage.)

WHAT DO THE EXPERTS SAY?

Mixed MSW composting is yet another technology that under closer scrutiny comes up short. In our report, we concluded that these faults were so compelling that the process should be prohibited.

Stephen A. Hammer

"Garbage In/Garbage Out: A Hard Look at Mixed Municipal Solid Waste (MSW) Composting",
quoted in Resource Recycling, February 1992
Copies available from the New York Environmental Institute at (518) 462-5526

In fact, in recent years focusing on the working environment and quality of recycled materials has brought the recycling process on the right track. Away from the fixation of the technological solutions of the engineers to the conscious and disciplined process by the waste-producers themselves...

Remarks by Ole Busck, 1989

"Facts to Act On"

Institute for Local Self Reliance, Page 4

July 17, 1992

MSW-based composts also contained levels of toxic heavy metals that matched or exceeded those from sewage sludge. In fact, MSW derived composts tended to lead the pack in levels of lead and sodium.

Donald J. Lisk, Cornell University

April, 1992 Archives of Environmental

Contamination and Toxicology. Quoted by Janet Raloff, "Cleaning Up Compost, Municipal waste managers see hot prospects in rot."

Science News, Vol. 143, Page 56

Based on review of operating and closed U.S. facilities, some times in the operation of the facility there will be odor problems that cannot be contained under the current proposal.

Memo from Patrick Kennedy

R. W. Beck and Associates,
Manatee County Consultants
December 26, 1991

Once a community commits to an expensive management option, other competing alternatives are not considered seriously. Once a community sinks millions of dollars into one system, they want to feed all their garbage to this system and don't want to spend more money on other alternatives. Much like building an expensive incinerator, by

choosing mixed waste composting, you limit the growth potential of recycling programs.

Stephen Lester, CCHW Science Director

"Mixed Waste Composting: Good Idea or Quick Fix Solution?" Citizen's Clearinghouse for Hazardous Waste, April, 1992, Page 7

There are many companies trying to solve the garbage crisis. The latest tactic by some of the companies is to use safe words like "recycling" and "composting" to describe their process in hopes that communities will accept them at face value. Their real intent is to confuse and fool the public. They want you to think that their process is something other than what it really is.

Stephen Lester, CCHW Science Director

"Mixed Waste Composting: Good Idea or Quick Fix Solution?" Citizen's Clearinghouse for Hazardous Waste, April, 1992, Page 8

The current lurch toward MSW composting is a mistake which communities will soon regret. Just as early converts to incinerators learned that the plants often did not work, presented unnecessary health risks, were prohibitively expensive and did not provide an environmentally sound solution to solid wastes management, so too with MSW compost facilities.

Before incurring significant public debt and committing a community to this disposal method, we urge each state and local official to carefully consider the implications....

Lee Wasserman, Executive Director

New York Environmental Institute

"Garbage In/Garbage Out?,"

A Hard Look at MSW Composting,

Introduction, October 22, 1991

The researchers found that recycling and composting workers had significantly higher prevalences of various disorders. They concluded that recycling workers are prone to skin, respiratory tract, upper airway, mucosal eye and gastrointestinal problems.

Jerry Powell

"Safety of Workers in Recycling and Mixed Waste Processing Plants."

Resource Recycling, September, 1992

resource

RECYCLING

NORTH AMERICA'S RECYCLING JOURNAL

Garbage in/garbage out: a hard look at mixed municipal solid waste composting

by Stephen A. Hammer

Stephen A. Hammer is the principal in Stephen A. Hammer Environmental Consulting, a Cambridge, Massachusetts-based firm specializing in recycling program development and policy research on a variety of solid waste issues.

An examination of compost quality, cost, marketing and recycling compatibility concludes that MSW composting is not the panacea for the nation's solid waste ills.

With organic material (food waste, yard waste, wood waste and paper/paper products) composing more than two-thirds of the waste stream in the U.S. (1), it is no surprise that composting has caught the interest of municipalities searching for landfill alternatives. In particular, there has been a tremendous surge of interest in mixed municipal solid waste (MSW) composting facilities as a waste management option. Eighteen of these facilities are currently operating around the U.S. (2), with another 140-plus in the planning stage (3).

Mixed MSW composting facilities accept a commingled stream of solid waste, and purport to reclaim (i.e., recycle or compost) 65-90 percent of the material that otherwise would end up in a landfill or incinerator. The performance claim certainly sounds impressive, but is this all a municipality needs to know about these facilities? In a study recently completed for the New York Environmental Institute, we evaluated the process based on four key concerns:

- Compost quality: How safe is the end product?
- Operating costs: Are less expensive composting processes available?
- What is the demand for this material?
- Is this technology compatible with

efforts to promote recycling and waste reduction?

To provide some context, we compared mixed MSW composting with "green waste" composting, another composting approach that uses only source-separated food, yard and wood waste. Large-scale green waste composting is growing in popularity in Europe, but has yet to establish a foothold in the U.S.

Because New York State has issued regulations requiring municipalities to source-separate recyclables as of September of this year, the analysis effectively became a comparison of two different approaches to capturing recyclable and organic materials: a facility-based approach (mixed MSW composting) and a curbside-based approach (green waste composting and curbside recycling collection).

Issue #1: the quality debate

A primary quality issue is the safety of the end-product compost. Although compost is desirable because it contains nutrients which enhance plant growth and soil quality, in excessive concentrations these same nutrients can be toxic to humans. For this reason, most states or countries that regulate compost quality include some limits on the amount of heavy metals it contains. Table 1 lists a

Table 1 — Comparison of heavy metals standards and testing data (1)

Parameter	Heavy metals standards in the U.S.					Heavy metals standards in Europe				
	New York State Class 1 compost	Minnesota	Florida	Iowa	Proposed NOAEL standards (2)	Current European Community	Proposed European Community	1991 Netherlands	1994 Netherlands	State of Hesse, Germany
Mercury	10	5	—	—	15	3	0.5	—	—	3.4
Cadmium	10	10	15	4.4	18	3	1	2	1	2.8
Nickel	200	100	50	125	500	50	10	50	10	24
Lead	250	500	500	500	300	150	160	200	100	160
Chromium-total	1,000	1,000	—	—	2,000	150	30	200	50	160
Copper	1,000	500	450	125	1,200	150	40	300	60	160
Zinc	2,500	1,000	900	250	2,700	500	240	900	200	400
PCBs-total	1	1	—	—	—	—	—	—	—	—

Parameter	Test scores — Mixed MSW feedstock					Test scores — Source-separated stream of organics			
	Recomp facility, St. Cloud, Minnesota	Agripost facility, Dade Cty, Florida (3)	Fillmore County, Minnesota	Research facility, Big Sandy, Texas	Baierfurt, Germany, (separates out non-organics)	Yard waste facility, Croton Pt., NY	Witzenhausen, Germany green waste	Heidelberg, Germany green waste	Lemgo green waste
Mercury	—	2.4	—	0.09	0.2	—	0.17	2.9	2.2
Cadmium	3	4.1	2.3	12.5	2.8	Not detected	0.5	0.9	2.6
Nickel	36	34	34	21.9	84	10	17	20.1	20.6
Lead	230	124	197	334	322	32	86	153.6	188.3
Chromium-total	44	20.5	5.8	5.6	107	10	28	12.8	24.2
Copper	25	248	122	224	190	19	40	103	112.6
Zinc	470	607	487	650	779	82	255	439.7	390

- (1) Content in end-product compost; concentrations in parts per million dry weight. Test results came from various published data. Accuracy of test results has not necessarily been verified by any government agency.
- (2) No Observed Adverse Effect Level — sludge compost standard developed by a consortium of university and government researchers.
- (3) The Agripost facility was closed in early 1991.

Source: Stephen A. Hammer Environmental Consulting, 1991.

variety of metals content standards both in the U.S. and abroad.

As seen in Table 1, striking differences exist between the foreign standards and those established or proposed in the U.S. Generally, they reflect differing philosophies over what constitutes "appropriate" compost quality.

U.S. standards are based on research into the maximum amount of heavy metals that may be land-applied and still prove safe to humans ingesting the soil (4) or plants grown in that soil. The European/Canadian standards are far more restrictive, aiming instead to limit the compost to a level naturally found in the soil.

All of the mixed MSW composting facilities currently operating in the U.S. for which testing data are available meet the U.S. standards. However, only facilities using source-separated organic material are able to achieve the tougher European/Canadian standards. This is because commingling (allowed under MSW composting) increases the likelihood that previously clean organic material becomes contaminated by inappropriate substances such as household hazardous waste.

Which approach is right? There is no clear scientific answer. The U.S. sci-

entists who developed the "No Observed Adverse Effect Level" (NOAEL) standards are adamant that mixed MSW compost meeting their standards is perfectly safe for long-run use (5). Moreover, they argue that there is no scientific basis for the tighter European/Canadian standards. Our research uncovered no hard evidence justifying Europe and Canada's pursuit of such stringent quality standards.

There are at least two practical reasons why the lower limits make sense, however.

- There are no long-run guarantees that the U.S. standards currently deemed safe will remain so. If they were to change (and given the history of solid waste management, this seems likely), it would be impossible to undo the damage — the compost would already be in the soil. Large areas of land could be affected, but with no systematic records of where compost was applied, it would be difficult to accurately restrict future land use. Public health could be at risk.
- Testing protocols established by most regulations are inadequate. None of the regulations establish maximum batch sizes for testing purposes. This means the facility, and hence con-

sumers, are relying on a single quart-sized bottle of compost to represent the quality of between 10-300 tons of material. Moreover, because testing is generally required only periodically, the vast majority of compost produced will make its way to market without ever having been tested. Testing is less of an issue with compost derived from source-separated organic material, because contamination by inappropriate substances such as household hazardous waste is unlikely.

Issue #2: cost

The evidence on quality suggests that source separation results in a superior end product. However, we expected to find that a source separation program would prove more costly than MSW composting, leading to a tradeoff between quality and cost.

We were wrong. Despite the fact that they have higher collection costs, green waste programs have a number of budgetary advantages over mixed MSW composting programs:

- Green waste facilities are designed to accommodate only the organic portion of the waste stream, meaning they can be built smaller without sac-

nificing any production capacity. Mixed MSW facilities must be sized to accept 100 percent of the waste stream, much of which is noncompostable. Size difference alone can amount to millions of dollars in savings.

- Because they require less complicated sifting machinery, a green waste facility is cheaper to run on a daily basis.
- Recyclable materials recovered under a source separation program tend to be cleaner, and thus more valuable to the recycling markets.
- The higher quality compost produced from a green waste facility tends to command higher prices.

Collectively, these budgetary savings offset the higher collection costs the vast majority of the time. In a benefit-cost analysis performed as part of the study, we found that source separation is a more expensive option only if the collection costs for a green waste program exceed the cost of mixed waste collection by more than 70 percent (see sidebar).

Issue #3: compost marketing

Without concerted effort at all levels of government to help develop compost markets, industry experts agree that both green waste and mixed MSW compost will have a difficult time finding a market base (6). Potential users must first be identified and then convinced to switch from another product (manures, peat moss, etc.) — no easy task.

Nonetheless, comparing the two technologies, green waste composting has an edge: Consumer acceptance is likely to be higher given real or perceived differences in compost quality. (Ask yourself a question: Knowing what you throw in your own garbage, would you want a compost derived from mixed MSW used on your garden?)

Government regulations exacerbate the perception of inferior quality by imposing limits that imply real quality differences between the two materials. For instance, in New York State, compost produced from mixed MSW may not be used on crop land where food intended for direct human consumption is grown.

Issue #4: compatibility with recycling efforts

Most MSW composting facilities tout the fact that their process promotes recycling because they pull materials out of the waste stream that otherwise would not have been recycled. If only the truth

Calculating the costs

Two hypothetical communities formed the basis for the benefit-cost analysis: a green waste community, using a three-bin system (recyclables/compostables/other); and a mixed waste community, using a single bin. Each community generates 100 tons per day of solid waste.

Although the waste streams are identical in the two communities, the recovery rates of recyclables, organics and residual garbage were assumed to differ reflecting different collection and processing techniques. The monies received from the sales of the compost and any recyclables were also assumed to differ.

Tip fees at the two composting facilities (1) were set at \$39 per ton (green waste) and \$59 per ton (mixed MSW), based on cost estimates provided by Buhler, Inc. The difference represents the lower capital cost of

the green waste facility, along with lower operating costs.

A collection cost of \$85 per ton was assumed for the mixed waste community (2). Collection costs for the source separation program were treated as an unknown variable, allowing us to determine how high they could increase before they offset the savings identified above.

Ultimately, we found that overall mixed MSW program costs were cheaper only when collection costs for the green waste program were roughly \$110 per ton, an increase of 70 percent over the costs of mixed waste collection.

- (1) Does not include any tip fee for the landfilling of any residual materials left over from the composting process.
- (2) Richard A. Denison and John Ruston, eds., *Recycling and Incineration: Evaluating the Choices*, 1990, p. 140.

were that simple. Such an argument suggests that sound resource management requires nothing more than merely pulling recyclables out of the garbage.

Recognizing the complexities of the issue, in recent years the U.S. Environmental Protection Agency and many state governments have begun to establish priorities among different waste management strategies. Topping all of these lists is waste reduction, or the need to generate less garbage by paying attention to our consumption and production patterns. Second on these lists is recycling. The mixed MSW composting process compromises both of these priorities:

- Because mixed MSW composting facilities are so expensive to construct, most operators demand that municipalities commit to supplying a certain amount of garbage or pay a penalty for the portion not delivered. These agreements, known as "put or pay" contracts, create a tremendous financial disincentive against promoting or enforcing waste reduction efforts. On the other hand, most waste reduction or recycling efforts are not aimed at organic waste, so no such disincentives exist for green waste programs.

- Recyclable materials are of use to the materials markets only if they arrive uncontaminated. Both the commingled nature of the process and the

mechanical sorting equipment used in the mixed MSW composting facilities introduce contamination problems, making much of the material unusable. The recovery rate for recyclables is therefore far lower than what would be achieved if a source separation program were in place (8).

This is particularly true for paper, much of which ends up composted under a MSW composting program rather than recycled. Although it is probably preferable to compost paper than landfill it, composting does nothing to advance recycling's primary goal of reducing the use of virgin materials.

Conclusion

Given these facts, why do green waste composting programs receive such scant consideration by municipalities? Part of this is due to the strong, and occasionally misleading, promotional efforts of industry groups and consumer product companies that equate their own interests to those of the public.

Equally important, however, is the unwillingness of many public officials to recognize that silver bullet solutions don't exist when it comes to garbage. Mixed MSW composting is yet another technology that under closer scrutiny comes up short. In our report, we concluded that these faults were so compelling that the process should be pro-

Quote

hibited. Instead, we believe that municipal officials and solid waste planners would be wise to establish and promote green waste collection and composting programs.

Source separation programs may well take more effort to get up and running, because the demands in terms of public education are greater. But there is little question that in terms of cost, compost quality, marketability and environmental integrity, the payback more than justifies the effort. **RR**

This article is adapted from a report written by the author for the New York Environmental Institute entitled *Garbage In/Garbage Out: A Hard Look at Mixed Municipal Solid Waste (MSW) Composting*. Copies of the report are available from the institute at (518) 462-5526.

End notes

- (1) U.S. Environmental Protection Agency, *Characterization of Municipal Solid Waste in the United States: 1990 Update*, June 1990, p. 10.
- (2) Robert Spencer and Jim Glenn, "Solid Waste Composting Operations on the Rise," *BioCycle*, November 1991, p. 34.
- (3) Steve Apotheker, "Engineering the Nation's Largest MSW Composting Plant," *Resource Recycling*, July 1991, p. 44.
- (4) This concern primarily applies to small children.
- (5) Presentation by Rufus Chaney, U.S. Department of Agriculture, at the Northeast Regional Solid Waste Composting Conference, Albany, New York, June 24, 1991.
- (6) Richard M. Kashmanian, H. Clark Gregory and Steven A. Dressing, "Where Will All the Compost Go?," *BioCycle*, October 1990, p. 38.
- (7) New York State Regulation: 6 NYCRR Part 360-5.3(p)(i)(iv).

- (8) Communities with mandatory source separation requirements recover on average 25.7 percent of their total waste stream (see Institute for Local Self Reliance, *Beyond 40 Percent: Record-Setting Recycling and Composting Programs*, 1990). This compares with recyclables recovery rates of between 10 and 20 percent at mixed MSW composting facilities (see Nora Goldstein and Bob Spencer, "Survey Data: Solid Waste Composting Facilities," *BioCycle*, January 1990, p. 37).

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