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APPENDIX

to

PUBLIC HEARING

before

ASSEBMLY COUNTY GOVERNMENT AND REGIONAL AUTHORITIES COMMITTEE

ASSEMBLY BILL NO. 4105

(Requires the Department of Environmental Protection to conduct a study of the cumulative impact of resource recovery facilities on the enviornment, and also appropriates $75,000 to the Department on Environmental Protection to conduct the study)

September 26, 2989
Freeholders Meeting Room
Court Plaza South
Hackensack, New Jersey

APPENDIX VOLUME III

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New Jersey State Library

A P P E N D I X

to

P U B L I C H E A R I N G

before

ASSEMBLY COUNTY GOVERNMENT AND REGIONAL AUTHORITIES COMMITTEE

ASSEMBLY BILL NO. 4103

(Requires the Department of Environmental Protection to conduct a study of the cumulative impact of resource recovery facilities on the environment, and also appropriates $15,000 to the Department of Environmental Protection to conduct the study)

September 26, 1989
Freeholders Meeting Room
Court House South
Hackensack, New Jersey

A P P E N D I X V O L U M E I I I

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New Jersey State Library

TABLE OF CONTENTS

	Page
Materials submitted by Dr. Arthur H. Nusbaum	900x
Letter and brochures submitted by Paul M. Reuter	987x
Statement submitted by Frank A. Livelli, Jr., M.D.	1022x
Statement submitted by Joseph W. Cardoni	1025x
Statement submitted by Alfred P. Franklin	1027x
Statement submitted by Assemblyman Patrick J. Roma	1029x
Statement submitted by Rose Slovis Board of Directors United Passaic Organization, and Representing National Council of Jewish Women and Temple Emanuel of Passaic	1034x
Statement submitted by Cecilia G. Laureys Volunteer Recycling Coodinator and Member Environmental Commission Netcong Boro Council	1037x
Statement and articles submitted by Philip Beachem, Secretary New Jersey for A Clean Tomorrow	1039x
Statement submitted by Rhoda Schermer Spokesperson Beth Israel Hospital	1064x
Statemeent submitted by Ed Sekula, Chairman Netcong Environmental Commission	1067x
Statement submitted by Emery Toth, Esq. Concerned Citizen	1068x

TABLE OF CONTENTS (continued)

	Page
Letter submitted by Dr. Peter Bower Environmental Scientist Deputy Mayor Teaneck, New Jersey	1069x
Statement submitted by Joan Broderick	1070x
"Resource Recovery Facility Implementation"	1072x
"Environmental Issues Paper on Comprehensive Solid Waste Management"	1083x
"Chlorinated Dioxins and Related Compounds 1986"	1087x
"High-Stake Bet on Incinerators"	1094x
"Agripost Project Update" and Agripost pamphlet "The Complete Solution to Solid Waste Problems"	1096x
"Proposal for a Recycling and Waste Processing Facility" Prepared by America's Waste and Recycling Effort (A.W.A.R.E)	1116x
Articles from "Waste Not" and "Hazardous Waste News" and related articles	1149x
Assorted newspaper and magazine articles	1303x

**Morris County Resource Recovery Facility Site Suitability Study
Map on file with Assembly County Government Committee Aide.

* * * * * *

that plant operated at half capacity it cost another $100,000.00 per day. These are not small numbers. Incidentally, if I might go back to the original rupture of the boiler tubes in that plant that repair cost a million dollars. I would say most of the people here if they sit down and figure out when they started working whether at age seventeen or twenty-one will never make a million dollars. I also had listed here the accident in Detroit 75 of the workers walked off the job, union workers. Guess they didn't think that was too pleasant when they started breaking out in rashes. As a follow-up on that the results from the testing of the ash from the Detroit boiler yielded cadmium levels of 5.9 times the allowable concentration, lead eight times the allowable concentrations. I think we understand why the people were breaking out in rashes. I also had listed here the Warren County unit. I think everything has been covered on that. Based on this information, information that has been presented by other people here I would like to know what the

contingency plans are when this very sophisticated technology fails. What will our air quality be when the scrubbers and whatever cleans these gases is not functioning? Will the cost to keep the incinerator running eventually become an albatross, not around the residents of Mount Olive, around the residents of Roxbury or Succasunna but for the residents of the entire Morris County. When I stand here and reflected what has been said by the American Lung Association a mother whose concerned about the quality of life for her growing children, a businessman who wonders whether he's going to be in business or whether he can even hire workers, the incredible list of incinerator failures around this entire country and the cost to repair them the insane talk of reopening Combe North, that is absolute insanity.

(AUDIENCE APPLAUDS)

MR. TRUPPO: Then there was the gentlemen who lived near an incinerator many years ago and fourteen years ago contracted cancer and then I think I find the most frightening, my worse nightmare and that is the talk of increased mortality rates. Are we talking of extra deaths? Yes, that's what we're talking about. My children possibly. Actually, I don't think it will be my children because I have three children ages twenty to thirty. My thirty year old says I'm not going to live in this state and she lives in Florida. My twenty-five year old, I don't think she's going to stay in the state. She's already voiced that and my twenty-one year old, pardon me, not twenty, graduating Seton Hall says, "Dad, I don't want to live in this state, not with the pollution problems here." I'm just about done. I may have grand children some day. I'm sure you people, some of you have grand children, families. How can you sit and look at numbers like this and say you want to put an incinerator into this county or into any

county? From this I think and I empnasize, I don't think, I know that you must send this incinerator to an early grave. Thank you.

(AUDIENCE APPLAUDS)

DIRECTOR HYLAND: Frank Lovasco.

MR. LOVASCO: My name is Frank Lovasco. I live in Roxbury township. I just want to say a few words. It seems to me with all the high quality engineers and scientists we have in Morris County we can't come up with something a little more progressive than burning our trash. As the physician just mentioned few minutes ago, thirty years ago smoking cigarettes was considered okay, no problem. Nowadays we know it causes cancer. We even believe now that the secondhand smoke causes cancer. A few years ago, seventy's we outlawed aerosol cans because they were creating holes in the ozone. Now we have to worry about air conditioning fluids, things that we used to think were safe, freons creating holes in the ozone. Acid rain was laughed at a few years ago as being a

nonexistent problem. Why is it we always have to prove something as a problem as opposed to somebody proving to us its safe?

(AUDIENCE APPLAUDS)

MR. LOVASCO: Given this incineration plan is basically a large furnace, large chimney, why is this considered a state of the art facility? Basically, there are other alternatives. There are compost facilities, large composting facilities that are run around the country where people, you dump in trash and it generates compost at the other end. What do you do with the compost? You could sell it, give it away to the township people or you could use it in the vast extensive parks of Morris County but that's only part of the problem.

No one here tonight has mentioned the other half of the problem and that is, what are we doing about limiting our generation of waste?

Do we recycle bottles? No. Do we have something in Morris County? Do we have some sort of a tax on disposables? Do we limit the fact that people use paper plates, paper cups, plastic, then dump them?

Do we have any kind of motivation for people to limit our resources? What if people start to generate less waste in the future, what do you do with the incinerator plant that has nothing to incinerate?

I would like to close with a few words, a few thoughts. One is that we don't inherit the land from our parents. We borrow it from our children and basically wouldn't we all sleep a little better if our grand parents had made the hard decisions and saved it for us, saved the trouble, saved us from the trouble?

Let's not leave the problem for our grand children and the second thing is the fact that in this world we think globally and act locally.

We can clean up the world if we clean

up our own house. Thank you.

(AUDIENCE APPLAUDS)

(PROCEEDING CONTINUES ON FOLLOWING PAGE)

DIRECTOR HYLAND: Erik Lampinen is next.

MR. LAMPINEN: My name is Erik Lampinen. I live in Flanders. I've lived in Morris County virtually all my life. I was born and raised in Chatham Borough. My parents still reside there, and I've lived here for eleven years, as I said.

In my opinion, Morris County is perhaps one of the finest places to live, work and raise a family. As Freeholders, your primary duty is to maintain Morris County's status as one of the premiere places to live. And to accomplish that task, many difficult decisions will have to be made. Decisions which must further the well-being of the county, and most importantly, the people who live here.

I know that each and every one of you, individually and collectively, believe that incineration will solve all of the County's solid waste disposal problems. You've read all the material that the engineers, consultants and salespeople have been able to give you, and you've come to the conclusion that incineration is the way to go.

Well, I believe that you and a lot of others have been sold a bogus bill of goods.

Incineration is not what it's cranked up to be. It's not economical, it's not safe, it's not clean, and it's not for Morris County. Case in point. Prior to its operation, the Warren County incinerator located in Oxford was touted as being the showcase for New Jersey incineration with the state of the art technology which would operate efficiently and keep pollutants and other hazardous by-product to say a minimum.

Well, we all know that the Oxford facility has been a dismal failure which has cost the taxpayers much more than they had predicted while falling way short of its expected results.

Has any member of this Board conducted wind flow surveys from the proposed site? One doesn't have to be a rocket scientist to understand that most of the prevailing winds come out of the west and blows to the east. That, combines with the high altitude of the proposed site allows for greater distribution of the dioxins and other pollutants which will certainly be produced.

As I mentioned before, I lived here eleven years, and even if it's built here, I have no

plans on moving. I think the resulting health threat to my family and neighbors will not be as severe as it will be to those living in areas to the east, Chester, Mendham, Harding, Randolph, Rockaway, Denville, Mountain Lakes, Morris Plains, Morristown, Morris Township or even Madison. You know, no one here tonight wants to see the garbage piling up in the streets, but I don't want to see it piling up inside my lungs or the lungs of my parents or other relatives who live throughout the county.

Incineration does not provide for any quick solutions to our solid waste problems. You have to stop looking at this through rose colored glasses. Mandatory recycling regulations must be enacted and enforced, and if necessary, curbside inspection must take place and violators must be fined on the spot.

Incineration is not a short-cut to alleviation of the solid waste problems, it should be viewed only as the method of last resort, and then only when all other methods have been explored, used and evaluated.

You know, the future of the health of all the people in Morris County rests in your

decisions. Take the time to evaluate all the alternatives, and don't give in to the megabuck pressure of the special interest groups. .

Thank you very much.

DIRECTOR HYLAND: Earl Spino here?

MR. SPINO: Hi. Is everybody awake?

DIRECTOR HYLAND: Yes, sir.

MR. SPINO: I know we've been here a long time and it seems we've stood and talked like this before, as the song goes.

We were privileged earlier by having a bureaucrat here from the DEP who is, whose very existence depends on whether we do or go to incineration or not. I'm not a bureaucrat, I'm not an engineer, believing that engineers can do everything, as I'm sure Mr. O'Keeffe might believe. Engineers can probably do everything, but at a cost that we're not willing to pay; on that financial cost and at a health of the cost that we shouldn't have to pay.

The DEP talked about incineration as being the thing to do. Well, we've had some experience in Mt. Olive with the DEP. When something goes wrong with the facility, guess who comes to check it? The DEP.

Their existence is not going to allow them to tell you that there's something wrong. They're going to try to hide it, as they did with Combe Fill. We had people come up from the DEP and it took a court, a court to get them to change their idea; not the people, the Court.

I would like to thank you all for making the citizens of Roxbury and Mt. Olive second class citizens as far as Morris County is concerned.

(Applause.)

MR. SPINO: You know, I recently read with interest and will probably read more in the newspaper now than I've ever done before because of what's going on. But one of the things that intrigued me was that you're considering advertising for a jail site, advertising for a jail site because you don't want to hurt people's feelings in the eastern part of the county, but you don't care about this part of the county.

advertise for a stack and see if Montville wants it, or Denville wants it, or wherever else you people live. You don't care. You know, you accuse -- some of you accused the previous

Freeholder Board of not listening. You're not listening now. You're doing the same thing that they did. You're turning the rest of the county against Mt. Olive and Roxbury by diluting them and telling them that you have a solution.

Well this isn't a solution. It's not smart, it's not effective, and it's certainly not going to be cheap. So you're selling the people a bill of goods that's not going to come true. All right? It will cost more, and incineration is only a 70 percent solution. Okay? And it's not a very smart idea. Anybody can burn.

I also believe that inherent in this decision is some nepotism and some conflict of interest. We know that people on the Board have worked for companies who have built incinerators, and we know that people get up at meetings who represent other towns and say, we can't recycle, it's too hard, we don't like it, we want to burn all our garbage. Their son works for the MUA who supports incineration. Well how can we do this?

(Applause.)

MR. SPINO: How can you do it?

Because you're not listening. And because I believe in my heart you really don't care, because I believe in my heart that this is going to go through no matter what. We could get statistics, pile it to the sky. You're not going to read it, you're not going to be interested in it, because you want to go down as the people who solved the problem.

You're not going to solve the problem, you're going to create a much worse problem.

Other counties -- because I believe in my heart that this is not going to be a county site, this is going to be a regional project -- other counties are already asking, you've already been talking to other counties about taking solid waste or about building an ash dump somewhere else. They want something in return, they want to bring their garbage here to burn it.

As I said, recycling -- I mean, burning is only a 70 percent solution, it does not go hand in hand with recycling. They oppose each other. The more recycling you do, the more garbage you're going to have to bring in to burn from someplace else.

Take the leadership, be innovative, and call for the moratorium on burning. Extend the life of the landfill, because it will be number one, cheaper, okay?

I just have one more statement.

And this is from the article on the Warren County incinerator and it says "The incinerator should be examined, not with an ostrich mentality, but with a hawk's vision."

Think about that, and find out, get more information on how we can use alternate methods, because that's the answer, not an incinerator.

DIRECTOR HYLAND: Gary Colucci?

Carmen Fascia? Betsy Scapicchio?

MS. SCAPICCHIO: I already spoke.

DIRECTOR HYLAND: Maro Reinhardt?

MS. REINHARDT: Here.

DIRECTOR HYLAND: W. Davidson, Mountain Lakes; Jim Benson from Rockaway Township.

Who are you ma'am?

MS. REINHARDT: My name is Margo Reinhardt.

DIRECTOR HYLAND: Margo? Okay.

MS. REINHARDT: And I live in Long Valley.

We've heard a lot tonight about New

Jersey's air pollution and that the EPA has ranked it number two in having the nation's poorest air quality. We've also heard about the green house effect and the depletion of our ozone layer, which are two major crises facing us today.

In addition, New Jersey's water quality is questionable, with more than five thousand private wells being closed due to groundwater contamination, and you want to locate the incinerator above the Musconetcong River basin aquifer, and near well fields that supply Netcongs water.

I'm sure you've already been told about air pollution control devices and air quality tests. Well, many of the existing tests are invalid because they have been conducted on new facilities operating at peak performance. Tests are rarely measured under routine operating conditions which encounter temperature fluctuations, start-ups, shut-downs, and variability of MSW feedstock. Therefore, these tests cannot predict routine emissions in the lifetime of a facility.

The EPA Science Advisory Board's review of

data on emissions during poor or upset combustion conditions found that hydrocarbon levels rise and fall, that carbon monoxide levels can not properly measure dioxins being released, not to mention surges of consentrated levels of lead, copper, cadmium and zinc. On tests done by the Environmental Defense Fund on just twenty-three facilities, twenty of them were over the limit on lead, and twenty-one over on cadmium.

There's enough information available at public libraries, through federal documents, environmental organizations, and scientific journals -- and as you see and hear tonight -- that indicate that incinerators do pollute, and that the risk to our health, environment and to the future of our children far outweigh our garbage problem, especially when there are alternatives. We also need to stop garbage at its source. Industry and manufacturers must change their way so that we do not have to be burdened with their waste.

Any intelligent, aware, conscientious person can read the signs that earth is giving us and realize that we must now try to make the

changes that are necessary to clean up our environment, not to add more poison to it.

(Applause.)

MS. REINHARDT: There is only one earth; my question to you is that why have you chosen incineration wnen it will only worsen the problem by the amounts of pollutants that are emitted?

I would also like to know, when I can expect an answer to the question that I'm asking you tonight?

A VOICE: They all look at each other.

MS. REINHARDT: A week, ten o'clock Wednesday morning I'll be in your office? Give me your answer.

DIRECTOR HYLAND: As quick as we can get back to you, that's all I can tell you.

W. Davidson. Benson?

Aleta Katonak? Robert Bednarcik.

MS. KATONAK: I'm Aleta Katonak from Budd Lake.

People here, and a lot of them have laughed, know me very well and know I've spoken my mind about drinking water and clean air, but tonight I will speak from my heart and soul. I

know, you know, and already have researched all the fact that you have heard tonight, I know you're not stupid. Please, please, reconsider for the sake of our children futures all alternatives.

I'm scared for all, and I'm scared to death of all the ugly cancer causing pollution. I know, and I lived through seeing the death of a life from cancer. Listen to our hearts, and not the hearts of the few who have money and political interest in the incinerators.

(Applause.)

MS. KATONAK: We as citizens can work with you on composting, recycling, and all the alternatives. Give these a chance. Give clean and safe air a chance, give our children a chance. We can show the world together these alternatives can work. Heed you're speed. We have time to show you we can do the other alternatives.

Thank you.

(Applause.)

DIRECTOR HYLAND: Thank you.

Walter Burnstein? Mark Morrison?

Genevieve Zebora?

What are we doing?

Mark Morison?

MR. MORRISON: My name is Mark Morrison. I live in Succasunna. First I would like to apologize for my yelling at you before thinking -- I did not have an agenda -- thinking that you were changing the whole ballpark by opening it up the attorneys. That's about the last apology. And I would really like to now, if I could -- I don't really care to talk to you people, because apparently that wasn't your purpose for coming here tonight to have any type of a give and take, it was basically for just everybody to have their say and you would stand up there and acknowledge the fact that we were standing there.

I think the people out here are the people I would prefer to talk to. Because the problem is, we have deja vu here in Roxbury Township, and maybe some of you people from other parts of the county don't know what happened here a couple of years ago. And I don't want to have anybody's nose get out of joint about old guard/new guard because that was nonsense that was printed in the newspaper. I didn't know who

old guard/new guard was. All I know is one night several years ago I spent until two o'clock in the morning just like this meeting and pleaded with the town officials, that I had voted for, to not put a dog pound wnere we had facilities for our children to play. And they didn't listen, because the next night they took out drawings, that they had already prepared architects' renderings and gotten themselves on the bandwagon again to get done with what they wanted done.

Well, ladies and gentlemen, you all who live in this area know what happened. We voted those people out, because they did not listen to the majority of the people who wanted something else done, had put them in office, we put them out of office, that's the only thing these people understand. They have people who only want certain things done, in certain areas of this county. There are people who own magazines that live in the southern part of this county who call themselves Malcolm, and those people had studies done six or seven years ago when the SWAC Commission was done and said that they had the perfect area for a landfill, but it never

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happened.

And it will never happen in that part of the county. And I'm not sitting up here applauding any of you people who said "not in my back yard," because that's not what I was indicating then. But we're talking power and we're talking politics, and we get people up here who cry how it's going to hurt their real estate. We get people up here who say, let's put it in Picatinny Arsenal and they forget how they polluted up there with their bomb shells and everything else, that's no alternative.

Don't cry about how it's going to affect your real estate values and how it's going to affect the plot of land that you've developed to put a business on, don't cry about how it's going to affect your neighbor. The thing is, it's health, it's you, it's your children.

If I handed you $10 million in one hand and I handed you a cancer tube in the other and I said there's your choices, life or death. Which one are you going to hand back to me?

Don't talk to me, don't give these people the opportunity to sit up there and say all they're worried about is they don't want it in

Roxbury, all they're worried about is their property values.

No, that's not what it's about. Because if you get the word out -- there was an envelope that says, put your money where your mouth is, people. You get up here with these people, it doesn't mean anything. You have to put the word out to all the areas that are going to be affected. Because Roxbury and Mt. Olive don't mean anything, we don't have the clout. But if you tell Denville, and Mountain Lakes and all the other -- tell Diamond Jim down in Washington, that his family is going to be affected by the 20 mile an hour winds that they're going to blow this stuff all over the county and all of a sudden we're going to have the kind of political clout that's necessary to motivate these people up here.

(Applause.)

DIRECTOR HYLAND: Genevieve Zebora?

MS. ZEBORAA: Genevieve Zebora, Mount Olive Township. I guess I'm a little too old to worry about this, I'm over 70. I had cancer. But why am I worried? But anyhow, can you gentlemen as County Freeholders have a clear a

conscious? Are you in favor of giving a slow death to 1,150 students at the Mt. Olive High School, 660 students at the Tinc Road School, 385 students of the Mountain View School, 329 students of Mountain View North, and 479 students of the Upper Elementary School? When the windows of the schools are not open, the fresh air is pulled in to the buildings via compressors. This air in daytime hours will be filled with dioxins, acid gasses and a host of other pollutants. These ingredients in the air will also eventually enter the wells from which the students drink water and the cafeteria uses for cooking food. Did you know that the high school is approximately one mile from the proposed site of this monster, the incinerator? The other schools are all nearby.

Did you know that there is a dairy farm approximately one and a half miles away with 50 head of cows and 50 head of beef cattle grazing serenely? Are you gentlemen at peace with yourself when you go to bed at night?

DIRECTOR HYLAND: Walter Burnstein, Dr. -- can't read the last name. Tom Smillie, Ed Czekat, William Healey, Frederick Moses.

Brent Wanstreet, William Sheley. I can't read this name at all. William Kish. I think he spoke.

Lyle Rawlings, Steve Frankel.

THE WITNESS: My name is Lyle Rawlings from Montville. I'm a professional engineer. I work in the field of waste management.

The principal justification for mass-burn incineration in Morris County has been the impending shortage of landfill space for municipal waste. Because currently landfill space in New Jersey is running short, and siting new landfills is very difficult, much New Jersey waste is now being trucked to Pennsylvania and other states. The cost of such disposal is higher and the continued availability of such landfill space is uncertain.

The contention that mass-burn incineration will reduce the problem of the cost and availability of landfill space can be examined using figures from the 1980-'89 Resource Recovery Yearbook published by Governmental Advisory Associates of New York City. This is it.

The Resource Recovery Yearbook is a

standard reference which is used by governmental agencies, waste energy project developers and Wall Street investment firms. It contains information from every waste energy facility in the United States, and the figures are supplied by the owners or operators of the facilities themselves.

Our neighboring state of New York has the largest number of operating waste-to-energy facilities as of this printing. The average percentage of in-coming waste leaving as ash in New York was 32 percent. This compares with 31 percent in New Jersey, according to the operator of New Jersey's only operating waste-to-energy facility, and 39 percent in Connecticut. These figures do not include bypass materials, which ordinarily comprise an additional 5 to 10 percent of the in-coming waste. Thus, in total, 36 percent to 49 percent of the waste sent to a mass-burn facility can be expected to be left for disposal as ash or bypass.

Thus, the degree to which a mass-burn facility will reduce the problem of the cost and availability of landfill space should be examined against the alternative; recycling.

The waste reduction that is possible from recycling can be taken as approximately 50 percent of all wastes, if a combination of source reduction, source separation, and a mechanical recycling facility is employed. Roughly speaking, source reduction can account for 5 percent or more; source separation for 30 percent; and the mechanical recycling facility for the additional 15 percent.

And aggressive program of education and incentives to recycle; legislation to control the types of packaging materials used by manufacturers, retailers, et cetera; investment in the necessary curbside collection, drop-off center and mechanical recycling facilities; and governmental action to encourage the creation of new markets and the preservation of existing markets for recycled materials is necessary in order to accomplish this.

Dr. Donald Dieso of the New Jersey DEP stated in a February 8th meeting at Mt. Olive High School that the eventual statewide recycling goals should be 50 percent, and that such a goal could be attained. Indeed, the city of Seattle, Washington recently chose to

establish a goal of 60 percent recycling as an alternative to a mass-burn facility. After the first year of the program, the City of Seattle has already exceeded 30 percent of waste recycled. The City of Washington, D.C. will soon require 45 percent recycling. A large number of communities in both Japan, and the Netherlands, as well as many other communities in Europe have already achieved recycling rates in the neighborhood of 50 percent.

If we take 40 percent as the percentage of waste left over under the incinerator alternative, and 50 to 55 percent as the amount left for the recycling alternative, it is possible to qualitatively compare the implications for the availability and cost of landfill space for the two alternatives. Incinerator ash from the Warren County, New Jersey mass-burn facility has been classed as hazardous waste by the EP toxicity test approximately 50 percent of the time. The EP toxicity test measures levels of potential leaching of eight toxic metals from the ash. It is not tested for other potential contaminants such as dioxins, polyaromatic hydrocarbons, et-

cetera.

I'm going to have to skip a lot of this.

Warrant County ash must be tipped in Model Cities facility near Buffalo, New York, at a tipping fee of $250.00 per ton. Essentially, the 32 percent or so of material left over as ash after incineration has been rendered more dangerous, more costly, and more difficult to find a home for than the waste which entered the facility.

By contrast, the 50 to 55 percent left over after recycling has actually been beneficiated to some extent, much of the toxic metal content has been removed with the removal of the metals. Always some homogenization and some drying will have taken place in the mechanical recycling facility.

DIRECTOR HYLAND: Are you finished?

THE WITNESS: I'll just finish this sentence.

So that the material that is left is not as readily leacheable.

I have much more, but I'm sorry that I don't have time to present it.

Thank you.

(PROCEEDING CONTINUES AS FOLLOWS AT 2:10 P.M.)

MR. D'AGOSTINO: You could enter it into the record if you would like.

UNIDENTIFIED SPEAKER: I'll do that sir. If I could interrupt for a second we have the Township Engineer from the Township of Roxbury who has a 7:00 meeting this morning. He's not sure where he is on the list right now but if these people --

DIRECTOR HYLAND: (Interposing) What's his name?

UNIDENTIFIED SPEAKER: Richard Moody, Township Engineer. My question is, if no one in the audience would mind, if you don't mind, could we put him on now, please?

(AUDIENCE APPLAUDS)

UNIDENTIFIED SPEAKER: Thank you.

MR. MOODY: My name is Richard Moody, Municipal Engineer for the Township of Roxbury. Mayor Dawson asked me to put some information, put it in the testimony on the

New Jersey Sole Source Aquifer. This, as has been discussed much this evening, is the aquifer where the proposed incinerator and ash landfill will be located. The sole source aquifer was designated June 10th, 1988 and it's comprised of 15 drainage basins. These drainage basins include the counties of Warren and Hunterdon and portions of Sussex, Passaic, Morris, Somerset and Middlesex County and large counties in New York. The basin is comprised of thin glacial deposits and fractured bedrock. There's a depth to ground water generally of less than twenty-five feet. The aquifer serves an approximate population of over 493,000 people. Eighty-six percent of the population of this aquifer obtain their water from underground sources, 46 percent through public water supply systems and 54 percent through domestic wells. The New Jersey geological survey of the EPA further designated, classified this sole source aquifer region as one of high vulnerability to ground water and surface water contamination. What we have prepared for

your information is a USGA quadrangle and shows the area that is basically Roxbury Township and Mount Olive Township. The three drainage basins included here are colored. The Musconetcong Sole Source Aquifer which is part of the state sole source aquifer region is in the blue. In the green basically is the South branch of the Raritan. And in the yellow is the North Branch of the Raritan. The site is located basically right here which is in the Musconetcong basin. What I've done from this is prepared a site, specific chart in which I have identified the incinerator site which is located in Roxbury, the landfill site which is located in Mount Olive. The light blue colors on the map are the well fields that are located within a half mile of the site. You have the Musconetcong Water Works which supplies the water for the majority of Netcong and you have three well fields in Roxbury Townsnip that provide a majority of the water for the western portion of the township. Overlaying this map in the dark blue areas are the national wetlands, inventory maps for the

wetlands adjoining the site and this black line that runs through here is the dividing line between the Musconetcong basin and the South Branch of the Raritan Basin. As you're aware the Musconetcong basin flows to the Delaware River. The Raritan basin flows to the Raritan river. The site straddles the two basins. What you have here is a possible contamination of both basins if an accident should occur. In discussing this project with the DEP, and I was with the New Jersey Geological Survey Section this morning, they have indicated that unless there are federal funds for this project, the project will not receive the sole source aquifer review; that it will be passed through the DEP and at your recommendation, if that's what it will be, it will be passed and put into construction. Roxbury Township would request that if this project proceeds that the Freeholders would be sure this does receive a sole source aquifer review. You're potentially contaminating the water of two drainage area basins and we feel that would be a review that would be necessary.

(AUDIENCE APPLAUDS)

DIRECTOR HYLAND: Thank you. Steve Frankel. William Loeffler. Wanda Milling. Bernadette, I think it's, Farasolle. John Kovacs. Greg Borsinger, Mary Jean Gerry, John Gerry, Bert Carr, Elaine Concklin, Mark Orman. Nobody? James Schiess?

MR. SCHIESS: My name is Jim Schiess. I live in Mount Olive. Having listened to everyone speak this evening the one thing I'm sure of, if there was an eleventh commandment that shall be, thou shalt love thy trash. You'll approve this incinerator. No matter what, you'll approve it, regardless of the mercury, vinyl chloride and everything else the people are talking about. The DEP knows this is going to happen. Don't worry about anything. There's a bill on a moratorium, Mr. D'Agostino down there, number A4105, pick four, play the number. Let's go along with

it a little bit. We will replace you. That's a given. However, when we do -- Brendan Byrne is gone and this is such a good deal, how will we remember you? I come up with nine names for this incinerator. How about the Michael Sawka Scorcher, right up in the front or the Anthony Bucco Burner, the Michael Dedio Destroyer, the Fred Rossi Rooster, we'll vote on this, the Patrick Hyland Heater, the Armand D'Agostino Destroyer, the John Sete Scraper, the Jonn O'Keefe Annihilator, the Carol Murphy Maimer. Our problem is we allowed this to happen to ourselves by buying products we can't get rid of. That's our problem. We're at fault. You're a little bit more at fault. Let's just take a positive approach to this. Give us a chance. Just give us a chance to recycle this stuff. Let us work on it. We haven't done a good job. That's not your fault. Let's learn to, love thy trash, not send it to hell. Thank you.

(AUDIENCE APPLAUDS)

DIRECTOR HYLAND: Ted Skouras? Raj Pawar? Bernardine Greene is next, if she's here.

UNIDENTIFIED SPEAKER: This is a public hearing. I hope you heard the public. I waited this long because I have a very urgent appeal to you. I have a progressing lung disease and it gets worse every time I face air pollution. Unfortunately, I only have five minutes to tell you my life story but it all started in Michigan ten years ago when the acid rain was falling and air pollution was there. We moved to New Jersey and we picked the best place in the State of New Jersey which was Roxbury because the air quality in Roxbury was very good. And what happens now is when the incinerator is built we're going to have all the nitrogen, oxide sulfur dioxide, carbon monoxide, and I spend my time, gentlemen, 80 percent of my time in the Summer outside because I have to breathe fresh air. I need oxygen. This is my story. What is there -- what can you guarantee me

when you have this incinerator how long do I have to live? Whose going to pay my bills to the hospital? Is Roxbury going to have a rescue squad ready for me whenever I have collapse of my lungs? Those are my problems, gentlemen. There's another severe problem that I think you need to consider and that is, that faces not only me but all the rest of Morris County and you heard the engineer. The pollution of the aquifer, how far you are willing to go, you know. How much of a price do we have to pay. We already are paying one price. That is the radon that's coming from the bottom, now you'll try to sink us from the top by making air pollution.

(AUDIENCE APPLAUDS)

UNIDENTIFIED SPEAKER: (Cont'g.) I'm a professional engineer. I worked on incinerators, built incinerators and I started them, and I'm sorry I did that because every one of them started got shut down two months later and the reason they shut down, gentlemen, is not because they

were not the state-of-the-art, it was because the pollution, the gases that were generated were so toxic it ate right through the metal, ate right through everything we put in there. Finally, we had to shut it down. There was no choice because otherwise we could kill the people that were living around the area. What happened to the incinerator? They got shipped out of the state. Where? Designation? Timbuktu, I don't know but they got shipped out. So it's my plea to you, I do intend to live long but if you go through with this project you'll cut my life short. I do intend to see may grand children. I do intend to see my kids through college but I don't think I can do that if I have to face the pollution that you're going to generate, and don't tell me that I don't know what pollution is. Incinerators do pollute. There is no known process known to man that makes incinerators one hundred percent free air pollution. It's not possible. It's just not possible. Your incinerator your building does not have enough high temperatures in it to break down every molecule of isocynate,

every polymer being manufactured in this country to make the plastic harder, harder than the steel, it's impossible. You're going to have things in that incinerator that you never dreamed of. You're going to have people putting in the weed killer bags, will be burning in there things you never dreamed of. You'll have lawns that are sprayed with the weed killers. That will be going in the incinerator. Gentlemen, the only thing I can say at this time is, please reconsider. It's my life you're playing with. So, therefore, that's all I have to say and those people, the same age bracket are probably facing the same thing. I'm not telling you a lie here. I have a medical history that tells me every year I fail my physical because my lungs do not have enough breathing capacity. I'm tired of listening and getting routed from place to place and this is the place I intend to stay. Thank you, gentlemen.

(AUDIENCE APPLAUDS)

DIRECTOR HYLAND: Bernardine Greene here? Tom Johnstone? Rose Mandala. Theodore Wilson.

UNIDENTIFIED SPEAKER: Mr. Hyland, freeholders, there's been a lot of factual information, statistical information, scientific information, and more recently very emotional personal testimony presented. I have none of that to present. I think what we have to remember is a couple of basic things. When the first discussion of the incinerator started I felt this was the final discussion to the garbage problem. I have since learned this is as outdated as can be, cannot take nothing and create something. Neither can we take something and create nothing. A good magician can make it seem so but it's an illusion which the naive believe. Filling a hole with ash and burning it does not make it go away. After burning it may seem to be more noxious and lethal in such a concentrated form than as it would have been

in an old-fashioned landfill unburned. The irony of this is that it would be done in the name of social progress. In addition to land, air pollution, we have another by-product not found merely with smelly garbage dumps but air pollution respiratory problems because of its insipid nature will strike without warning and insult us. If you're willing to support an incinerator tnen a closed landfill machine should be reopened. This could be no worse maybe in respect to air pollution preferable to what is being proposed here. As you have seen, we're not sheep to be led to slaughter, blinding, believing anything and everything told us by those in authority or by those experts in the field who provides the assurance on the one hand by counting the financial stakes on the other hand. I realize that there are those who generally believe this will solve all their problems; are creating a love canal and Times Beach. (phonetic) The names may be forgotten because of the lapse of time but the fallout that occurs, social and political, from a project of this nature will

be within our lifetime as well as that of our children. If indeed this remains a die hard proponent on this Board that believes this will not negatively affect property values, the quality of life, health of their child, does not object to having this in their backyard, let them make an offer for a fair market valuation for my home lying in the path of this fallout and live there and risk his investment, his health or her health and their families. I don't expect any offers because, ladies and gentlemen, to be leaders you must have a majority of the people benind you. You do not on this issue. To be an elected official mandates responsiveness. You have chosen to show no sensitivity and chose not to respond. You are all elected by the people, remember this, and accept the obvious will of the people. They represent the sampling of over 2,000 people here, tne people at 3:00 in the morning waiting for their invoice to be heard. We're not carpetbaggers from Bergen or Passaic County but property-owning voters from Morris County.

Please, please do not forget why you are here.

(AUDIENCE APPLAUDS)

DIRECTOR HYLAND: Madelyn Hoffman here?

MS. HOFFMAN: My name is Madilyn Hoffman. I'm the Director of the Grass Roots Environmental Organization and I live in Bloomfield which is in Essex County.

I work with over one hundred citizens groups across the State of New Jersey who are fighting different environmental problems and of those one hundred groups perhaps thirty are concerned directly with proposed garbage incinerators in their communities or concerned about establishing recycling programs in their communities or in their county.

I have been working on this issue for quite a long time and I think this is a first for me to be speaking at about 3:00 in the morning to a group of Freeholders and in a group, there's still quite a sizable audience

here, and I think residents of Morris County ought to be congratulated for the amount of time and effort they put into preparing testimony for you here tonight and I hope that you take into account their efforts, their concern and their dedication because I think you read another fifty names of people who weren't here because they couldn't stay and so if all of the people here who are signed up get to speak I still think you probably heard only the tip of the iceberg in terms of the sentiment in this county against the incinerator in Roxbury, Mount Olive, Rockaway, Parsippany or anywhere else in the county and I hope you take it into account.

(AUDIENCE APPLAUDS)

MS. HOFFMAN: (Cont'g.) I think what's happening here in Morris County, too is representative of what's happening all across the state and across the country. The number of groups, the sizes of those groups are growing all the time and the intensity of their feelings on this issue are growing and

the amount of information, the facts, the research that they have developed is growing also and the more people look at it and the more they do on this issue the more they're convinced incineration is the wrong way to go.

I was just at a program last Monday that was sponsored by the United Nation's for Youth. Approximately 2,000 students many of them from New Jersey, many of them from New Jersey high schools, some from New Jersey middle schools, even some fourth and fifth graders, and the message there was all the same. What we're trying to do is to re-establish some sort of control over our way stream. What we're trying to do is to recycle all the materials that can be recycled, to compost all the materials out of our way stream that can be composted and to use biodegradable or recycling packaging so materials that can't be recycled could be recycled later on.

This is what people all across the state and all across the country of all ages are crying out for.

(AUDIENCE APPLAUDS)

MS. HOFFMAN: (Cont'g.) And this is what you as Freeholders, as government officials that are supposed to represent the people should also be concerned about because this is what your constituency is trying to tell you. Why are they trying to tell you this? Because, number one, they want to save and conserve resources.

Number two, they want to prevent further pollution of our air, water and soil and you have heard many times tonight from many different people that New Jersey is already in very sad shape as far as air pollution, water pollution and soil pollution is concerned.

And, number three, the reason they want to do this is they want to save money, save money for the county, save money for the taxpayers, save money all the way around so that money can be spent on much more productive, constructive kind of endeavors rather than being funneled into a garbage

eating monstor.

We have everything working in our favor. We have the mix going for us. We have the environment going for us. We have everything going in our favor and yet something is holding it up.

What's holding it up? Well, you heard over and over again tonight that we have certain people in this state representing certain interests that coming together in an organization like The New Jersey Clean Air Act to say they're here for a clean tomorrow and yet there are consulting firms that work for the counties that are going ahead with incineration projects. They're making money, coming up with studies counties want to hear. They're the builders, the construction industry. They see it as the biggest boon to the industry since nuclear power. Some of the labor organizations who have been sold a bill of goods by their employers, some of the solid waste disposal companies including waste management is the largest waste disposal company in the country. Don't tell me they are unbiased. Don't tell me they

don't have any other interest in this besides what would be best for them and best for business.

I believe that one of the reasons that we're seeing more and more of The New Jersey Act at places like this or in Ocean County, twenty-four hour radio adds they are getting nervous. They're feeling the heat from people like the people here in this room tonight, like the thousands of people in other communities across the state who have spoken out on this issue and they feel they must appear in some places like this in order to fight back. They have money, yes, but the people of the county and the people of the state have power in numbers and that's what they have shown here tonight, and that's what they will continue to show because they have been fighting this for quite a long time, will continue to do it as long as Freeholder Boards, the State DEP, and so on continue to insist on going ahead with garbage incinerator projects.

Just a couple of more things. I waited out this long, I just want to finish up with

my thought and that is the public really does understand the true cost of incineration, are left to their own devices without the big money interests spending hundreds of thousands of dollars on propaganda, would project such proposals. They know about ash deposits, know about contracts that lock us into providing a certain amount of garbage or providing the money instead, know about the air pollution, know about how the contracts are set up so most of the liability is borne by the county taxpayers and not the incinerator companies, building the incinerator, know about how much it costs to construct and operate these incinerators, know about the cheaper, safer alternatives.

I think what they're asking for is a little bit of old-fashioned democracy here looking to those who are supposed to represent them to make decisions in their interest to be consistent with what they believe and what they're willing to spend until 3:00 or 4:00 or 5:00 in the morning convincing you you ought to be doing the same.

Thank you, very much.

(PROCEEDING CONTINUES ON FOLLOWING PAGE)

DIRECTOR HYLAND: Is there anyone else that signed up on the public list that would like to speak?

MR. JOLLEY: I came in after the list had been closed, I had a planning board meeting but I was wondering if I could speak for two minutes.

DIRECTOR HYLAND: Go ahead. State your name please for the record.

MR. JOLLEY: My name is Scooter Jolley, J-o-l-l-e-y.

Through the course of the evening I heard, as the gentleman mentioned before, that there are emotional arguments and the tempers sometimes run high. I tonight that myself sitting in the last few rows here had a couple of moments where I directed negative energy towards the people sitting on the dais up there, and many other people in this room have as well.

One of my concerns is that currently my wife is fighting cancer. We don't have an incinerator now, but she's got cancer nonetheless, and for whatever reason it's in her body. And talking from a purely personal point of view -- I don't know what the experience with

any of you people up there has been with cancers -- but under chemo therapy medication and that whole program of rehabilitation and getting better, there is hours and days where you can't do anything. There are times when your hair falls out, there are times when you can't deal with your family and with your kids because of what the medication does to your body, trying to stop the other things that are doing things to your body.

If there's one iota of a chance of anyone being contaminated by a toxic material emanating from the smoke stack, I think it's a terrible idea. You haven't lived with it, and I have. And that's from a source that we don't know. If we know that there's any possibility that cancer causing agents will emanate from this smoke stack, then I think it's incumbent upon us to say no to the incinerator. I think it's very important.

The second point that I would like to make regarding the hired assassins that came in from Bergen County is that in a moment of passion and representing the other side of this issue, with a number of people that were here, they should-

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have expected to be targets of passion. In a very unprofessional way -- and we're adversaries, we're talking as professionals here, in a very, very unprofessional way, one of the representatives that came in with ACT made a horrendous statement to a member of the audience that was very personal and very demeaning. And the reason I bring this up is not to embarrass the individual in the audience but just to let you know the quality of people that these organizations hire to represent them.

I thank you for your time and your consideration. Thank you.

(Applause.)

DIRECTOR HYLAND: Yes, good morning.

MS. LAUREYS: Good morning.

Is this okay? Can you here me?

DIRECTOR HYLAND: Sure.

THE WITNESS: Okay. I'm Cecelia Laureys. I'm a member of the Netcong Borough Council, the Environmental Commission, and Im also Recycling Coordinator for Netcong.

I'd like to point out the fact that there is at present only one mandated solid waste plan in the State of New Jersey. There only one

proven alternative method of disposal.

The New Jersey Recycling law was passed in April 1987. Yet for some strange reason, despite an enormous solid waste disposal problem, the full implementation of that law was delayed until April of 1989, a full two years later.

Well, 1989 is here now. Yet, many communities and many commercial establishments have hardly begun to put anything but very minimal efforts into recycling.

The Morris County solid waste plan calls for incineration of non-recyclable trash; but, what it really will mean is incineration of non-recycled trash. It makes very little sense --

(Applause.)

MS. LAUREYS: It makes very little sense to consider very costly environmentally risky incineration solutions before we have really given recycling a fair chance. We need to find viable methods and markets for recyclables, especially the plastics. We need to develop methods to collect and remove household hazardous waste from the waste stream; the

batteries, the aerosol cans, the cleaners, et cetera.

The nation's waste stream is estimated to consist of approximately thirty-five and a half percent paper of all kinds; eight and a half percent glass; 9 percent metals; 7 percent plastics; 20 percent yard waste; 9 percent food waste; 9 percent a combination of leather, rubber, plastics and textiles and wood. This totals 98 percent. The other 2 percent is miscellaneous inorganic wastes.

Real efforts must be made to separate, recycle, reuse and compost much more of these materials than we are now doing. Only after such efforts have been made can we realistically make a statement as to how to dispose of the balance.

Incineration only reduces 75 percent by weight. The 90 percent by volume that we speak of only includes the air space that's inside of most of the plastics and other items. If we recycled 70 or 80 percent, it would be much more cost effective to landfill the remaining 20 or 30 percent.

Incineration should be only a last resort,

not a first choice.

(Applause.)

MS. LAUREYS: Very few incinerators or maybe none at all should be built. If a small percent of the money and the resources that had been pledged to incineration in the State of New Jersey were diverted to improve recycling methods/recycling markets, the need to incineration rate might be removed.

Every one here who is against incineration must make a very personal commitment, as I did many years ago, to recycle as much as possible. If we're not part of the solution, we're part of the problem. The State has yet to put teeth into the recycling law. Haulers and the transfer station are still not fined for accepting recyclables in the trash loads.

And lastly, I find it very hard to believe that a town like Morristown with 17,000 people totaled only 571 tons of residential recyclables in 1988. This compared with Netcong, a town of only 3500 people with very little money and very little resources, which totaled 455 tons of residential recyclables.

(Applause.)

MS. LAUREYS: Likewise, Morristown has so many commercial units, and yet totaled only 474 tons of commercial recyclables in '88, compared to Netcong's 300 tons of commercial recyclables.

Such figures clearly show that recycling, which is, remember, mandated by law, needs to be vastly improved before we proceed to even consider all these other very costly solutions, such as incineration.

Thank you.

MR. LOHBAUER: Good morning, Freeholders. My name is Mark Lohbauer, I'm from Camden County, and I've come all the way up here tonight because I'm basically a NIMBY. New Jersey is my back yard.

And I wanted to be sure -- thank you. Actually I'm on the Board of Directors of a couple of groups that have interest in what you're doing here tonight. One I'm proud to say, New Jersey Grass Routes Environmental Organization from which you've just heard Executive Director, Marilyn Hoffman, and Work on Waste USA, an organization that's devoted to see that sensible approaches are taken to the waste stream, and people are given a meaningful

opportunity to recycle and compost and reduce their waste rather than plunge into the burning of it.

So that's why I've come up here. And frankly I couldn't miss this, because this is really the first public siting hearing in the year 1AW, "after Warren." You know, I frankly expected to see a situation where we had Freeholders looking more like people who had unknowingly wondered into a cow pasture and discovered there was stuff all around them that they were trying to miss, and we haven't seen that tonight and I'm surprised. I really thought that after seeing the horrible experience that Warren County has gone through that we would see other counties tremendously enlightened by that and try to find ways to avoid getting into incineration. But maybe we haven't seen the AW experience yet.

I know that the other people we've heard here tonight have been concerned with asking you the right question, hoping that, you know, something will stimy or make you think of an answer. But the fact is you're asking a question through this hearing; and that is, have

we chosen the right site for a lulu; you know, a local, undesirable land use?

That's really the answer to another question, which is, what are we going to do with our trash? That's the question on all of our lips, of course.

But there's a better question. And the better question is one that I would really like you to think about, and that is: Why do the we presume that we have to make trash into in the first place? Why can't we work on waste prevention strategies rather than waste managing strategies? And I think that's really what the bulk of the people who have been talking to you tonight have been saying. They're ready to do their part to stop making the trash that you are responsible for dealing with in the first place. They're willing to go through the steps of separation, they're willing to go through what it takes to minimize the amount of what we would call trash, stuff that can't otherwise be recycled or composted or resued

And I want you to know that, sure, everybody is interested in that. You've heard DEP say, sure, we love recycling too and we're-

into reduction. Come on, are they really? They've told you they have a four-prong strategy and the first two prongs are reduction and recycling. But, you know, has the State spent dime one on reducing waste in New Jersey?

You know, if they were to take some of the money that they're paying to these people in Alliance for Action and ACT, and some of the consultants who get paid all that fancy money to come in and give you these great plans, if we took some of that money and put it into waste reduction we would probably cut New Jersey's waste stream by a third. But we don't do that we put all the money instead into incineration. We have the State giving interest-free loans to projects that -- just the amounts just dwarf the money that's being devoted to recycling. That's where the problem is.

And if Morris County falls in line like all the other counties and says, yeah, we're willing to follow the State's wonderful plan, it sounds reasonable, then you're making the same mistake. You're really -- you can't do that.

The fact is, a mass-burn plant can't survive with anything more than token recycling,

and that's what you're condemning Morris County to if you build this plant.

(Applause)

MR. LOHBAUER: So, I'll put it this way: If Dr. Paul Connett who heads up our organization, Work on Waste, says, yeah, you heard the wonderful news, an incinerator will reduce your waste stream, maybe three tons of trash can be boiled down to one ton of ash, but if you recycle you take that same three tons of ash and get one ton of recyclables, one ton of compostable, and one ton of education. Education that the public will know this stuff we don't want in our waste stream anymore, we don't want to buy in. We don't want to make it -- maybe you to legislate it out.

That's the direction we should be going into. Morris County shouldn't be a trash junkie. A wonderful term we heard coined here tonight. You don't want to waste your real estate values, your health or your quality of life. The question for you is: Do you want to be the first county after Warren to make the significant progressive step toward intensive recycling, or do you want to be just another

county who stepped in another cowslip?

Thank you very much.

DIRECTOR HYLAND: Anyone else,

MR. CARDONI: Joe Cardoni from the sleepy little town of Flanders. And I'm getting pretty sleepy.

DIRECTOR HYLAND: Maybe you ought to go home.

MR. CARDONI: Tomorrow I look forward to that cold shower that's going to wake me up from this long evening. And that's the one issue that I want to talk about here.

What do the Shorham Nuclear Power Plant, Three Mile Island and the Bridgeport, Connecticut municipal garbage incinerator have in common? They all costs hundreds of millions of dollars to construct. They all have been shut down due to operational and safety concerns, and they're all located on large rivers, giving them an abundant supply of water. Any steam powered generating plant requires extraordinary amounts of water to operate.

A 1300 ton per day water cooled garbage burner requires close to a million gallons of water per day. A more expensive air-cooled

plant would use close to 200,000 gallons of water per day. A significant portion of that water is used in the process system. Process water will become contaminated with hazardous chemicals and toxic metals when used to quench the incinerator ash. This contaminated water will require treatment.

The site you're considering is conspicuously missing one of the elements common to the plants I had mentioned earlier; that would be the river in close proximity. Any water needed to operate this facility would be pumped from an already taxed underground water system. In an area where municipalities have enacted water restrictions during three of the last four summers, the Freeholders plan to draw hundreds of thousands of gallons of water per day.

According to a study conducted by Roy F. Weston, Consulting Engineers, the group hired by the County to evaluate the site, any significant water use would adversely affect the neighboring wells. The Weston report also stated that the water table on the site is relatively high. This would require that during construction and

excavation enormous amounts
have to be pumped out and dra
wetlands. Another concern cre
water table is the greater vul
contamination by any ground lev
pollution.

I have a set of questions
addressed with respect to water s
treatment.

Number 1. Why is this site
considered when your own consulting
indicated that the water supply wou
insufficient?

Number 2. During construction
operation, what effect would the inci
demand for water have on present level
consumption and on the requirements fo
development?

Number 3. What would happen to th
at the facility on days which water restr
prohibit me from watering my lawn?

Number 4. What method of treatment
propose for the contaminated water?

Number 5. Has an evaluation been
performed to determine the impact that wa

Walter J. Perelli, C.S.R.

964

discharge and contamination will have on federally protected wetlands?

Number 6. If, as it would appear obvious, the site does not have adequate water supplies and is not the best suited geologicly for an incinerator, why has the Freeholder Board not planned for the implementation of a backup non-burn plan? A plan that would not require the excessive amount of water and would be put on line in far less time in order to help meet your 1993 deadline.

As long as I've got two more minutes. There's been an article recently in the Roxbury Register where Mr. O'Keeffe was quoted as saying, and I quote "I think that the alternatives to incineration have been examined ad nausium. There are no alternatives to incineration," end quote.

I would ask of you, Mr. O'Keeffe, to produce for public review any comprehensive examination the Freeholders have undertaken related to alternative methods of solid waste management. Major metropolitan areas such as Seattle, Washington and San Diego scrapped dangerous and costly incineration plans in

favvor of intensive recycling, composting and segregated land-filling. Have you personally contacted any of these officials? Mr. O'Keeffe, your insistence to push an incineration policy which could jeopardize the economic foundation of the entire county is what should be examined ad nausium.

What is the insensitive behind your love affair with an incinerator industry that has shown itself to be a proven loser rather than a proven technology? Are you willing to guarantee that you will not accept a position similar to former DEP Commissioner Dewling, waiting at the end of our smoke stack?

An elected government official should remain objective with regard to the magnitude of our garbage crisis. Your -- the favortism you are so blatantly displaying by discrediting workable alternatives stinks of partiality. A policy that considers the welfare of all your constituents is not merely appropriate, it is demanded.

And let me just say in closing that I'm here tonight because I care about the community and my way of life. Nobody had to pay me to

attend, like these pro-incinerator factions which left here about 11:00 o'clock.

DIRECTOR HYLAND: Anyone else from the public?

A VOICE: I'm speaking again but I won't take five minutes.

It's twenty after three in the morning, an ungodly hour for the end of a hearing, and I presume in your opinion, anyway, this is the end of the hearing. Let me state that in my opinion this should not the end end of the hearing.

(Applause.)

A VOICE: I have sat here for the last at least four hours and heard you rattle off names of people who for any number of very legitimate reasons, be it work, be it family or otherwise, have had to leave this hearing which commenced at approximately eight o'clock tonight.

A VOICE: Babysitters.

A VOICE: It is unconscionable in my mind that there is not a continuation of this hearing at some future point in time.

(Applause.)

A VOICE: In order to afford those people who took the time and effort to come out, sign

up, and make a statement -- whether that statement was repetitious or not, it's irrelevant. They are the public that you are here to hear, and you're denying them access.

DIRECTOR HYLAND: Anybody else?

MS. LAUREYS: Cecelia Laureys.

A lot of people asked me why Netcong hadn't done anything, why there were not more Netcong officials here. Sad to say, the feeling was that our Council, well, what's the use, they're going to do what they want anyhow.

I don't believe that that's accurate. Another thing, when I keep talking about recycling, some of the people on our Council say, oh, sure in Netcong we're saving every little scrap of paper and yet places where we work up the line, they're throwing tons of paper in the garbage, you know, in these big office buildings. And the contention was, well, what's the little guy, the average residential home owner got, how can we compete with big business, who do not want to put the effort and time into recycling. And that's what's got to be it.

Now, then, as I said, if we have recycling and really give it a chance, then maybe we can

consider these other things. But it isn't apathy, it's a lot of people just feel, what's the use. And that's I think why Netcong is not here, plus we left a meeting at eleven-thirty.

DIRECTOR HYLAND: Thank you.

Anyone else?

Sir, you have five minutes.

MR. GERMINE: Thank you, that's more than I had before.

DIRECTOR HYLAND: That's your fault. Go ahead. Start the clock, please.

MR. GERMINE: Okay. Thomas J. Germine, I'm representing Concerned Citizens of Mt. Olive -- Concerned Citizens of Morris County. It was Concerned Citizens of Mt. Olive.

I want to say, you can be heard over the microphone, Mr. Hyland, and it can be heard before when you referred to me as a wise ass, too. And that's on tape.

Now, you fellows up there, and Freeholders, maybe I'm a wise ass because I don't show sufficient deference for your office, but in my opinion, you're working for me not the other way around, fellows and ladies.

(Applause.)

MR. GERMINE: And you're working for me under a very stringent set of laws, which you seem to have forgotten about. I'll read you some of them. It says here that the Legislature declares it to be the policy of this state to provide citizens and municipalities with opportunities to contribute to the development and implementation of Solid Waste Management Plans.

(Applause.)

MR. GERMINE: Is that what you are doing here tonight, Mr. and Mrs. Freeholders and Mr. D'Agostino who ha instructed members of the Board to keep their mouth shut and under no circumstances make any statements or under any circumstances repond to any questions or ask any questions.

Is that the nature of a legislative fact finding hearing, to sit there, dumb and mute? And even when the simplest question is posed, to look at each other in amazement as you've been doing tonight? Is that giving the citizens of this county an opportunity to contribute to the development and implementation of the Solid Waste Management Plan?

Don't answer, I don't expect you to.

Now, one of the things I was trying to say as I was being dragged away before is that not only are you doing a siting through this amendment to the Solid Waste Management Plan, but you have not advised the public that this amendment also increases the capacity of the plant incinerator from 1,000 tons a day, which is the current maximum listed in the 1985 amendment, to 1300 tons a day. So not only are you not taking into account increased recycling; not only are you violating the statutory requirement of making maximum practical use of resource recovery procedures; not only are you freezing recycling at the 18 percent level; but you're turning the clock back and you're actually increasing the capacity of your burner as you go along.

Now, I have a couple of questions as to how this site wound up in Roxbury and Mount Olive Township. And I have a couple of questions as to why we hear this talk about reopening Combe Fill North. Could it have anything to do with the fact that the Mt. Olive site which may be now used as a landfill site,

will require four and a half million dollars of reclamation work as a result of the quarrying operations there? And that the quarry owner would otherwise be responsible for those costs if the county didn't come in and pull them out of the fire?

And is it also true, I ask you, that three of these Freeholders had, as a major campaign contributor in their primary election run last year, this very same quarry owner?

A VOICE: That's bull shit.

MR. GERMINE: Now I ask you another question about Combe Fill North that you're so anxious to reopen. Is it not true that one of the principal prior owners and operators of that landfill, who would likewise stand to be involved with millions of dollars of clean-up costs for the Superfund clean up of that site, which the county by using it and reopening it would bail them out on, is it not true that those individuals were also major campaign contributors to three of the Freeholders in their primary campaigns of 1988?

A VOICE: We can guess which three they are.

MR. GERMINE: Now, in addition to giving us a bigger plant, you're also proposing through this amendment to give us a plant that not only burns residential waste, and this is in your proposed plan amendment, but that will burn construction debris, animal carcasses and food processing waste, oil spill waste, chemical waste, pesticides and asbestos, as well as non-infectious hospital waste will be burned under the propsed plan amendment in the county incinerator.

This is regardless of the fact that all of these types of waste, Type 13, 25, and asbestos, are specifically precluded from being combusted in incinerators by regulations of the New Jersey Department of Environmental Protection.

DIRECTOR HYLAND: Would you wrap up, please?

MR. GERMINE: Thank you very much.

DIRECTOR HYLAND: Thank you.

(Applause)

DIRECTOR HYLAND: Anyone else?

MR. KEVITZ: Mr. Director, I would like to enter several exhibits into the hearing.

The first one is C-1, a Morris County MUA

resolution, recommending the inclusion of the Roxbury Township site for waste energy facility, dated 4/689; the second one, C-2, Morris County SWAC resolution dated 4/12/89; the third one, C-3, Morris County Solid Waste Management Plan update, dated May, 1985; the fourth one is C-4, Morris County Solid Waste Management Plan amendment dated August, 1987; C-5, is a Morris County Solid Waste Management Plan amendment dated November, 1987; C-6 is the Morris County Solid Waste Management Plan amendment dated May 1989; C-7, is the Morris County District Recycling Plan amended October 1988; C-8 is the Morris County Solid Waste Management Plan amendment dated February, 1989; C-9 is the Morris County Resource Recovery Facility site Suitability Evaluation Report, dated April 1989; C-10 is a proof of mailing dated April 28th, 1989; C-11 is a proof of mailing dated April 14th, 1989; C-12 is the second proof of mailing dated April 14th, 1989; and C-13 is a proof of publication, dated April 21, 1989.

DIRECTOR HYLAND: Is there anyone else wishing to be heard tonight -- I mean, this morning. Seeing no one --

MR. WITMAN: I only have two quick questions. The first one is, with all of the questions and all of the exhibits that were asked here this evening. Are we the public going to get any type of response from you whatsoever, and when?

My name is Leonard Witman.

DIRECTOR HYLAND: We will respond on that as soon as we can. It will probably be when we vote on it I imagine, but maybe sooner; I don't know.

MR. WITMAN: Will we have a response before the vote or will it be after the vote?

DIRECTOR HYLAND: I don't know.

A VOICE: You said before, before.

DIRECTOR HYLAND: Probably not until after the vote I imagine.

MR. WITMAN: So you will have a vote on this and after that you will give us a reason for the vote in responding to all the materials?

DIRECTOR HYLAND: Some of the people will give a reason the night they vote.

MR. WITMAN: Could we get the answers to the questions we've asked as to the questions requested --

DIRECTOR HYLAND: I don't see why not.

MR. WITMAN: To all the questions that we've requested?

DIRECTOR HYLAND: I don't see why not.

MR. WITMAN: Thank you.

DIRECTOR HYLAND: Thank you. Jim?

(Continued on next page).

(PROCEEDING CONTINUES AS FOLLOWS:)

MR. JAMES JULIAN: I'm sorry I was late. I was coming back from a trip. I yelled to anyone else in the audience. For the record, it's 3:33 in the morning. This hearing has been going on since 8:00 tonight. A couple of thoughts. James Julian, Roxbury Township Council. Before I left I saw a newspaper article on incineration in the Morris County Daily Record, would like to point out I was on this site in 1979 but it was not as an incinerator site but was as a resource, separation resource recovery type of location. Mr. Mc Phearson (phonetic) had been in charge of this before SWAC was formed. Morris County thinking was not always incineration. They thought of alternatives and I hope you gentlemen listen to the people, review the alternatives, get the reports out after tonight. Secondly, I served on the planning board one term. I reviewed the report that was submitted selecting Roxbury Township as a site. I would say from my experience the report was

not, was very poorly done, did not reflect a study of the entire County of Morris for locating a resource recovery facility. Obviously, you wouldn't put it on the western end of Morris County where the garbage is not being generated. Since the the county has gone onto include other lands in the site, which I see as a last minute attempt to justify the original selection which was to meet their own criteria, I hope when the Freeholders vote, explain how we came from fourteen going to number one tonight. How we came to -- I don't know what the new Freeholders heard between the beginning of November when they took office but I think the people are owed an explanation for that.

(AUDIENCE APPLAUDS)

MR. JULIAN: (Cont'g.) I don't know if the gentleman before me -- Mr. Germine gave one but I'm interested in your explanation. Gentlemen, to sum up here, you're the elected officials. We hope before you vote we heasr from you as to why you're making whichever decision you come up with. Very simply, you heard all the experts. If you put this

incinerator in, garbage burner, you'll lessen the air quality in Morris County. It's a fact. Now, do you want to do that or, number two, fallout that can contaminate the water supply as Mr. Moody pointed out, you'll pollute the ground water that effects the Delaware River Basin, hundreds of thousands of people, and that's a question that you should answer to yourselves before you take your action. I can only -- trying to think, get my last thoughts together. I sat on the governing body. If you don't have all the answers you owe it to the people that elected you to hold off your answer, decision until you have the answers. The people deserve answers to their questions. In summing up for Mayor Dawson, the township officials expect you to answer the questions, expect you to make the best decision, not just any decision for Morris County. Thank you.

(AUDIENCE APPLAUDS)

MR. JULIAN: One other thing, Patric, a gentleman raised an issue on water. I don't think all the costs of this incinerator has been explained to the people in Morris

County. Possible solution popped into my head, is the Morris County Municipal Utilities Authority may develop wells in Chester, somewhere else, and bring lines up to the foreign trade zone and now who will pay for that? If that's the solution for the need for water coming from the people that are paying the water bills shouldn't they know the answers to these questions before you people vote and, you know, what are the total costs of this incinerator? Thank you.

DIRECTOR HYLAND: Thank you. Anyone else that wishes to be heard tonight? Mayor, did you want to wrap it up? Either one or both.

MAYOR DAWSON: I would have to concur with the last couple of thoughts that have been given here this evening that I don't believe -- my concern is when are we going to hear the responses to the questions and concerns that were raised this evening? I would have to say that I don't believe the Freeholder Board in good conscience could make a decision regarding the siting of the incinerator without being responsive to the

questions and concerns raised here this evening and if they do make that vote and they do make that selection and site the incinerator in Roxbury Township without answering the questions and concerns raised here this evening, then I have a serious problem with their thought processes. Thank you.

DIRECTOR HYLAND: Thank you. Anyone else that wishes to be heard?

MAYOR JOHNSON: In conclusion, I would say not only do we not want an incinerator in Roxbury, an incinerator in Morris County, in all honesty I don't think we want it in the State of New Jersey. Thank you.

DIRECTOR HYLAND: Anyone else wish to be heard? The public hearing is closed. The Board shall receive additional written comments May 22nd, 1989. All written comments addressed to the Clerk of the Court Board of Chosen Freeholders, The Courthouse, Morristown, New Jersey up to May 22nd, 1989 shall be considered by this Board before a final decision is made on the amendment to the Morris County Solid Waste Management Plan

for consideration. All in favor say, aye.

(ALL BOARD MEMBERS-AYE)

(WHEREUPON PROCEEDING CONCLUDED AT 3:40 A.M.)

(A Resolution recommending the inclusion of the Roxubury Township site for a waste to enerty facility in the Morris County Solid Waster Management Plan, dated April 6, 1989 is marked Exhibit C-1.)

(A Resolution of SWAC, dated April 12, 1989 is marked Exhibit C-2.)

(Morris County Solid Waste Management Plan update of May 1985 is marked Exhibit C-3.)

(Morris County Solid Waste Management Plan Amendment, dated August 1987 is marked Exhibit C-4.)

(Morris County Solid Waste Management Plan Amendment, dated November 1987 is marked Exhibit C-5.)

(Morris County Sold Waste Management Plan amendment, dated April 1989 is marked Exhibit C-6.)

(Morris County District Recycling Plan Amendment, dated October 1988 is marked Exhibit C-7.)

(Morris County Sold Waste Management Plan Amendment, dated February 1989 is marked Exhibit C-8.)

(Morris County Resource Recovery Facility

Site Suitability Evaluation Report, dated April 1989 is marked Exhibit C-9.)

(Proof of mailing, dated April 28, 1989 is marked Exhibit C-10.)

(Proof of mailing, dated April 14, 1989 is marked Exhibit C-11.)

(Second Proof of mailing dated April 14, 1989 is marked Exhibit C-12.)

(Proof of Publicatoin dated apri 21, 1989 is marked Exhibit C-13.)

(Whereupon at 3:50 o'clock a.m., the hearing is concluded.)

* * * *

Site Suitability Evaluation Report, dated April 1989 is marked Exhibit C-9.)

(Proof of mailing, dated April 28, 1989 is marked Exhibit C-10.)

(Proof of mailing, dated April 14, 1989 is marked Exhibit C-11.)

(Second Proof of mailing dated April 14, 1989 is marked Exhibit C-12.)

(Proof of Publicatoin dated apri 21, 1989 is marked Exhibit C-13.)

(Whereupon at 3:50 o'clock a.m., the hearing is concluded.)

* * * *

COUNTY OF MORRIS
BOARD OF CHOSEN FREEHOLDERS

Public Hearing

Roxbury Township High School
Auditorium
Succasunna, New Jersey

Monday, May 8, 1989

- - - - - - - - - - - - - - - x
RE: Adoption of the :
Morris County Solid Waste :
Management Plan. :
- - - - - - - - - - - - - - - x

C E R T I F C A T I O N

WE, ELLEN D. DiBENEDETTO and WALTER J. PERELLI, Certified Shorthand Reporters and Notaries Public within and for the State of New Jersey, do hereby certify the foregoing to be a true and accurate transcription of our stenographic notes to the best of our ability.
Dated: June 14, 1989

ELLEN D. DiBENEDETTO, C.S.R
Lic. No. X100431

WALTER J. PERELLI, C.S.R.
Lic. No. X100765

- Precision Machining
- Computer Disc-Pack Spindles
- Design and Engineering Service
- Waste Processing and Recycling Plants

Reuter, Inc.

410 - 11TH AVENUE SOUTH
HOPKINS, MINNESOTA 55343-7878
Telephone 612-935-6921 FAX 933-5803

- Blow Molding of Plastics
- Structural Foam Molding
- Rotational Plastic Molding
- Mechanized Refuse Collection Services

October 2, 1989

Ms. Cindy A. Lombardi
Research Assistant Central Staff
New Jersey State Legislature
Office of Legislative Services
State House Annex CN-068
Trenton, New Jersey 08625

Dear Ms. Lombardi:

Thank you for allowing our company, Reuter, Inc. this time to speak on Centralized Recycling Facilities. Reuter, Inc. owns and operates a 400/800 TPD recycling dRDF Facility in Eden Prairie, Minnesota since 1986. We are building, owning and operating a 660 TPD recycling/compost facility in Pembroke Pines, Florida which will be operational in early 1991.

Is Reuter's type of technology a viable option for this community? I say an emphatic YES. Why? There are many reasons, but I will only mention a few key points.

1. Our facility is not a new technology. It has been working for over 30 years in Europe. It is proven both in Europe and more recently, in the United States since 1986.

2. Our facility is extremely flexible. We are able to build a recycling center with options, and use all of the options according to the market demand. For example -- presently there is a paper glut in Minneapolis, Minnesota. Our recyclers have to pay $20 per ton to get rid of the paper. With our system, we simply manufacture a pellet which is 98 1/2% paper and is burned along with coal to generate heat and electricity at Fort Howard Paper Co. and Weyerhauser Paper Co., in Wisconsin. They are presently paying Reuter $18 per ton for our fuel. Why the pellets? Because they burn cleaner than coal and are lowering their sulphur emissions by over 20%. Sulphur is the number 1 cause for acid rain. Reuter, Inc. in effect is helping to clean up our atmosphere.

3. Mass burn incinerators burn everything they receive including plastics, which is oil, ferrous metal, grass clippings, food scraps, cardboard, aluminum, glass, etc. Why burn these products when we can recycle them with a system such as ours.

Metals will be sold to a scrap dealer for melt down then will become a new product, grass clippings and food scraps will become a valuable compost material, cardboard is baled, sold and will eventually become another form of cardboard, aluminum will be baled and sold to companies like Alcoa and Reynolds.

Forty percent of our waste is paper. We are able to bale it and sell it where it will become recycled paper or shingles for the housing industry, or we can pelletize the paper to burn along with coal as I mentioned earlier. When we are finished, Reuter, Inc. has recycled between 85 - 90% of the incoming waste. We have been doing this since 1986 in Minnesota and will be doing this in Florida in 1991. We would like to do this for you here, in New Jersey.

Just a couple of final points. I flew here from the International Public Works Convention which is being held in Orlando, Florida this week. There are over 12,000 public officials at this show looking at exhibits such as ours. My point here is very clear. There are many companies in this field -- not just Reuter, Inc. There are many alternatives to mass burn. My final point is that at Reuter, Inc.'s facility in Minnesota, we have a 100% participation rate for recycling. All the refuse brought into our plant from the haulers goes through our process of recycling. Those citizens who chose that hauler, which brings the refuse to our plant, are recycling between 85-90% of their garbage.

I invite each and everyone of your to come to Minneapolis and see for yourselves. We are open Monday through Friday from 7 a.m. to 5 p.m..

Thank you for your kind attention and remember - Think recycling.

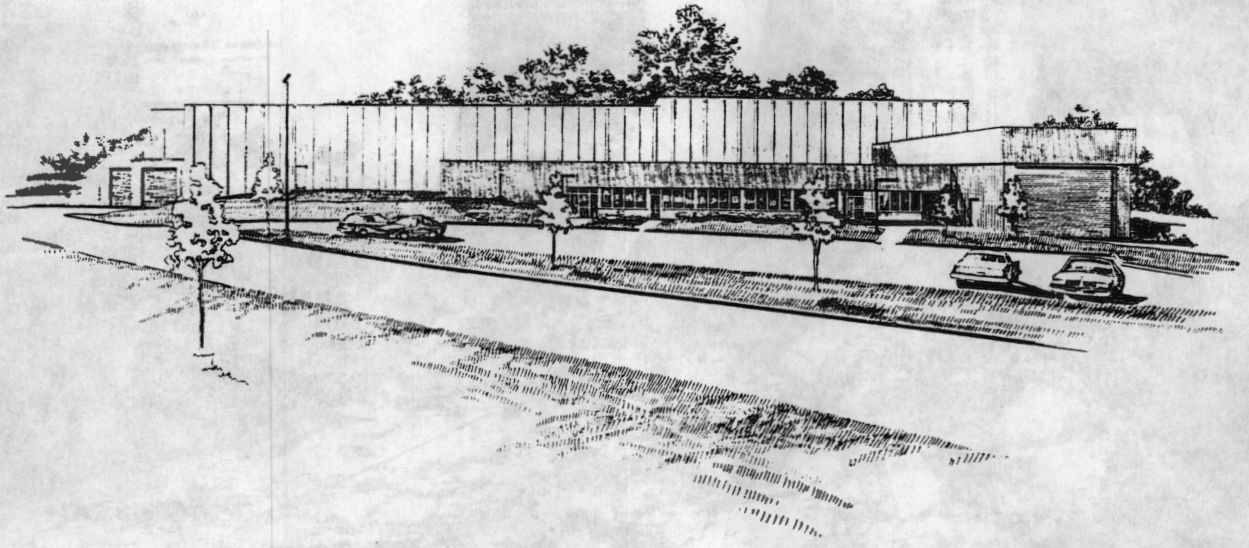
Sincerely,

Paul M. Reuter
National Sales Manager

PMR:tmr

enclosure

P.S. I have enclosed additional information on our system which I would like you to include with my testimony, a film on our process, literature on our company and a generic proposal which we have submitted to Atlantic County, New Jersey.



The Reuter recycling plant in Eden Prairie, Minnesota

Solid waste processing and recycling...the Reuter way!

A better alternative, and a solution, to mass burning and landfill problems.

3R REUTER RESOURCE RECOVERY

9x9 V



Mass burn and landfill dumping are the solid waste disposal methods of the past. Recycling is the better alternative, and the solution, for the future.

Today's solution to solid waste disposal problems.

Our nation's ever-increasing population, decreasing space and our modern lifestyle have all combined to create a modern problem ...the solid waste disposal problem!

This problem has become more intense with each passing year. Finding a better alternative, and a solution, to mass burning and landfilling has been one of our nation's major objectives for many years. A practical, non-polluting solid waste disposal system is required today, and for the future.

Landfill dumping...the outdated solution.

Traditionally, this country's approach to refuse disposal has been landfilling. Earlier generations had no need to look for other solid waste disposal methods. Plenty of land for a new landfill site was always available. Soil pollution problems were not even considered by a sparsely populated nation.

Today, landfills are no longer a solution to refuse disposal, or even an acceptable option!

People are concerned about ground water and soil pollution. Available land has become scarce. More people, and today's standard of living, generate more solid waste per person than ever before. The total volume of solid waste created each day in this country is staggering.

Society, today, is demanding action while some land is still available, and before soil pollution problems become even worse. Some states have already passed legislation that prohibits landfilling of unprocessed waste after January 1, 1990.

Mass burning...an unpopular solution.

For some time, mass burning of waste has been an alternative to landfilling. Supporters of mass burn felt that it would become the refuse disposal solution for the present and the future.

The higher cost of this disposal method, however, and the world's need to curb future air pollution, have combined to make this an unpopular and unacceptable solution for many people today.

Many, including some of the earlier mass burning proponents, have raised serious doubts about burning as a waste disposal solution. They are concerned about the real risk of adding even more pollutants to the nation's already polluted air supply.

Public concern over both air pollution and ground water pollution has been mounting each year. People deserve, and are demanding, better solutions to solid waste disposal problems.

Reuter recycling...today's proven solution.

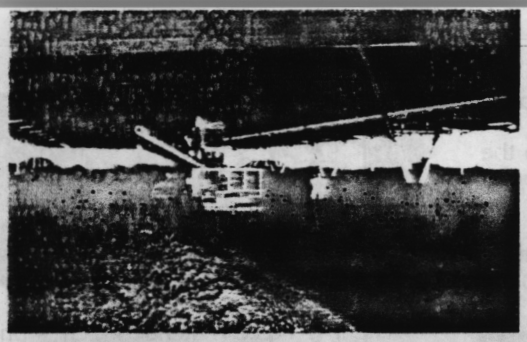
Reuter is committed to leadership in the refuse industry. Leadership that will help provide society with a better environment now... and in the future.

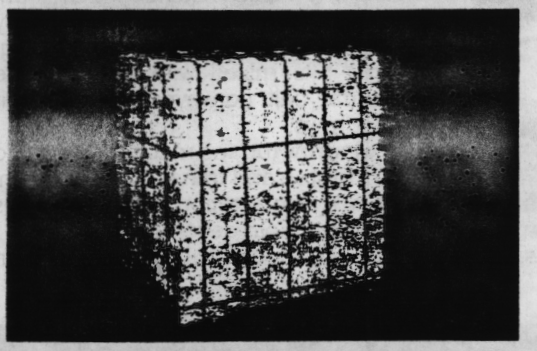
After carefully studying the refuse industry, and the various disposal methods in use around the world today, we have identified a more attractive alternative, and a beneficial solution, to solid waste disposal problems. RECYCLING!

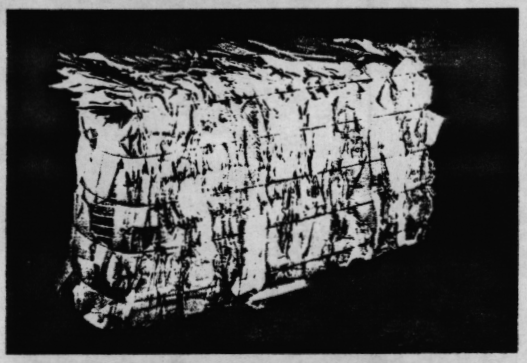
REUTER RECYCLING is today's proven answer to society's solid waste disposal concerns and requirements. Recycling has been the practical disposal method used successfully in Europe for more than 25 years.

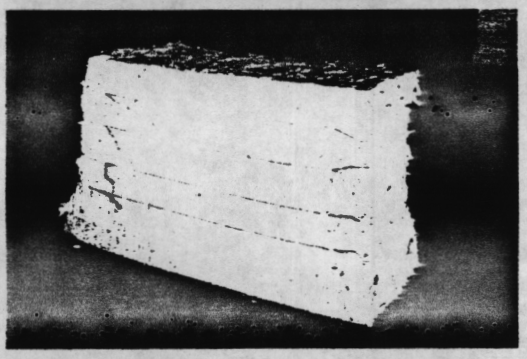
Unlike burning or landfilling, which are only an attempt to react to the need to remove residential waste, RECYCLING actually permits up to 90% of the refuse to be reused in one form or another. Approximately 10% of the waste processed at a Reuter recycling plant actually ends up in a landfill.

Talk with Reuter. Let us show you the solution to refuse disposal problems today, and for the future. Reuter Resource Recovery offers modern solid waste processing and recycling at its finest!

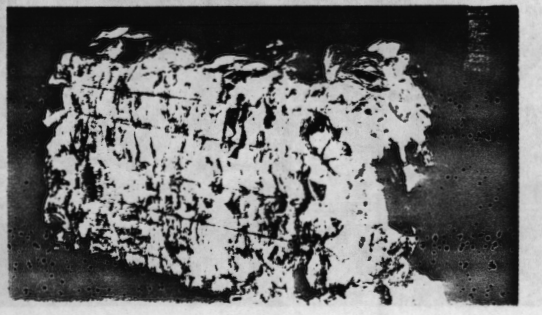












Environmentally safe and economically sound the Reuter way turns solid waste problems into profits

Since the beginning of time, solid waste material has been treated simply as the same suggests...waste! It was discarded because there was always plenty of land available for dumping and an abundance of raw materials to create more waste.

Only in comparatively recent history has the world been concerned about waste disposal...about air and ground water pollution, and the fact that our supply of some raw materials will eventually be exhausted unless different solid waste disposal methods are found for the future.

Reuter, Inc. has identified a waste disposal method that offers a better alternative to mass burning and landfill problems.

Recycling addresses the issues of ground water and air pollution. It enables society to reuse raw materials over and over again. It is the only solution today that will meet the needs of future generations tomorrow.

Waste processing and recycling THE REUTER WAY is accomplished in a 70,000 square foot facility. The plant is capable of processing and recycling 800 tons of solid and commercial solid residential waste a day. This produces up to 160,000 tons of fuel pellets annually.

In addition to producing fuel pellets, the plant also reclaims several other materials including plastics, cardboard, aluminum, and ferrous metals.

The Reuter recycling plant clearly demonstrates the superiority of recycling over landfilling and mass incineration. Recycling answers today's environmental concerns.

3R REUTER RESOURCE RECOVERY

GAIY

Leading the way to pollution-free refuse disposal.

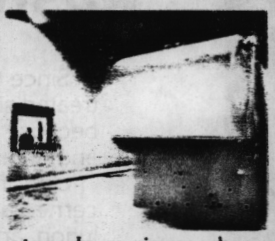
Reuter assumed a leadership role in the refuse industry in the United States in 1986 with the completion of its new solid waste processing and recycling facility in Eden Prairie, Minnesota.

The Reuter recycling plant is the most modern and most mechanized waste processing and recycling installation in the United States today. It enables us to offer the nation a better alternative, and a solution, to mass burn and landfill problems.

Waste recycling at the Reuter plant begins when trucks enter the scale-house room to be weighed.

After weighing, the trucks dump the solid waste directly on the tipping floor for inspection. The trucks are then weighed again for their empty weight.

Large bulky items, such as appliances and mattresses, are separated from the solid waste for disposal before a front-end loader moves the remaining refuse to two receiving hoppers.



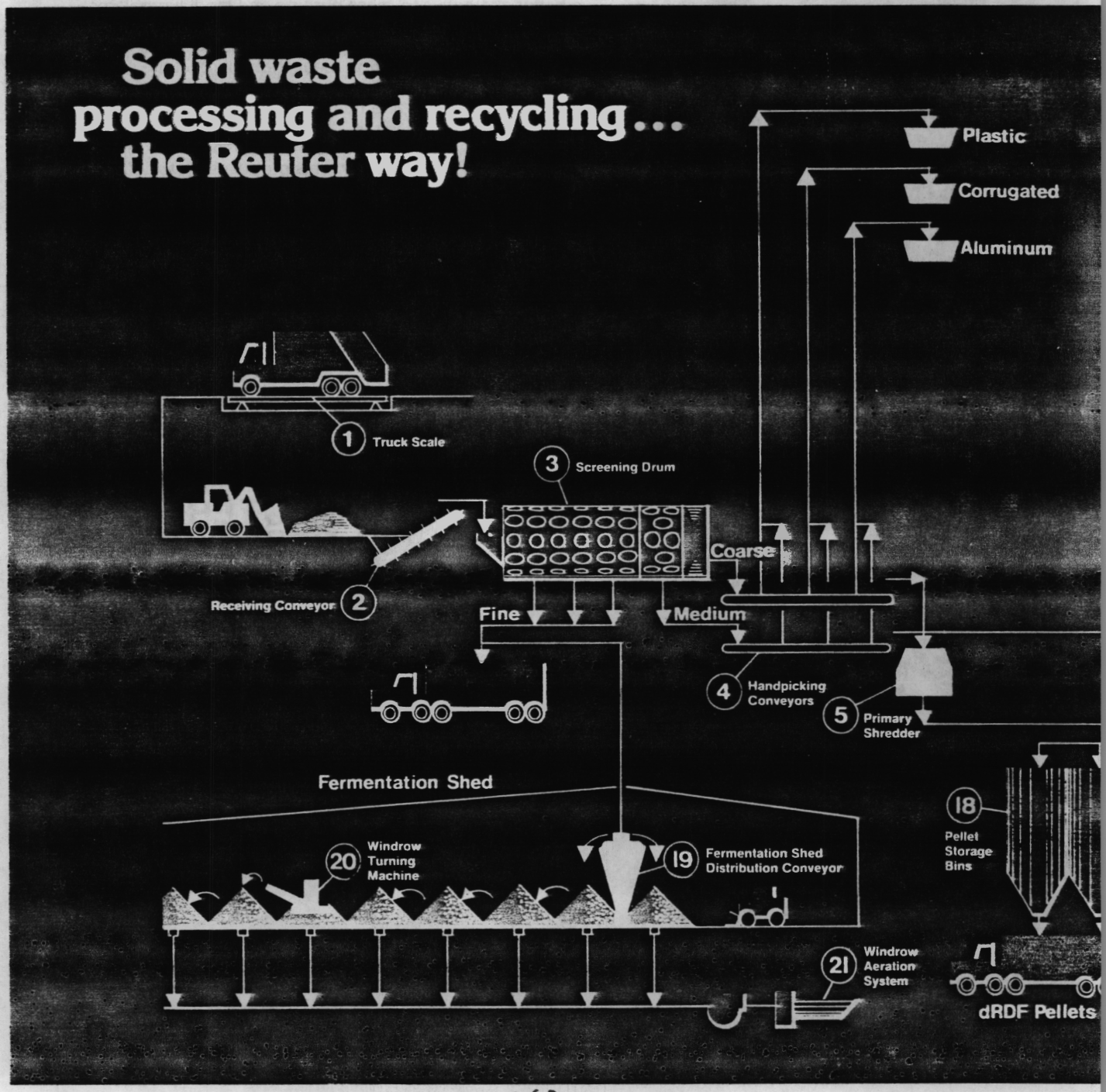
The refuse is moved from each receiving hopper by a slat conveyor to rotary drum sieves where it is separated into three fractions, according to the size of the material.



The fine waste material, which is primarily organic material, is immediately transported to a site for composting. There, it is mixed with water before a central belt conveyor discharges it in windrows.

A windrow turning machine is used to mix, moisten and transfer the raw compost, while an aeration system provides oxygen for rapid decomposition.

After a period of about 6 weeks the or-



ganic fraction has been converted into a humus-like substance, which is then sold as soil amendment and conditioner.

Medium and large fractions are carried on conveyors past workers who physically hand-pick and remove such products as aluminum, plastic and other recyclable items.



The large items are conveyed to a hammermill where they are reduced in size. This material is then combined with the medium fraction for further processing.

At this stage, ferrous material is removed by means of magnetic separators. The remaining iron-free, medium-sized material is then conveyed to air classifiers.



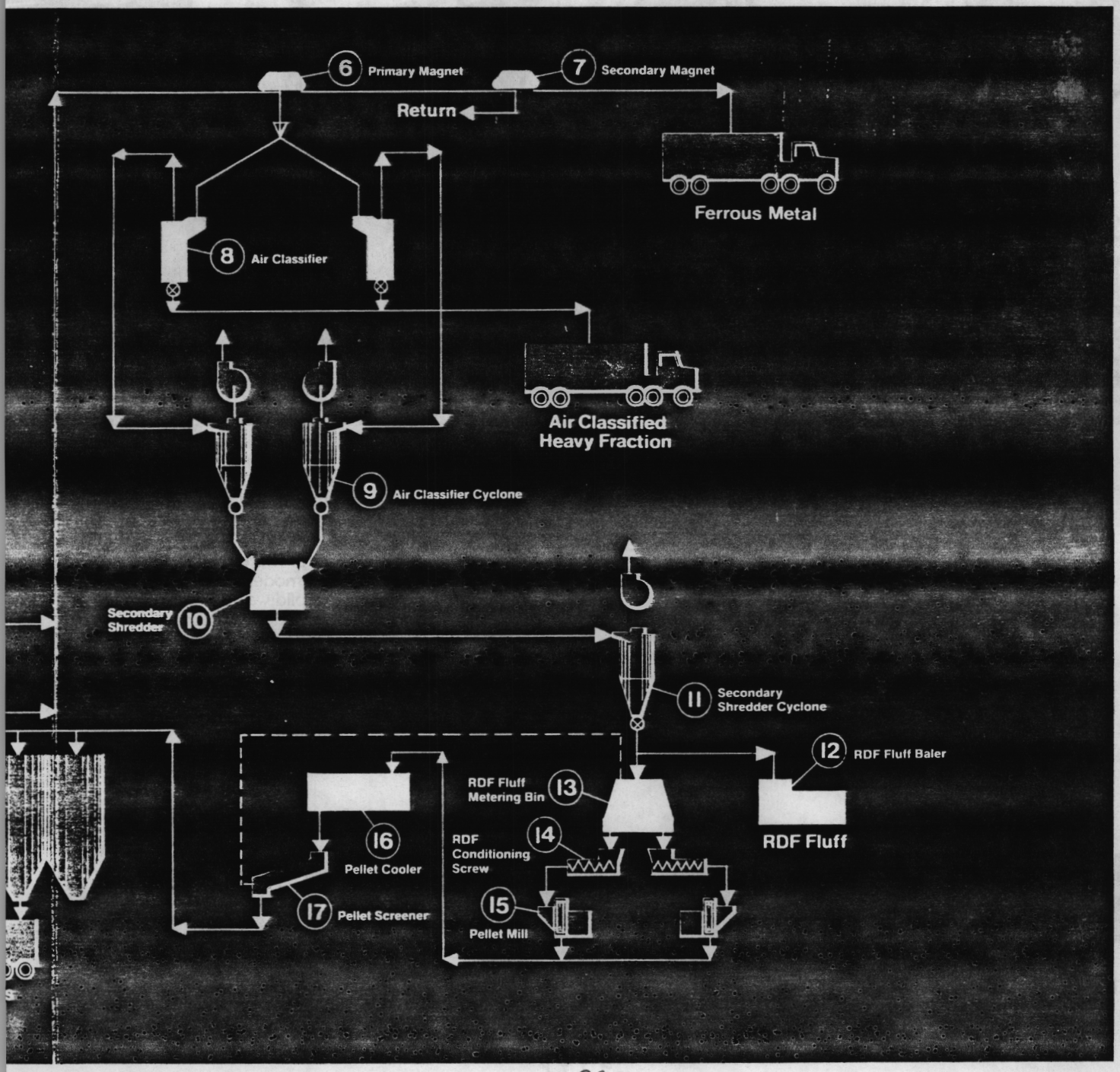
In the air classifier a stream of air lifts the light-weight material and conveys it to a cyclone which, in turn, discharges the light fraction into a secondary shredder.

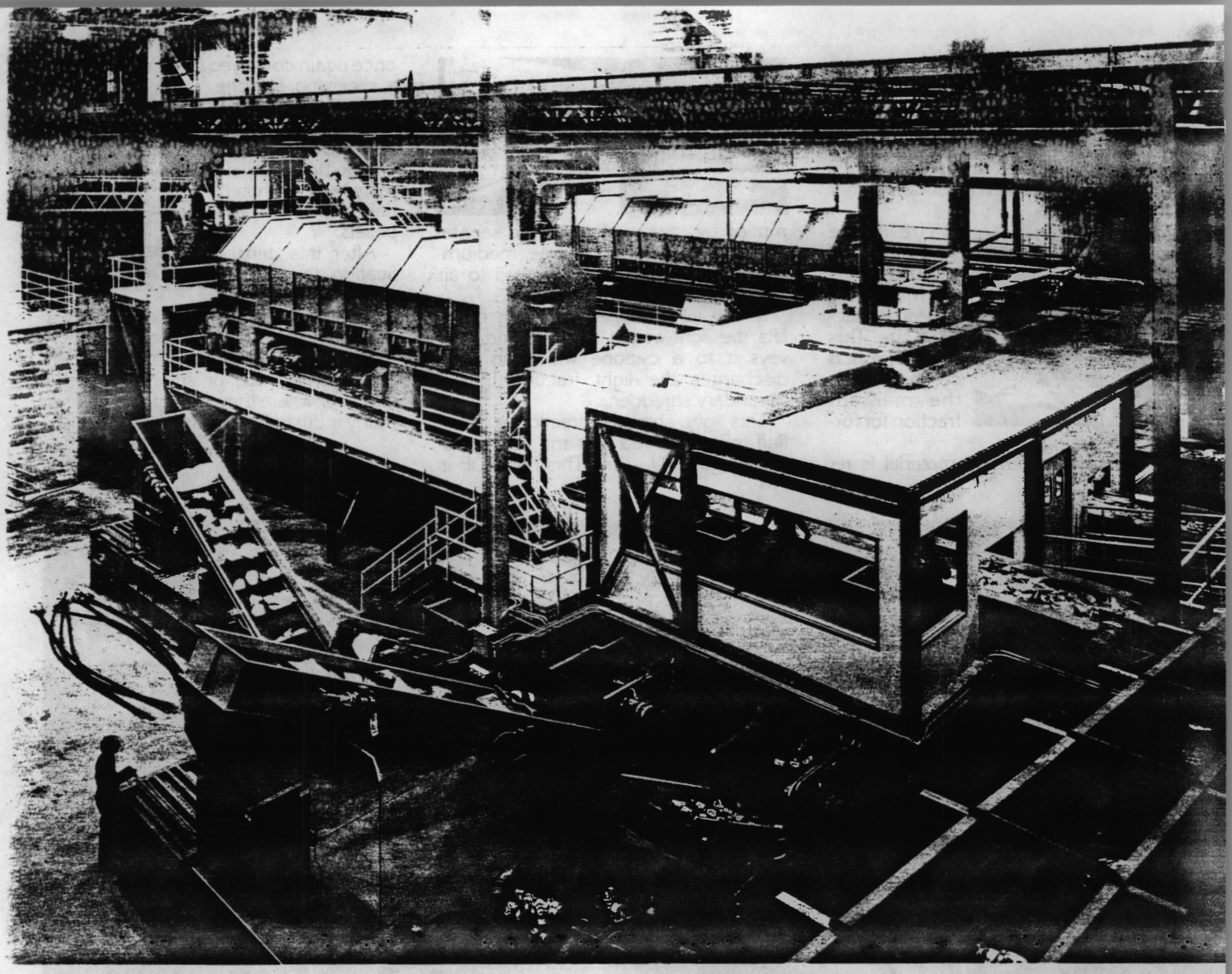
This light, shredded fraction is called fluff refuse derived fuel and has a relatively high BTU value. This fluff RDF is once again conveyed by an air stream to a receiving cyclone where it flows by conveyors into a RDF mixing and conditioning machine. The RDF is then charged into a pellet mill where the material is densified into pellets.



After this densification, the pellets are cooled in a pellet cooler before they are screened in a pellet screener for size uniformity.

The densified RDF pellets are then ready for storage or shipment to the end-user where they will replace coal for many industrial companies.





Let us show you how recycling can turn waste into profits.

Waste is no longer waste at the Reuter recycling plant. Up to 90% of all solid waste has become re-usable material that can be resold.

We are anxious to share our profitable recycling success story with others in the refuse industry. We invite industry inquiries for more information, and we invite you to tour our modern Reuter plant to observe first-hand how solid waste is converted into reclaimable materials and fuel pellets.

REUTER RECYCLING is today's proven solution to solid waste disposal problems. We are leading the way to a better environment tomorrow.

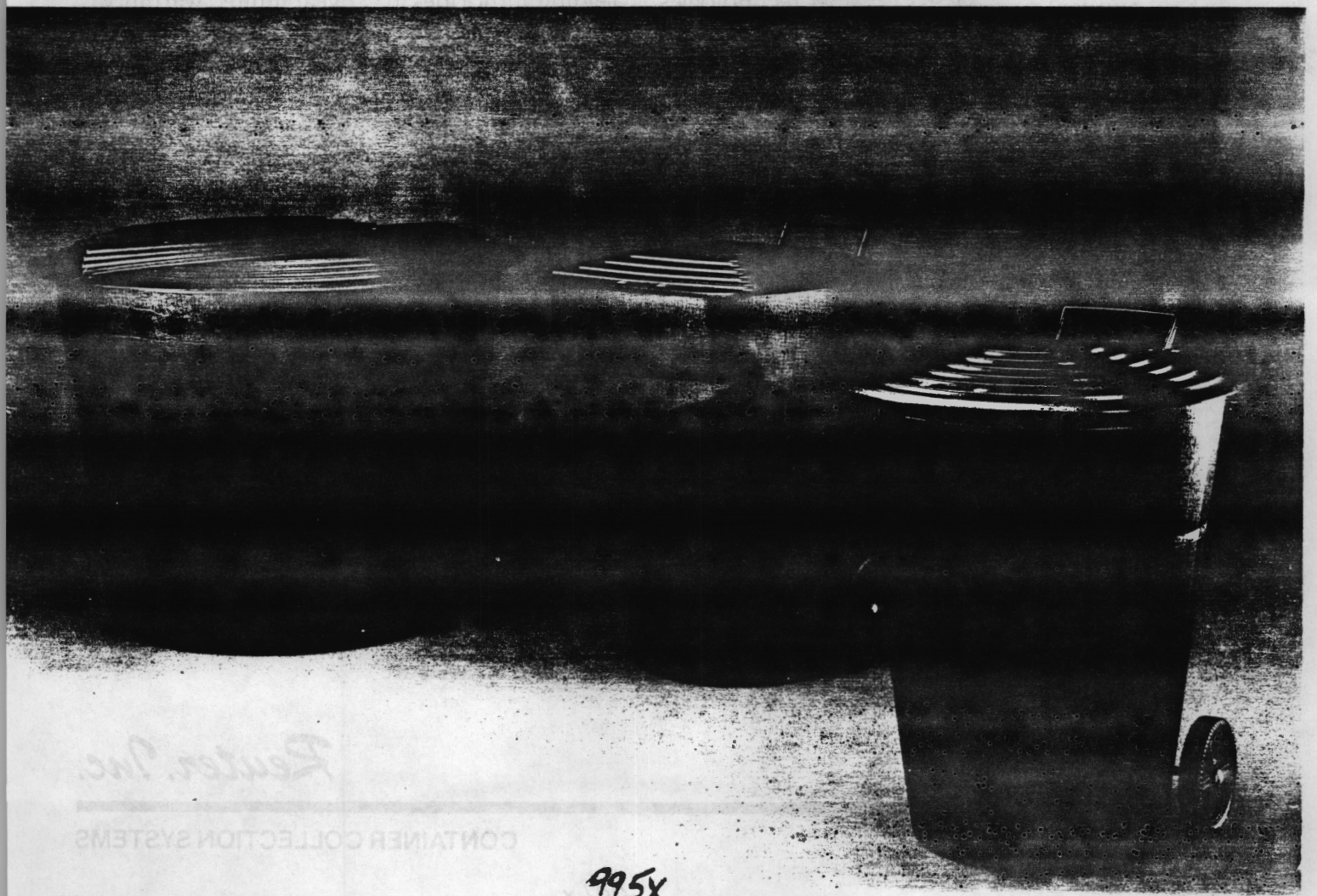
3R REUTER RESOURCE RECOVERY

410 11th Avenue So. Hopkins, MN 55343 • (612) 935-6921 • Attn: Paul M. Reuter, National Sales Manager

994X

Reuter...

for a full line of refuse collection containers!



995x

A Forty Year Commitment To Excellence

It was back in December of 1948 when Edward J. Reuter opened the doors of his newly formed company in Hopkins, Minnesota, a suburb of the twin cities of Minneapolis and St. Paul. Reuter insisted that, no matter what type of projects were undertaken by this small machine shop, an emphasis on quality and reliability would always be maintained.



Reuter Inc. spent its first few years manufacturing parts for space technology. In the mid 1960's, Reuter entered the plastic market manufacturing plastic bags, battery jars, etc., a new dimension. After years of research in the waste management area, this enterprising group developed and began to market a new line of specially designed refuse containers.

From that point on, the company solidified its dedication to improving the waste disposal industry with a serious investigation of the diverse technologies used throughout the world, including incineration, (mass burn as it is often called) and refuse recycling.

As a result of this intensive study, Reuter Recycling, Inc., the first waste processing facility of its type in the United States, opened its doors on December 30, 1986 in Eden Prairie, Minnesota. Utilizing the latest in state-of-the-art technology, this 75,000 square foot facility is capable of processing and recycling up to 800 tons of residential and commercial solid waste per day.

These demonstrations of the company's commitment to excellence have paid off in a big way. Today, Reuter, Inc. is recognized nationally as one of the leading authorities in waste management and recycling. Its refuse collection container division, Reuter Container Collection Systems, has grown to a point where it is now the largest manufacturer of its kind in the world.

Reuter Container Collection Systems designs and builds a full-line of structural foam and blow molded containers for use with both partial and fully mechanized collection systems. These sanitary refuse receptacles are waterproof, durable and geared for both residential and industrial use.

Containers range in size from 90-gallon capacity for individual families to the 300 gallon multiple use model for commercial applications. Quality is guaranteed by Reuter's specially developed ten year limited warranty. Reuter is the ONLY company in the Mechanized Refuse container business to "outlive" the 10 year warranty period on containers.

We invite you to learn how you can benefit from adding Reuter Container Collection systems to your work force. Just let us know that you are interested. You'll be glad you did!

Reuter, Inc.

CONTAINER COLLECTION SYSTEMS

996X

300 GALLON
Structural foam container

The ideal container for alley, apartment, multiple family or light commercial collection... convenient, economical and versatile!



Reuter, Inc.

Mechanized Refuse Collection Containers

997X

300 GALLON STRUCTURAL FOAM CONTAINER

...the ideal container for apartment, multiple family and light commercial mechanized refuse collection.



The size, styling and rugged construction of the 300 GALLON Structural Foam Container make it the ideal container to choose for apartments, for light commercial collection or for several families sharing a once-a-week alley collection.

This industrial-strength container is engineered and constructed to provide users with unmatched quality and durability. It is designed to out-perform and out-last any other comparable container on the market today, and we guarantee this claim with our 10-year limited warranty.

Where a larger refuse collection container is needed, this container cannot be beat! It features 400% thicker wall construction. Warpage and bridging are completely eliminated. The wide base styling assures unmatched stability and safety.

For safe, sanitary and convenient mechanized refuse collection for apartment buildings, multiple family alley collections, and light commercial customers, the 300 GALLON Structural Foam Container is an industry leader. You and your customers deserve the best...and that is what you can expect from this mid-sized mechanized refuse collection container.

SPECIFICATIONS:

Diameter of Lid -	57"	Capacity -	300 gallons
Loading Height -	42"	Minimum Weight -	100 lbs.

IMPORTANT CONTAINER FEATURES AND BENEFITS:

- Industrial strength.
- A fabrication process that guarantees incomparable quality.
- Proven long-lasting strength and durability.
- A container that completely eliminates warpage and bridging.
- Non-clinging, non-sticking, smooth interior walls.
- 400% thicker wall construction.
- Quick and easy assembly, saves labor costs.
- Lower loading heights.
- Wide base provides additional stability and safety.
- Attached, light, super-flexible and self-closing lid cover keeps the container dry and waterproof, while reducing lid-closing noise.
- Alleviates problems with pets, insects, rodents, odors, litter, noise and wind.
- 10-year limited warranty.

Contact Paul M. Reuter, National Sales Manager at 1-612-935-6921

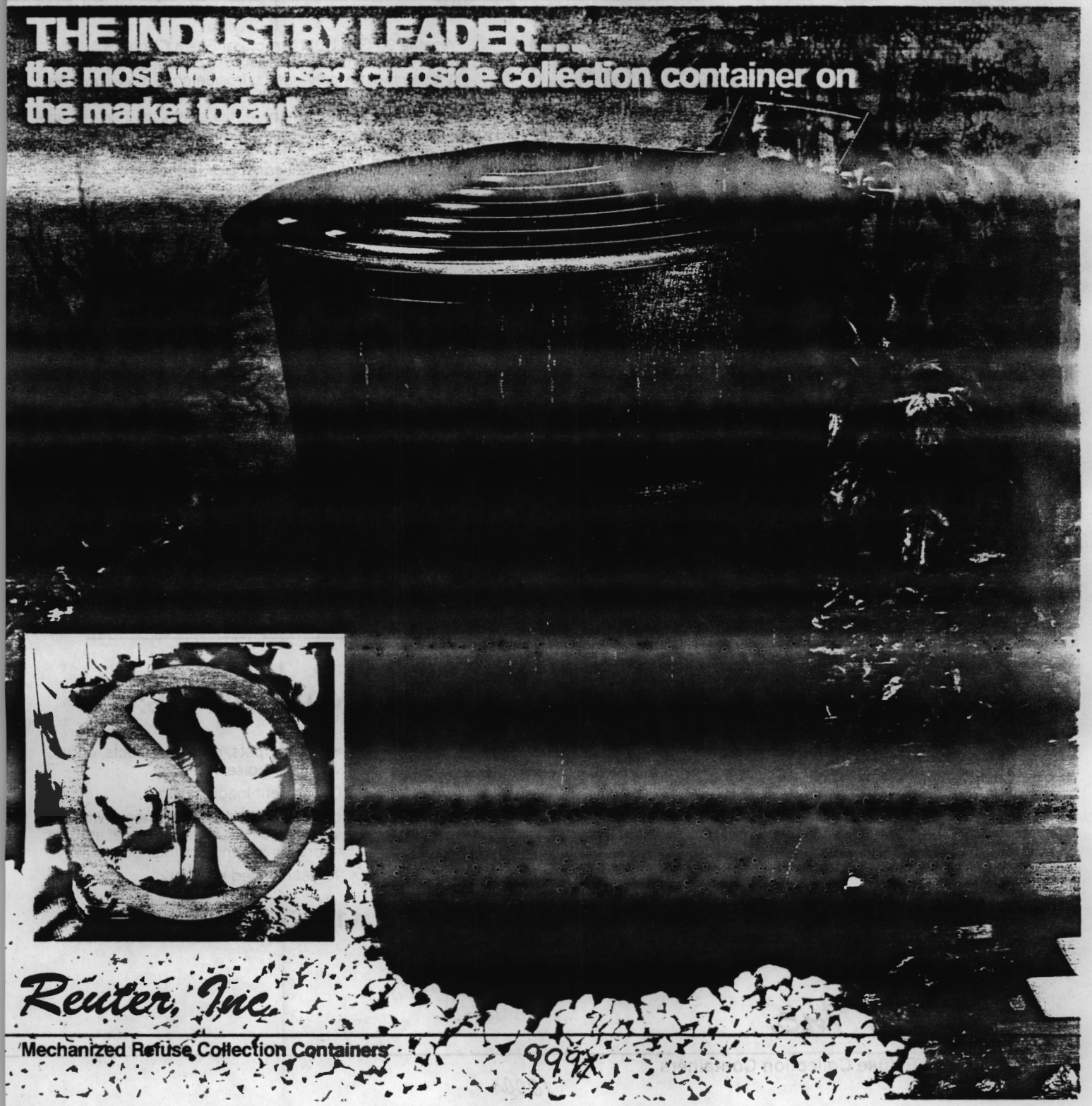
Reuter, Inc.

410-11th Avenue South
Hopkins, Minnesota 55343

Mechanized Refuse Collection Containers

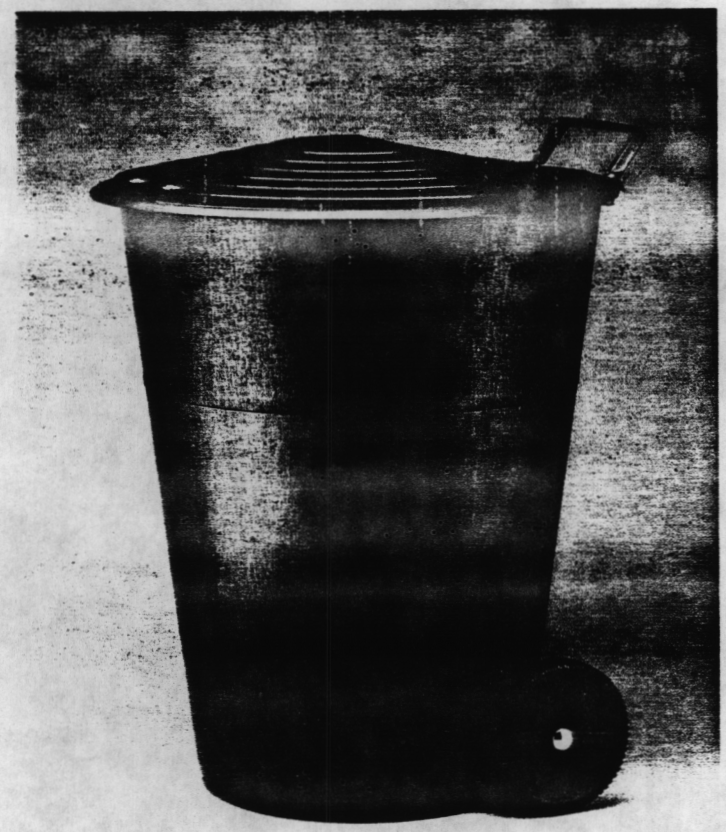
998x

90 GALLON
Structural foam container



90 GALLON STRUCTURAL FOAM CONTAINER

The most widely used curbside collection container on the market today!



Yes, the 90 GALLON Structural Foam Container has set the standards for the refuse collection industry.

It is the most widely used curbside collection container for single-family units on the market today. It has earned its "top spot" in the industry. It has established an enviable reputation for long-lasting performance, reliability and convenience.

Since 1976 thicker wall construction means trouble-free container durability and longevity unmatched in the industry, and guaranteed by our 10-year limted warranty.

Go with the leader! Let the 90 GALLON Structural Foam Container, which is fabricated to completely eliminate warpage, demonstrate to you why it has become the most widely used curbside refuse collection container on the market today. Join the ever-increasing number of users and contractors who have chosen this popular container as their number one choice for safe, sanitary and convenient modern refuse collection.

SPECIFICATIONS:

Diameter of Base -	21½"
Diameter of Lid -	35"
Minimum Weight -	40 lbs.
Capacity -	90 gallons
Loading Height -	40"
Wheel Diameter -	10"

IMPORTANT CONTAINER FEATURES AND BENEFITS:

- A proven "state-of-the-art" manufacturing process, designed and controlled to guarantee container quality.
- A fabrication process that *completely eliminates* warpage.
- 400% thicker wall construction guarantees incomparable durability and longevity.
- Non-clinging, non-sticking smooth interior walls that reduce bridging.
- Completely waterproof containers.
- Proven single piece non-metal hinged lid made of a more flexible material.
- Container virtually eliminates problems with litter, pets, rodents, insects, odors, wind and noise.
- Convenient loading height.
- Large 10 inch diameter wheels, with single piece 3/4 inch steel axle, assures effortless hauling and maneuverability.
- 10-year limited warranty.

Contact Paul M. Reuter, National Sales Manager at 1-612-935-6921

410-11th Avenue South
Hopkins, Minnesota 55343

Reuter, Inc.

Mechanized Refuse Collection Containers

1000x

98 GALLON
Blow molded container



Reuter, Inc.

1001X

Mechanized Refuse Collection Containers

98 GALLON BLOW MOLDED CONTAINER
...the "all in one" container that's in a class by itself!



This truly "all-in-one" curbside collection container is in a class by itself in the industry. It is designed for use with both semi- and fully-mechanized systems.

The 98 GALLON Blow Molded Container is built to last! It is engineered to provide users with many years of trouble-free service, guaranteed by our exclusive 10-year warranty.

It combines rugged construction with attractive styling to make it a popular choice for individual family units, and for municipal contractors who demand the finest in convenience, durability and versatility.

You and your customers deserve the best. Choose the "all-in-one" curbside collection container that has established itself as an industry favorite for years with users and contractors. The 98 GALLON Blow Molded Container...it's safe, sanitary and convenient to use.

SPECIFICATIONS:

Length -	36¾"
Width -	32"
Minimum Weight -	46 lbs.
Capacity -	98 gallons
Loading Height -	42"
Wheel Diameter -	12"

IMPORTANT CONTAINER FEATURES AND BENEFITS:

- Durable, space-age plastic construction provides nearly twice the tensile strength and impact resistance of rotational molded containers.
- New, revolutionary design allows it to be adaptable to both semi- and fully-mechanized systems.
- Permits retrofitting to existing systems, and allowance for future changeovers without replacing the containers.
- Thicker walls virtually eliminate warpage.
- Light, super-flexible, self-closing waterproof lids.
- Streamlined styling allows the container to be wheeled easily through narrow gateways.
- Large 12 inch wheels provide easy handling and maneuverability.
- One-piece solid steel axle construction.
- Quick, easy assembly provides labor savings.
- Exclusive 10-year warranty.
- Your city, company or coded number can be molded permanently into the lid on all containers for identification purposes.

Contact Paul M. Reuter, National Sales Manager at 1-612-935-6921

410-11th Avenue South
Hopkins, Minnesota 55343

Reuter, Inc.

1002x

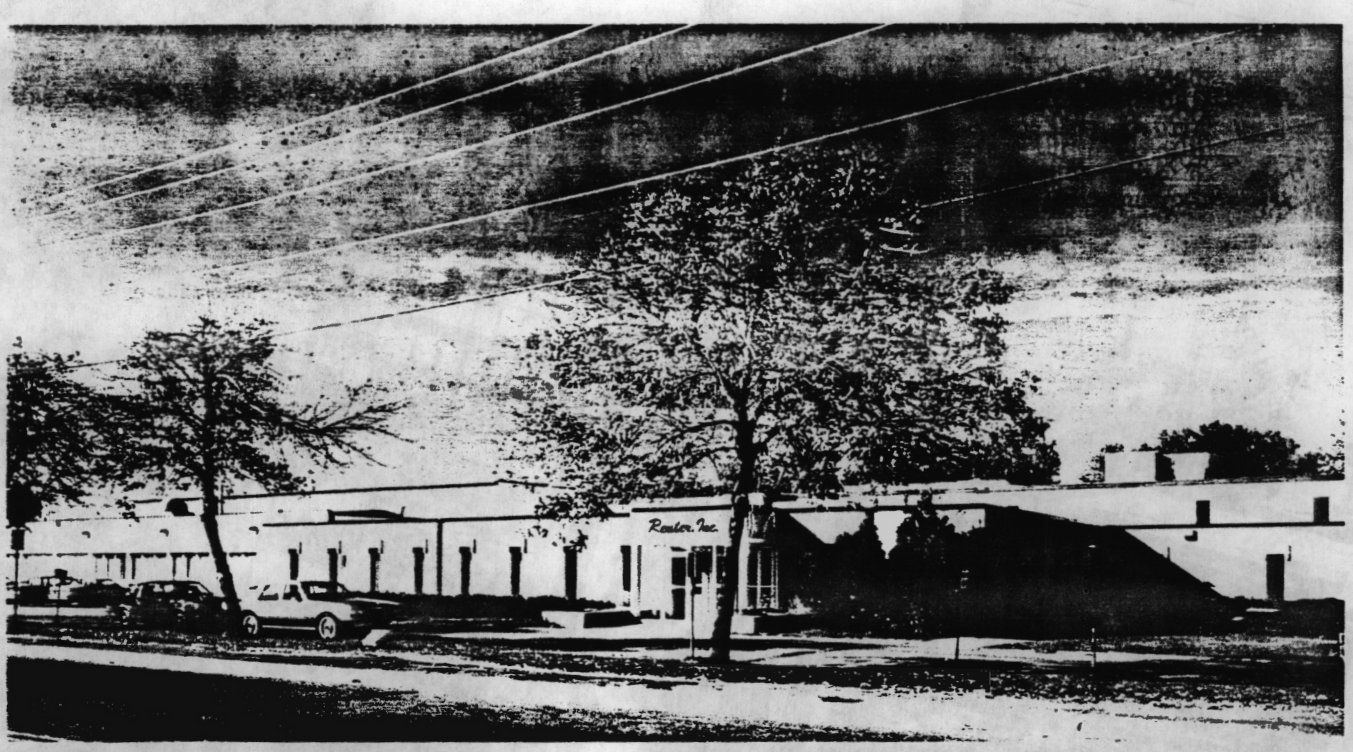
Mechanized Refuse Collection Containers

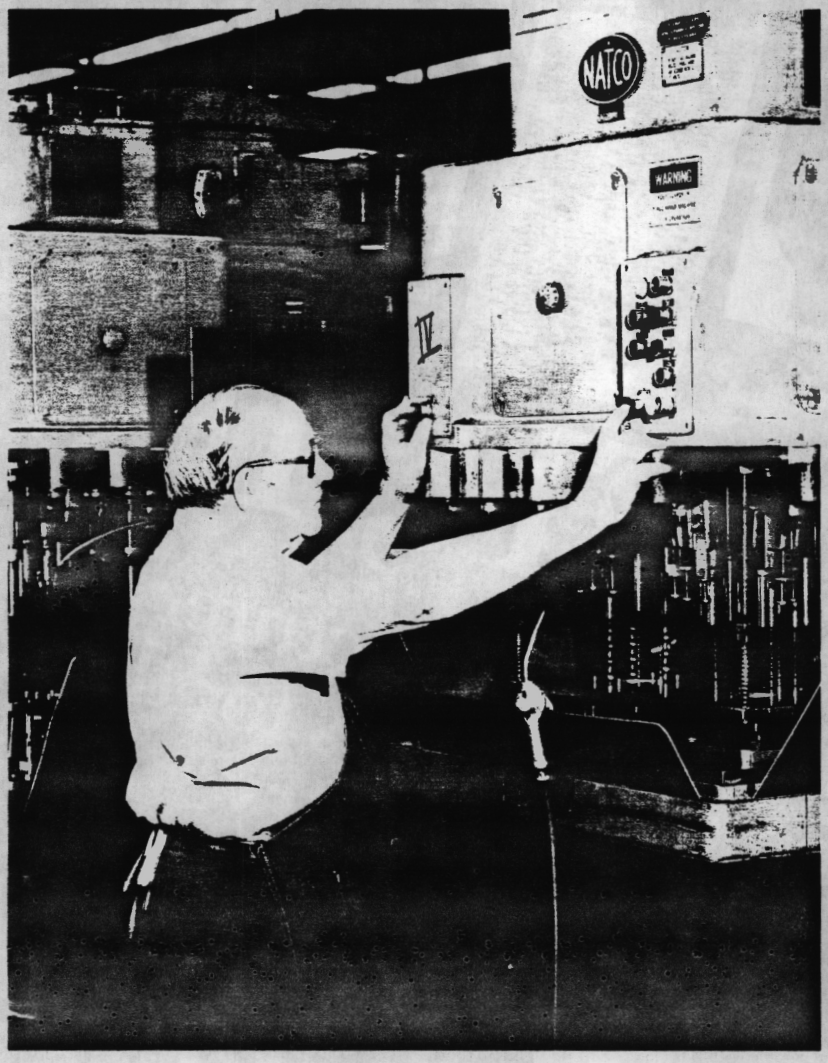


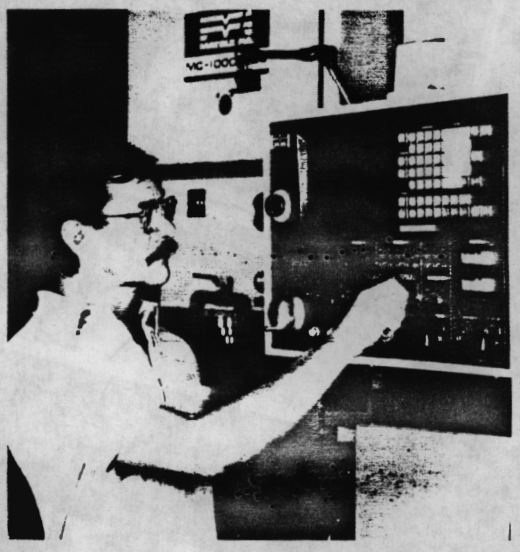
REUTER, INC.

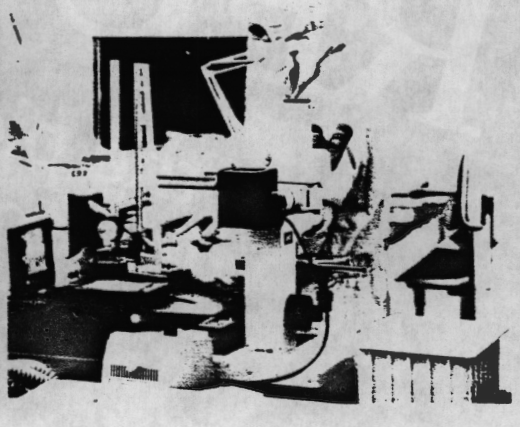
...the pioneer manufacturer of disk memory spindles for the computer industry

1003X









1004x



For over two decades, Reuter, Inc. has been recognized as a leader in the computer industry through its pioneering work in the engineering, development and manufacturing of disk memory drives. At the same time, the company has earned a national reputation as the primary source for computer disk pack drive spindles, vital components for optimum system operation.

Several factors have been responsible for this exceptional performance record. For one thing, we insist on heightened quality control as demonstrated by our ability to maintain critical tolerances as precise as twenty five millionths of an inch. Plus, our highly skilled personnel and our utilization of specialized equipment and facilities, including state of the art clean rooms, help us maintain our ranking as a reliable and quality conscious manufacturer.

And, there's one more important reason. At Reuter, we believe in on-going research and development. The information we receive from this effort keeps us on the cutting edge of technology and helps us to develop methods and equipment that result in significant cost savings for our customers.

In an effort to provide even better service, Reuter, Inc. recently added 40,000 square feet to our modern 70,000 square foot manufacturing facility in Hopkins, Minnesota. This much needed addition accommodates our third state-of-the-art clean room, more efficient manufacturing flow and a much needed expansion of our office and storage space.

We invite you to learn how you can benefit from our commitment to excellence.

William L. Johnson

William L. Johnson
Executive Vice
President

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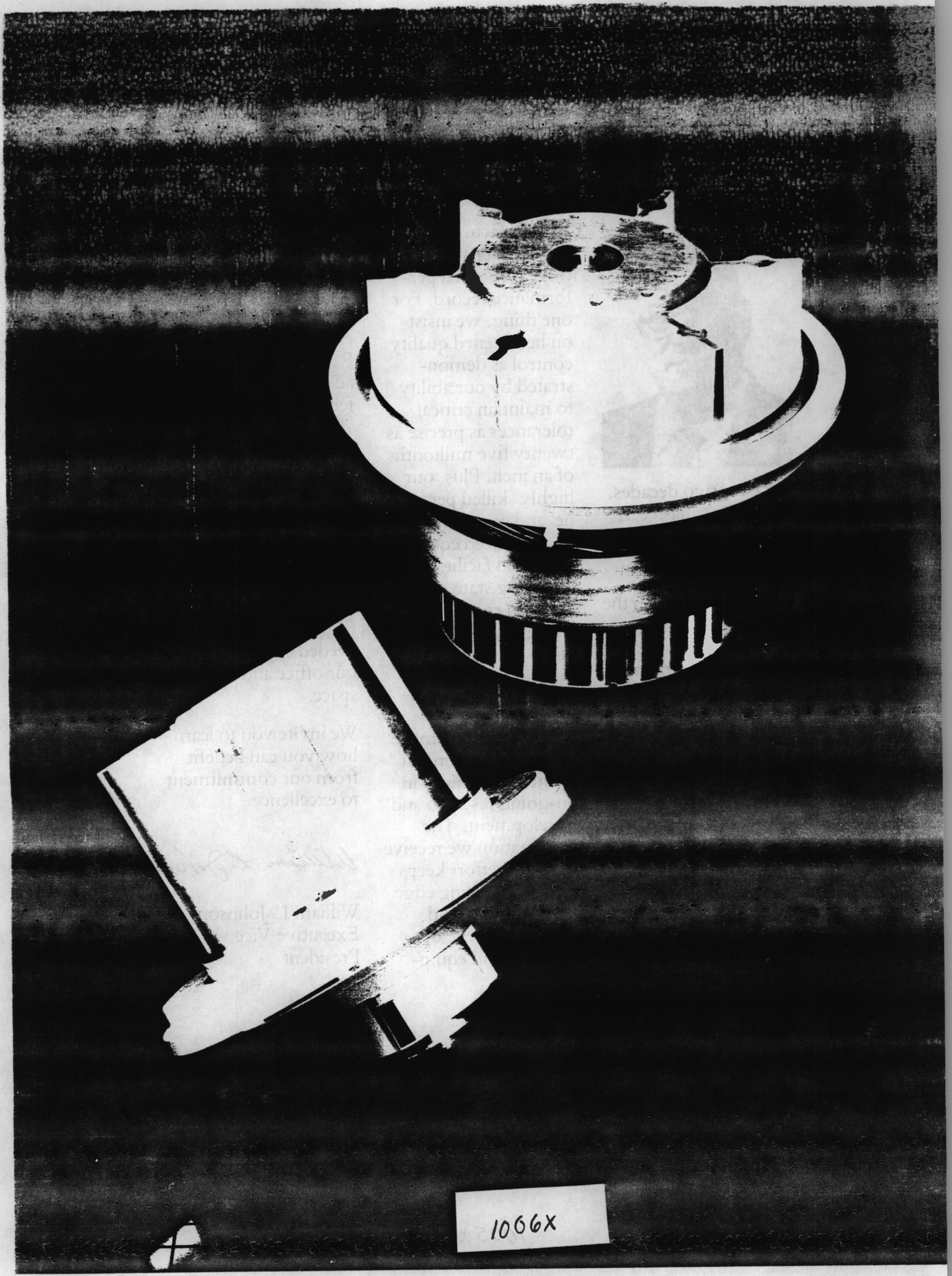
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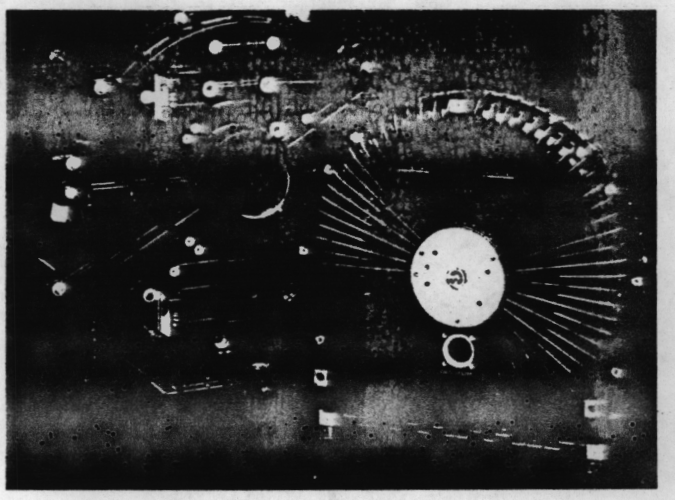


REUTER, INC.

...a tradition of quality service and dedication

It was back in December of 1948 when Edward J. Reuter opened the doors of his newly formed company in Minneapolis, Minnesota. Reuter insisted that, no matter what type of projects the small machine shop accepted, an emphasis on quality, reliability and customer satisfaction would always be maintained.

Reuter's first few years in business were spent manufacturing specially designed parts for missiles, airplanes and rockets, among other projects. Then, in the late sixties, business began to move in an entirely new direction.

Working closely with members of the fledgling computer industry, the company directed its resources towards perfecting precision machined spindles for computer disk memory packs. Employees were trained and facilities and equipment were carefully crafted to suit the needs of this innovative technology. The highly acclaimed Reuter disk pack drive spindle was born.

Since that time, the efforts of the company's hard working staff of machine shop professionals have resulted in an ever increasing pool of technological knowledge which Reuter, Inc. services its customers. And, all products are engineered and manufactured with the superior quality, dependability and outstanding performance that our customers have come to expect from the pioneer manufacturer of disk memory spindles.

1007X



1008X



Design engineering to fit your specific needs

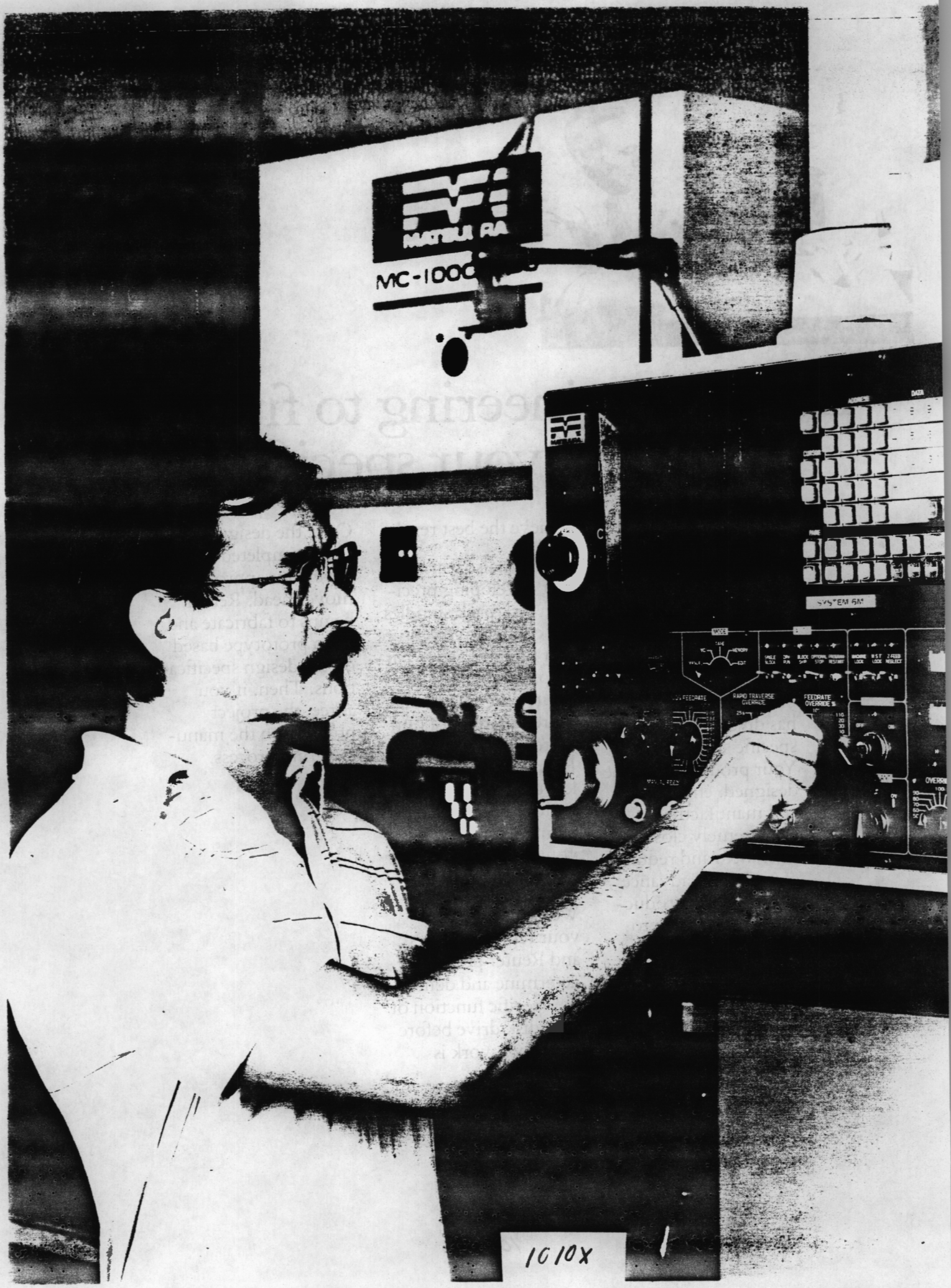
Nothing is more important to the people at Reuter, Inc. than meeting your needs, no matter how difficult the challenge may be. Over the years, we have learned that each one of our customers has diverse and very specific standards. Your products must be designed, engineered and manufactured to extremely close tolerances and require considerable advance planning and production coordination to achieve the best results.

We have also learned that developing precision disk pack spindles is a cooperative venture that requires active participation from both Reuter engineers and representatives of our customer companies. Every product that leaves our plant is custom designed and manufactured with your satisfaction as our ultimate goal.

Working together, your representatives and Reuter personnel determine and define the specific function of each disk drive before any other work is done.

Once the design has been completed and we have your approval to move ahead, Reuter begins to fabricate and test a prototype based on the design specifications. Then, if you agree, the project proceeds to the manufacturing process.

1009X


MC-1000
SYSTEM 6M
RAPID TRAVERSE OVERRIDE
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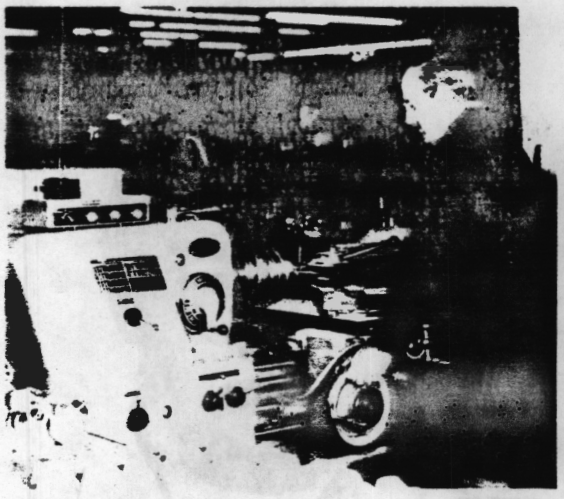

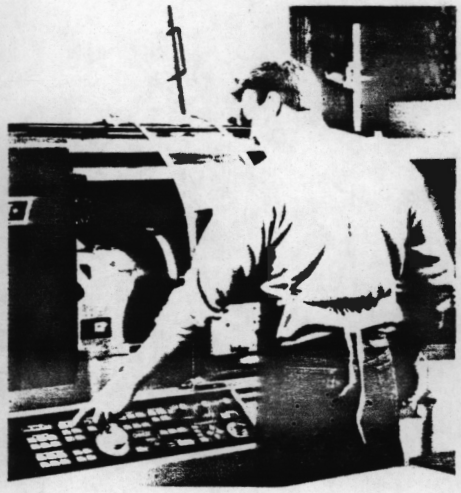

Skilled personnel guide each spindle through the manufacturing process

The machining, assembly and final precision finishing of close tolerance computer disk pack spindles is performed by Reuter employees who have been schooled in the latest methods required to meet your exacting standards. And, that's where our expertise is most evident.

In the early days of the computer industry, disk drive spindles were typically finished to within a few thousandths of an inch. Today, the tolerance of disk drives manufactured by Reuter, Inc. measure within twenty five millionths of an inch.

That's just one example of the technological expertise that has made Reuter, Inc. one of the nation's leaders in the disk memory pack field.

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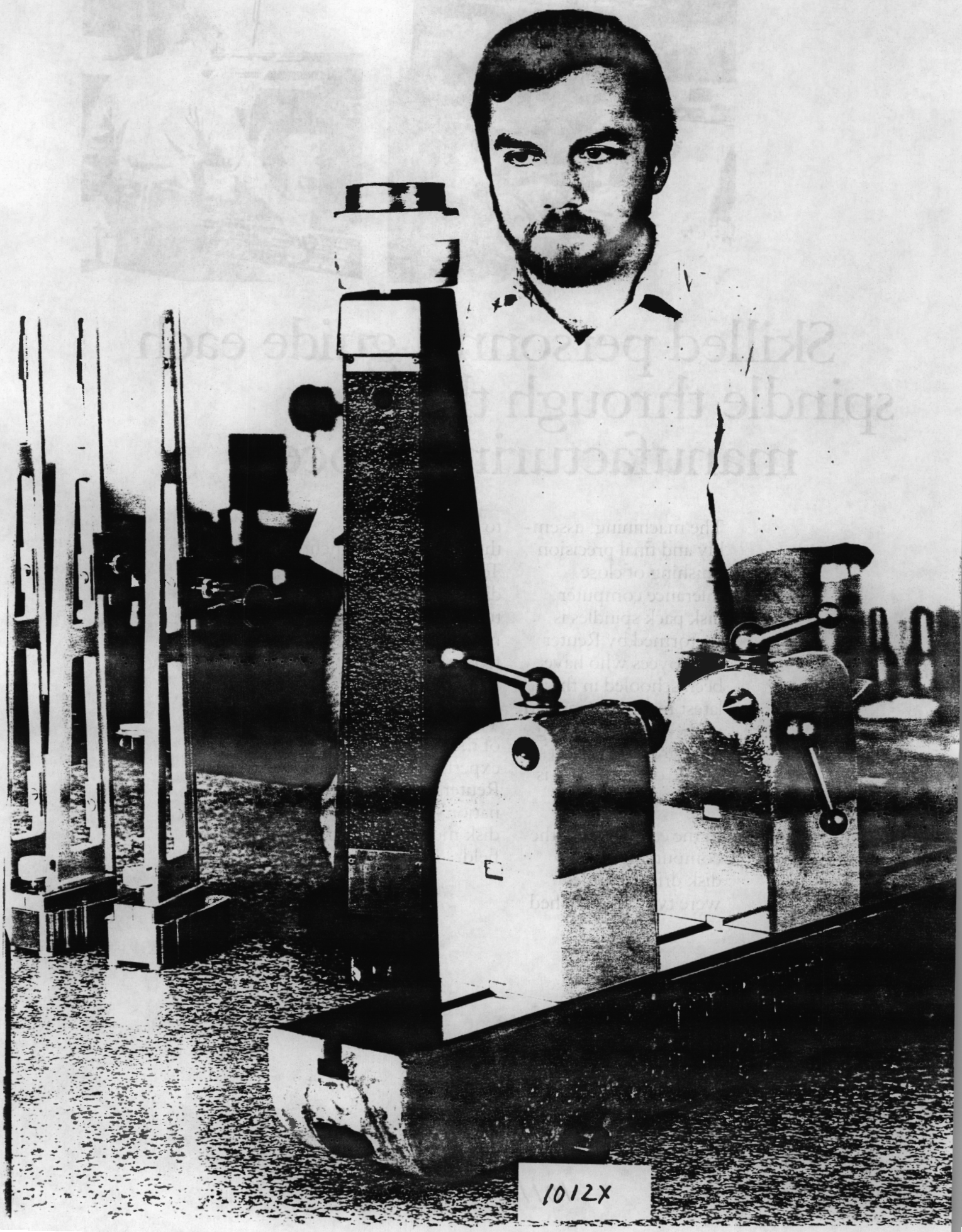
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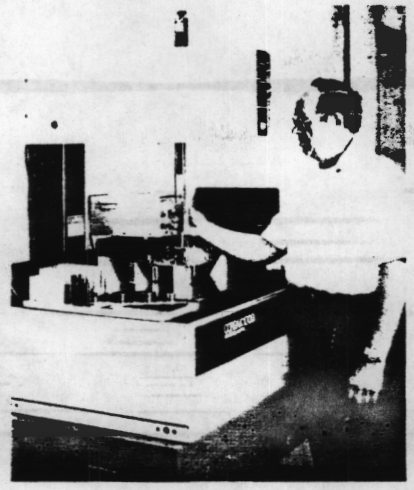
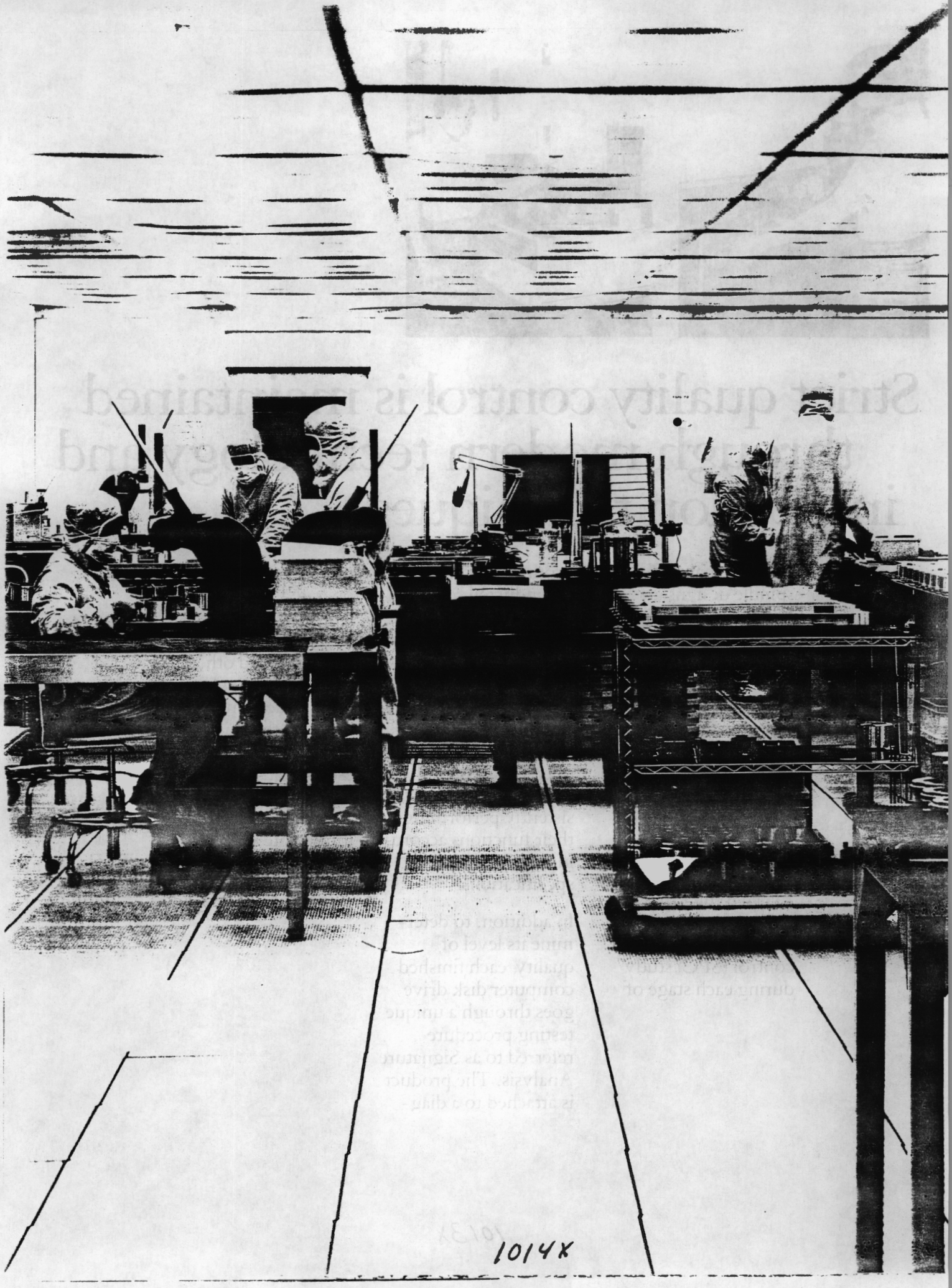


Strict quality control is maintained through modern technology and inspection techniques

Because many of the spindle designs at Reuter, Inc. require tolerances as precise as twenty five millionths of an inch, close attention must be paid to every phase of the manufacturing process to be sure that both equipment and employees are operating at optimum capacity.

Every Reuter disk drive spindle is subject to a statistical process control (SPC) study during each stage of production. This test is conducted by the employees responsible for the function in cooperation with a skilled SPC coordinator. The specific items to be studied are selected to assure that operators, assemblers and equipment are consistently performing their functions according to product specifications.

In addition, to determine its level of quality, each finished computer disk drive goes through a unique testing procedure referred to as Signature Analysis. The product is attached to a diagnostic computer and operated or "spun". Then, the computer analyzes bearing performance and other pertinent data which, in turn, determines whether the spindle is performing within established tolerances. If any problem arises, a solution is devised immediately before it has an opportunity to become a customer problem.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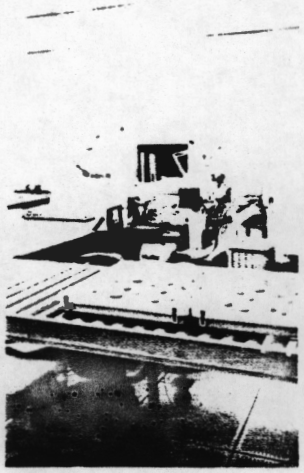


State-of-the-art clean room facilities assure precision finishing

All computer spindle finishing processes must be performed in a dust and dirt free environment to maintain the precision and extremely close tolerances required by modern computer technology. Minute particles that can't be seen by the unassisted human eye will do considerable damage to a memory disk if allowed to settle on its surface.

To be sure that its products always meet the highest quality standards, Reuter, Inc. has installed state-of-the-art class 100 clean rooms in its plant where final spindle assembly and testing take place. While the air in a normal manufacturing plant may contain as many as 1,000,000 or more dust particles per square foot, no more than 100 particles per square foot, measuring three micron in diameter, are present in these carefully controlled areas.

Each of the three class 100 clean rooms at Reuter is equipped with special tables, surface plates and all other necessary cleaning equipment as well as bearing run in stands and analyzing test equipment.

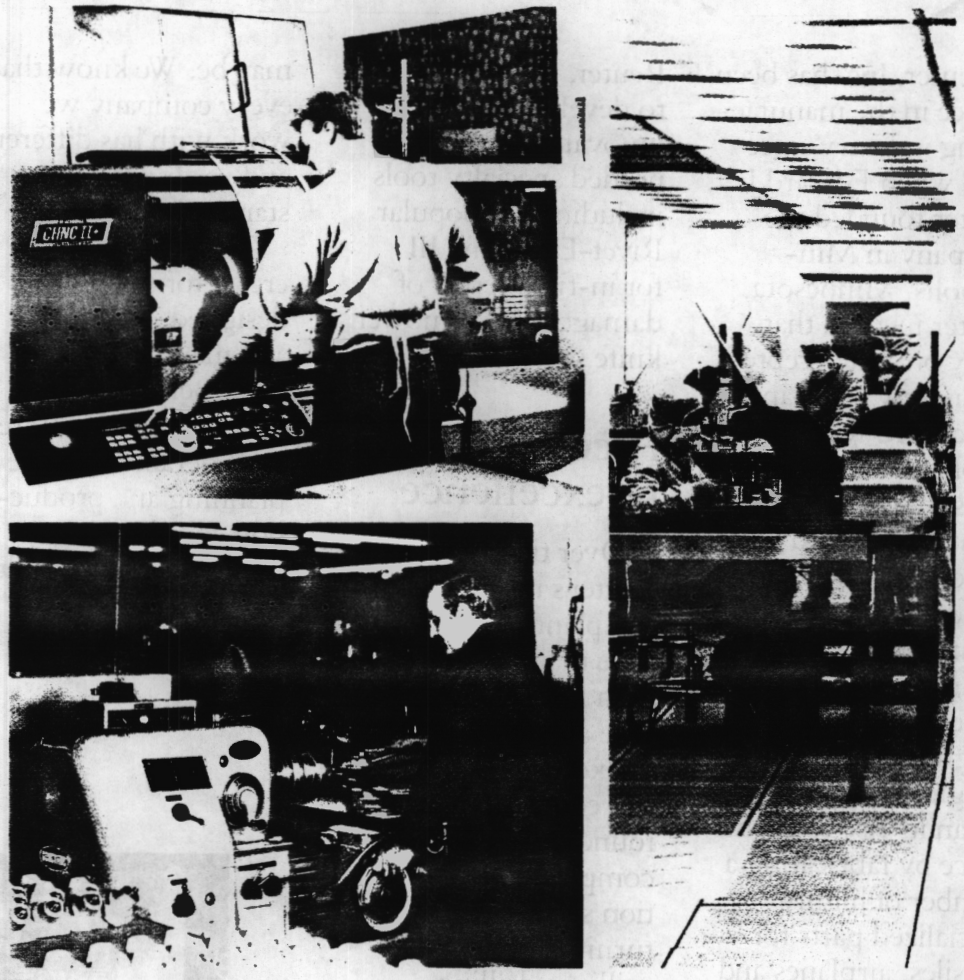
Spindle components are carefully tested and assembled by gowned and masked employees in this dust free environment. Then, they are sealed in static-free plastic bags which are packaged in specially designed containers after leaving the clean room. Finally, the completed spindles are placed on skids and shipped to the customer.

1015X



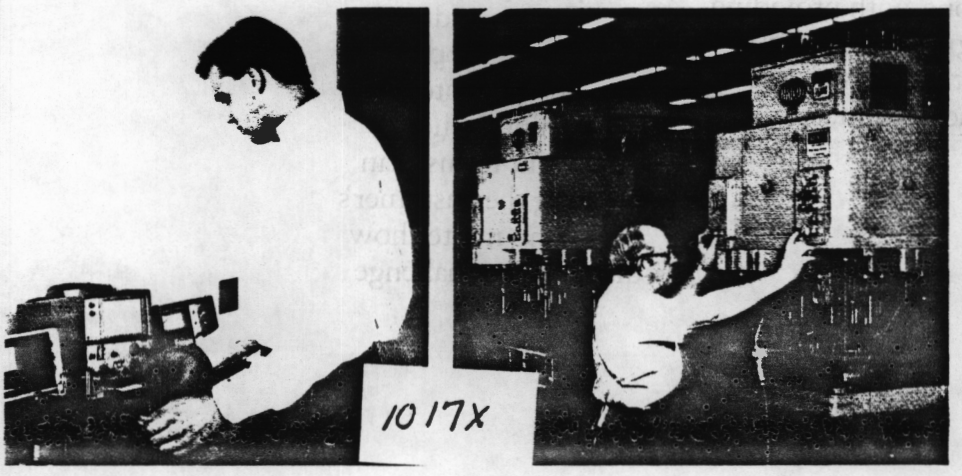
As technology moves forward, we at Reuter, Inc. are confident that we will continue to advance along with it and continue to provide reliable quality conscious and economical service to our customers. Our ability to maintain critical tolerances, our constant attention to detail and utilization of state-of-the-art equipment along with our skilled personnel will continue to work together to keep our company in its leadership position in the area of computer information storage technology.

10164



REUTER, INC.

...a recognized leader in the parts fabrication industry.



1017X

Quality, service and innovatio

Reuter, Inc. has been a force in the manufacturing industry since 1948 when Edward J. Reuter founded the company in Minneapolis, Minnesota. Reuter insisted that every project accepted by his new company, be handled with an emphasis on quality and service. He also strongly believed in the importance of research and development to secure a successful future.

Reuter's philosophy caught on and the fledgling machine shop began its rise to prominence by fabricating a number of highly specialized parts for missiles, airplanes and rockets.

Today, the company has grown into a multi-faceted operation with highly diverse divisions working with computer technology and waste management. But, we have not abandoned our roots in the machine shop industry. Along with providing engineering design and fabrication services to other manufacturers, Reuter, Inc. continues to develop and market innovative and much needed specialty tools including the popular Rivet-Eze II and III for in-field repair of damaged sickle mower knife sections.

A commitment to excellence

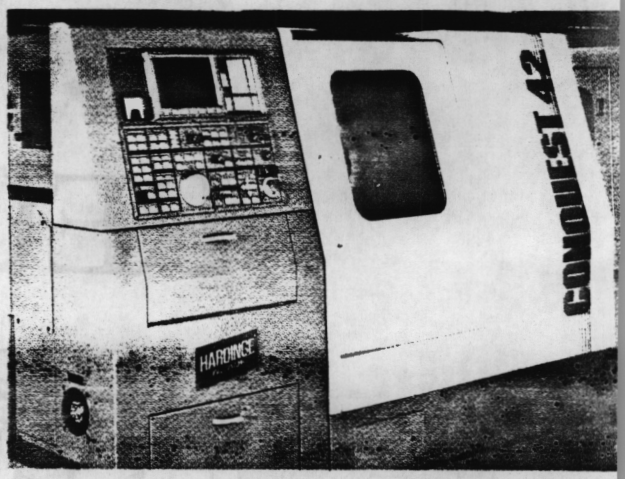
Over the years, Reuter's management and plant personnel have maintained the high level of performance and commitment to excellence on which our company was founded. We offer a complete parts fabrication service including turning, grinding, milling, drilling, assembly and more. And, we have worked hard to perfect the procedures, the technology and the expertise that have earned us such prestigious awards as The SBA National Small Subcontractor of the Year Award, various company performance certificates, and many computer corporation award certificates.

Nothing is more important for us than meeting the customer's needs–no matter how difficult the challenge may be. We know that every company we work with has different and very specific standards.

The products we create for you must be designed, engineered and manufactured to extremely close tolerances and require considerable advance planning and production coordination to achieve the best results.

Reuter design engineers work to satisfy your specific needs

Along with a staff of skilled management and tradespeople and a top quality manufacturing facility, Reuter, Inc. also offers the services of design engineers who will work with you to engineer any more highly specialized items you may need. These professionals will help you define your needs, determine specifications, and create and test a prototype.





1018X



State-of-the-art facilities include 3700 sq. ft. Class 100 Clean Rooms

Every square foot of air in an average manufacturing plant may contain as many as 1,000,000 dust particles so minute they cannot be seen by the unassisted human eye. These particles can do a great deal of damage if allowed to settle on the surface of the sensitive components we manufacture for the computer industry and other products that require strict attention to cleanliness.

To avoid this problem, Reuter, Inc. maintains three fully equipped class 100 "clean rooms" as part of its manufacturing plant. The Branson Robotic cleaned parts are then conveyed to the clean rooms where the air is carefully maintained for temperature and humidity consistency. The air in the clean rooms are kept virtually dust & dirt free with no more than 100 particles measuring three microns or more in diameter per square foot. The final testing and assembly of clean room parts is performed by gowned and masked employees, who then seal the parts in static free plastic bags for placement in specially designed containers and shipment to the customer.

Reuter clean rooms are equipped with up-to-date conveyors, test equipment, and appropriate tables, surface plates and all other necessary equipment. In addition, bearing run-in stands and analyzing test equipment are utilized.

. 1019X

helped shape Reuter's success.

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Throughout the
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·hich measures ball-
bearing assembly
performance and is performed in conjunction with a diagnostic computer.

In addition, important Statistical Process Control (SPC) studies are conducted at various stages of production to assure that Reuter's operators, assemblers and all of the manufacturing equipment are consistently functioning according to product specifications. If any problem should arise, it is solved immediately before it ever reaches the customer.

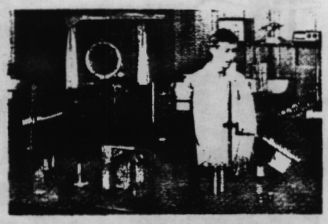
As a result of these and other technological advances in manufacturing systems, the Reuter plant is capable of routinely maintaining tolerances as critical as twenty five millionths (.000025) of an inch.

Customer satisfaction is our goal

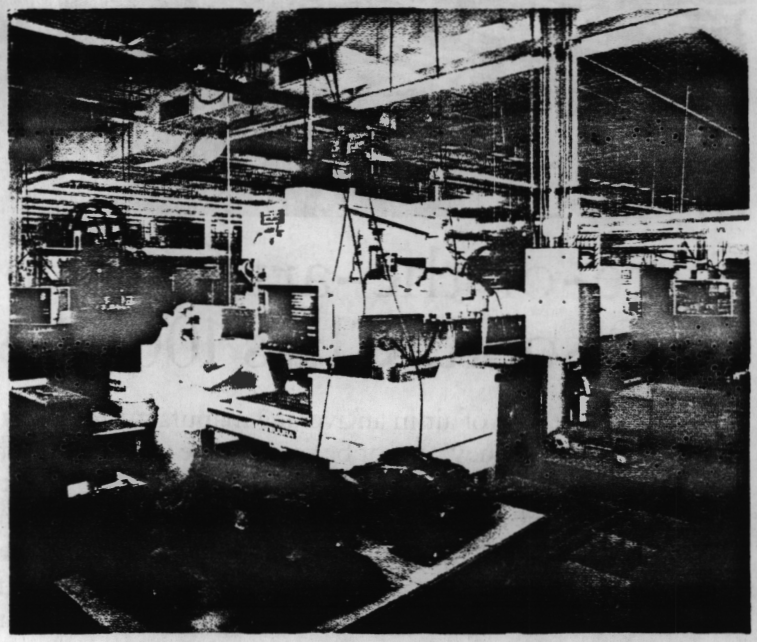
For over 40 years, Reuter, Inc. has practiced the philosophy of quality and service established by its founder, Edward J. Reuter.

We are confident that this attitude along with our ability to maintain critical tolerances, our attention to detail, and our utilization of skilled personnel and the latest equipment will help us continue to prosper and grow.

We invite you to grow along with us.







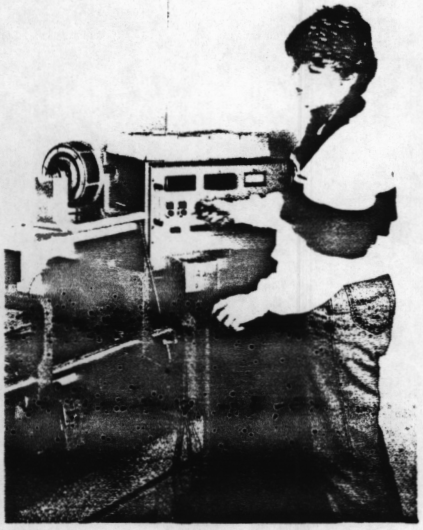
1020X

Modern equipment helps [illegible] the cutting edge of technology.

Along with utilizing our fully equipped clean rooms, Reuter, Inc. can also draw on the following equipment to complete the manufacturing of any product:

7 – CNC Turning Centers
2 – Pratt & Whitney Star Turns
2 – Hardinge Conquest #42 Slant Bed Chuckers
4 – Warner Swasey WS6 Turning Machines
2 – Hardinge CHNC Turning Centers

1 – Matsura #1500 30" × 60"
1 – Matsura #760V Twin Head Mach. Center
5 – Matsura #1000 Twin Head Mach. Centers



3 – Makino Horizontal and Vertical #2 Mills
9 – Bridgeport Vertical Mills
1 – Unimill Production Horizontal Mill
4 – Cincinnati Vertical Mills

[illegible] EQUIPMENT

3 – Moore Jig Bores #2

[illegible] EQUIPMENT

13 – Landis Universal Ext. Grinders 10" × 20"
1 – Cincinnati Centerless Grinder #2
2 – Jones & Shipman External Grinders 10" × 20"
1 – DoAll Surface Grinder 10" × 30"
1 – Elliott Surface Grinder 8" × 20"
2 – 18C Blanchard 47" Grinders
3 – Sunnen Hone Machines
1 – Cincinnati Tool and Cutter Grinder
2 – Monosette Tool & Cutter Grinders
1 – Ex-Cell-O Center Lapping Machine
1 – 24" Spitfire Lapping Machine

[illegible] AND TAPING EQUIPMENT

4 – Natco 24 Station Vertical Drill & Tapping Machines
6 – Clausing Multiple Head Drill & Tapping Machines
44 – Single Spindle Various Type Drill Presses
2 – Burgmaster-2BH Automatic Hydraulic Machines
2 – Auto Tapping Machines
2 – Drilling & Tapping Machines
1 – Elox Tap and Drill Removal Machine

[illegible]

2 – Greenerd 15 Ton Hydraulic Presses
1 – Hanifin 15 Ton Hydraulic Press
15 – Arbor Presses
2 – Hydraulic Straightening Presses

[illegible] EQUIPMENT

1 – Cordax #1808 M MEA
10 – Electronic Indicators
4 – Shenck Micro Balancers
1 – Optical Comparitor Jones & Lamson
20 – Dial Bore Gages
1 – Pratt & Whitney Super Micrometer
75 – Various Surface Plates
3 – Ade Electronic Test Stands
1 – Turbidity Tester
3 – Hewlet Packard Computers
1 – Rockwell Hardness Tester
10 – Pla-Chex Height Gages 6" × 18"
2 – Oscilloscopes
2 – Pratt & Whitney Visual Gages
2 – Bendix Profilometers

In addition, Reuter offers all of the necessary gage blocks, plug gaging and thread gages to allow us to inspect to very precise tolerances.

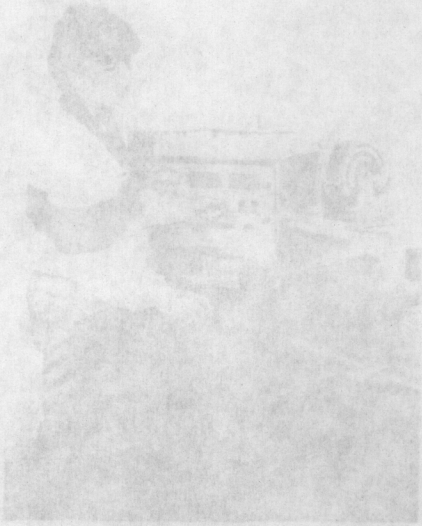
PLASTIC EQUIPMENT

1 – Springfield 300 Ton Structural Foam
1 – Blow Mold Battenfield 380#
1 – Lyman Vacuum Form
1 – Moore Vacuum Form
3 – Plastic Choppers
2 – Blenders

SAWING, SANDING AND LIFT TRUCKS

1 – DoAll Power Feed Autofeed Band Saw Model #70
3 – Band Saws
6 – Belt Sanders
4 – Power Fork Lift Trucks
1 – Warehouse Universal Fork Lift
4 – Hand Lift–2000# Trucks
3 – Air Compressors

Plus various Air Burr tools and fabricating equipment.



GARBAGE INCINERATION, THE D.E.P., AND YOU

The New Jersey Department of Environmental Protection is going full steam ahead with plans to build numerous garbage incinerators throughout the state. The garbage incinerator slated for Bergan County is in fact one of the world's largest. It is a monster that will eat 3000 tons of garbage a day, and spit out approximately 1000 tons a day of ash (up to 45% of which is toxic). Each year this much ash would cover a football field piled as high as a 25-story building. It will bellow into the air the other 2000 tons. That's right, as the DEP calls it, 2000 tons of "aerial garbage" each day. You see, a fundamental law of physics is that matter can neither be created nor destroyed; we can only change its form and composition: from ordinary garbage to toxic ash and poisonous gases. Incineration "gets rid of" our garbage by making us breathe it in our air, eat it in our food chain, and drink it through the ultimate contamination of our water supplies.

In 1983 the DEP put forth a monograph on the issue of air pollution entitled, "Needed: Clean Air." This is what they have to say:

The DEP says, "Polluted air **destroys our environment.** Dirty air may harm precious natural resources. It ruins crops, kills lakes and forests, and destroys livestock, fish and other wildlife. Long term exposure may devastate entire ecosystems."

The DEP says, "Polluted air **destroys our health.** Dirty air may cause sickness and even death. Children, pregnant woman, the aged and the ill are especially at risk from air pollution. Dozens of toxic chemicals emitted into the air are known to be potentially cancer-causing."

The DEP says, "Polluted air costs money -- due to high medical bills, lost work time, **decreased property values,** etc."

The DEP says, "Identifying the major sources of pollution is the first step toward cleaning up our air. **Solid waste incinerators emit significant amounts of particles, carbon monoxide, and hydrocarbons.**"

Let's take a quick look at what you may expect, as a minimum, in the way of air emissions **passing through** the pollution control equipment on a 3000 ton per day incinerator. And let's see what the DEP has said about each item.

1.	Particulates: 634,000 lbs/yr	The DEP comments: "Particulates. These include solid particles (soot and dust) or liquid droplets. Small particles may **carry poisons** into the lungs."
2.	Carbon Monoxide: 1,100,000 lbs/yr	The DEP comments: "This deadly colorless, odorless gas is...a special threat to **pregnant women** and people with **heart disease.**"
3.	Sulfur Dioxide: 2,000,000 lbs/yr	The DEP comments: "This poisonous gas...can contribute to coughs, colds, asthma, bronchitis, and emphysema. Mixed with other pollutants, it can be **fatal** to people who have **heart and lung diseases.**"
4.	Nitrogen Oxides: 5,500,000 lbs/yr	The DEP comments: "It can **lower a person's resistance** to pneumonia, flu, bronchitis, etc."
5.	Lead: 56,400 lbs/yr	The DEP comments: "Airborne lead is a serious health risk, especially to **children** and the **unborn.** It can damage the blood, nerves, kidneys, and reproductive and other systems."

Aside from lead, thousands of pounds of other toxic heavy metals will become airborne, including mercury, chromium, cadmium and arsenic. In their monograph, the DEP does not even mention **dioxin**. As stated by the US Environmental Protection Agency, dioxin is "**the most toxic chemical known to mankind.**" The US Food and Drug Administration has stated, "Dioxin is 100,000 to 1,000,000 times more potent than thalidomide in causing birth defects in laboratory animals. Dioxin causes miscarriages, birth defects, cancer, and death in lab animals at the lowest levels detected." Dioxin is the toxic contaminant in Agent Orange. A 3,000 ton per day incinerator will spew into the air up to 6 to 18 pounds of Dioxin a year. Keep in mind that if you feed a healthy guinea pig one billionth of his own weight in dioxin, he will roll over and die. If you feed a healthy carp (a very tough fish) 30 parts dioxin in a trillion, you will kill him. There are a trillion parts per trillion in one gram and 454 grams in one pound. A single shovelful of dioxin would render the whole of Lake Ontario contaminated and dangerous to human health.

In the face of other existing technologies, such as recycling and composting (already in use in Sussex County, for example) that cause none of these undesirable side effects, it would appear to be absolutely insane to use incineration as the chosen method of handling our garbage problem --- especially when it is **incompatible with recycling.** Then why, you may ask, is the DEP dragging us in this lethal direction? Perhaps it has something to do with the fact that the former DEP commissioner and his cohorts have taken high paying jobs in the incinerator industry. Pawning our lives and health, and those of our children and their children, so they can make their big bucks. Utterly outrageous.

The American Lung Association (The Christmas Seal people) "recommends that solid waste reduction, recycling, and the use of more environmentally benign disposal technologies such as composting be given priority over incineration as solutions to our nation's solid waste disposal problem. Resource recovery incineration plants are not an inherently safe solution to our nation's solid waste problem."

The US Environmental Protection Agency has emphasized, "municipal waste combustor emissions may reasonably be anticipated to contribute to the endangerment of public health and welfare."

In the words of the DEP: "Air pollution is not only a nuisance -- **it's a killer.** Protect your right to breathe clean air. Contact your representatives. Tell them you want government to improve and protect the quality of our air."

Incineration is insane-eration
Stop It.
Now.

Frank D. Livelli, Jr., M.D., F.A.C.C.
Associate Clinical Professor of Medicine
Columbia University

Bergen County Citizens Against Incineration

September 26, 1989

TESTIMONY TO THE ASSEMBLY COUNTY AND REGIONAL AUTHORITIES COMMITTEE

RE: ASSEMBLY BILL A-4105

SUBMITTED BY: Joseph Cardoni
Concerned Citizens of Morris County
P.O. Box 422
Flanders, N.J. 07836

I urge every N.J. legislator to support Assembly Bill #A-4105 calling for an 18 month moratorium on construction of Mass Burn incinerators. This period of time will allow for a study of the cumulative effect to health and the environment brought on by as many 18 burners. As important as this study will be, the 18 month period will afford us time to reevaluate the present solid waste philosophy which has incineration as its centerpiece.

I was encouraged by a Newark Star Ledger article this past Sunday which shows N.J. ranking 1st in the Nation in recycling. Greater efforts must be made to encourage non-burn technologies to vie for portions of the states waste stream. Three towns in South Jersey have achieved recycling totals of 50%. The town of Mt. Olive, where I live, has shown a decrease in solid waste tonnage to our Transfer Station from July 88' to July 89'. At the same time experiencing an increase in population. Mt. Olive officials tell us we are achieving recycling totals of 40% of our waste stream. Recycling can work if given a chance and a push.

In terms of a comprehensive approach to county disposal options, I submit a review of 2 proposals before Morris County's Chosen Board of Freeholders. A 1340 TPD (tons per day) Mass Burn Incinerator and a material recovery process using an Italian process known as the Sorain-Ceccini Process.

I will present a comparison of the two methods with regard to cost, tonnage processed and other considerations.

COST
INCINERATION: $148 million initial capital investment at todays cost. Add to that an 8% annual cost increase, an $8 million annual operating cost, add the cost of an ash landfill ± $50 million, plus the cost to transport ash to landfill, and, unknown repairs and maintenance costs for site improvements. (ie: roads, retention ponds etc.)
We are looking at a project with a capital cost approaching $300 million to the county taxpayers.
SORAIN-CECCINI: $80 million for a facility to process the equivalent flow of waste.

TIPPING FEE
INCINERATION: $100-120 per ton + adjustments.
SORAIN-CECCINI: $70 per ton + annual increase on Consumer Price Index.

1025X

LAND REQUIRED
INCINERATION: 115 acres
SORAIN-CECCINI: 8 acres

WATER CONSUMPTION
INCINERATION: 144,000 GPD (gallons per day)
SORAIN-CECCINI: 22,000 GPD

The Sorain-Ceccini process will reduce Morris County solid waste 92% by volume through an integration of 3 stages of separation and classification.

STAGE 1
MATERIAL RECOVERY: Separation and recovery of plastics, metals, glass and cardboard. Each item is isolated and converted to a raw material form which can be sold to product manufacturer.

STAGE 2
COMPOSTING: Organic materials and food waste are converted to topsoil or humus in an in-house accelerated process (28 days).

STAGE 3
REFUSE DERIVED FUEL: Paper and textiles are separated, compressed and shredded into fuel flakes. This fuel is dry and is easily stored and transported. It could be purchased by cement kilns or any boiler burning pulverized coal or oil and burned in a retrofitted boiler. The fractional remainder of waste that is not processed or bypassed is then landfilled.

The company making the proposal has offered to design, permit and construct the facility at no cost to the county and guarantee the handling of waste from drop-off to landfill. The only cost incurred would be the $70 per ton tipping fee.

The system is adaptable to changes in the waste flow with respect to volume and content. Unlike incineration where it is mandatory to maintain high levels of garbage to be burned, the Sorain-Ceccini process will allow municipalities to continue to pursue recycling efforts. This affords them reduced tipping fees through reduction in tonnage, as well as increased revenues from the sale of recyclables.

This process is but one of many that are emerging as an alternative to incineration. For 200 years this country has been blessed with an abundance of natural resources and land to bury them in after one use. The Laws of Supply and Demand are now making it profitable for industry to develop new technologies for recycling resources and reducing dependence on landfills.

Incineration will shut the door on recycling alternatives by committing our resources from landfills to a fire.

TESTIMONY REGARDING ASSEMBLY BILL 4105, Moritorium on the Construction of Garbage Incinerators, September 26, 1989.

My name is Al Franklin. I live at 330 Van Houten Avenue in the City of Passiac and am speaking to this issue as a member on the Board of Directors of the United Passaic Organization (UPO).

From the very beginning the UPO has been against the construction of these so called Resource Recovery Facilities, which herein shall be referred to as "incinerators". The reasons for not having it in Passaic were valid to all except those who really mattered, namely the Passaic County Freeholders, the Dept. of Environmental Protection, the Department of Transportation,the Courts, the Governor, and the Mayor of Passaic. The overriding reason for having the incinerator here was political expediency, and nothing more. Since it was their opinion that the least concerned, the least informed, and the least say in the matter could be expected from the residents of Passaic and its neighbors.

Besides, political expediency, the money making potential for the city of Passaic was also given as a reason, which we know now is invalid as we have experienced in Warren County. Also, according to a study, the main source of combustibles is paper and paper products, which we hope to elimninate by recycling. This means that plastics with its toxic gasses and solids will be more concentrated and the desired furnace temperature of between 1700 degrees and 1800 degree for maximum efficiency will not be reached. Result, more toxic gas to eliminate than expected and more concentrated toxic material in the ash, making it hazardous, and its disposal much more expensive (Warren County) than anticipated.

Obviously, when the Governor and the Courts "decreed" that there must be an incinerator for each county and the Board of Freeholders for each county will decide the best place based on the Dept of Environmental of Protection's recommendations, the incinerator was thought to be the only solution to a waste problem that, like the Savings Banks, we knew was coming over 10 years ago. Without taking into consideration, the population density, schools, churches, hospitals, location, traffic, and accessibility, Passaic was chosen, though fourth on the list of possibilities as recommended by the DEP. When in a suit in the court it was borne out there was no plan for accessing the Incinerator a heretofore unpublicised agreement of intent with the DOT and moneys from the State ($10 million) to access it temporarily came to be. That should have been enough to show illegality in chosing the site in Passaic.

There was not much forethought in the Court's decree about incinerators. This bill gives us all a chance to rethink the court's decision about the incinerators: their location, how to make them more efficient and economical, if and where needed and how recycling can be made more effective. This thinking should have taken place a long time before this decision was made so that four incinerators would not have been proposed within 10 miles of each other, and as found in Passaic, no consideration of proximity to a hospital, several churches, two

schools, two businesses(eliminated),residential property(10 houses eliminated), and a dense population with limited housing. All of these factors should recognized before the location or building of the incinerator be even considered.

The importance of having a solution that the State can live by, and not create more econmomic and social problems, makes this bill most necessary to obtain some thought about the best way to dispose of the State's waste.

Draft #3

ASSEMBLYMAN ROMA'S OPENING REMARKS

BEFORE THE COUNTY GOVERNMENT AND REGIONAL AUTHORITIES COMMITTEE

September 26, 1989

New Jersey is at a crossroads in deciding which direction it will choose to resolve its garbage situation. For the past few years, our Department of Environmental Protection has been encouraging counties to plan, construct and operate mass burn incinerators as the preferred method of reducing the amount of trash in the waste stream, which ultimately must find its way into our ever-diminishing landfill space.

As this policy of mass burn was promoted by the DEP, we may have shortchanged other technologies in our rush to resolve our garbage crisis by embracing incineration at any cost. Certainly it is apparent to all that the DEP, once it decided that mass burning of garbage was its preferred method of trash management, devoted almost all of its resources into encouraging counties to follow that pathway. But is this route the best road for New Jersey to follow?

Assemblyman Roma's comments/1

As the most urbanized state in the nation, New Jersey is often on the cutting edge of historically significant social or technological changes. New Jersey has a long list of "firsts." Fortunately most of those innovative "firsts" have given residents a better quality of life. We must assure that we continue in a positive direction.

Because the construction of a mass burn incinerator is so costly we should carefully review if the taxpayers are getting their money's worth out of such a long-term proposal.

Due to the public's willingness to actively participate in the state wide mandatory recycling law, we should review its successes as well as the market's ability to reuse our recycled items. Some suggest that recycling will have limited appeal, as the market is not in place to take the results of our efforts, and so other options, such as mass burn offer the only hope for reducing the trash steam.

Others suggest that recycling will work better than anticipated as new markets are formed and we will reduce estimated tonnage of garbage which would be used to feed the incinerators. Evidence of the garbage shortfall now exists with our one county incinerator now on-line in Warren County.

Assemblyman Roma's comments/2

If so, do we downsize our incinerator plans or will future growth during the construction phase make up the shortfalls caused by recycling?

Still others claim that stack emissions, even with the most advanced scrubbers, will still emit carcinogens into the environment. What can we expect to occur with our air quality if 20 of these incinerators are ultimately built? We are not in compliance with federal clean air standards today. Can we burn thousands of tons of garbage each day a few years from now and still improve our clean air standards to meet tough federal levels?

Others suggest we consider regionalization of mass burners. Instead of every county having its own incinerator, counties should be encouraged to form regional partnerships. How would this work? Which county would host the burner and which county would pay to have its trash burned at an out-of-county site? And who decides that? Should the people have a voice in such a decision?

Other options reviewed but initially rejected by the DEP, including extensive recycling and composting, may require a second look.

Assemblyman Roma's comments/3

Plastics recycling, unheard of during the initial DEP decision making process a few years ago, is making new progress and gaining increased use even as we meet.

As with any option to our monumental problem of disposing of the 14 pounds a day of trash each one of us in New Jersey generates, source separation is key.

Do other options to mass burning of garbage offer a quicker and surer method of separating the good, recyclable garbage from the construction debris, old refrigerators and other difficult-to-get rid of garbage and still leave enough burnable trash to efficiently operate a mass burn incinerator?

Can New Jersey afford at this time to delay moving ahead with the DEP's plan for mass burning of garbage and study alternatives for the 1990s not available during the 1980s? Or can't we afford not to, when we consider that our decision today will affect the lives of our children and their children.

Assemblyman Roma's comments/4

Garbage is big business in New Jersey and unfortunately is one of our biggest exports. We must resolve this problem ourselves. It must be a wise decision; it must be a far reaching decision. It will be a difficult decision. But decide it we must, and that is the purpose of this meeting today.

#####

Testimony to the Assembly Committee

on County Government and Regional Authorities

September 26, 1989

My name is Rose Slovis. I serve on the Board of Directors of the United Passaic Organization representing the National Council of Jewish Women and Temple Emanuel of Passaic. I am testifying on behalf of United Passaic tonight to urge this committee to vote for Assembly Bill 4105 to be released out of committee.

Our state desperately needs a moratorium and a careful study of the risks associated with incineration as compared with newer garbage disposal technologies. Lets look at some of the vital concerns a study would address:

CUMULATIVE EFFECTS: We have all seen the map of the 19 proposed incinerators in New Jersey— Add to that the dozen or more planned in New York. Yet Environmental Impact Statements only look at particular sites. It is time that we look carefully at the whole picture.

CANCER: New Jersey already ranks fourth in the nation for deaths due to cancer. This is frightening. What effect will 19 incinerators have on the health of our families? We need to investigate! In Warren County, New Jersey's only operating incinerator, the plant is estimated to emit 1,363 tons per year of nitrogen oxide, a pollutant that contributes to ozone depletion and acid rain. This at a time when New Jersey is

already in violation of federal ozone standards.

Further, in Warren County, high levels of cadmium and lead were discovered in 54% of the ash residue, forcing the county to pay four times higher than anticipated landfill costs since the ash must be sold to toxic waste landfills.

RECYCLING: New Jersey has mandated 25% recycling. But incinerators often discourage recycling - requiring more garbage to be burnt to make them economically viable. Again, we have an example to study in our own state in Warren County.

TAXES: The incinerators which have been built, and even those in the planning stages are costing drastically more than projected. We were told in Passaic originally that the incinerator would save us taxes. Then we were told that even with the landfilling costs of trucking our garbage to Pennsylvania, we will perhaps break even with an incinerator. Now, the federal Environmental Protection Agency has pulled the Air Quality Permit on the Passaic incinerator because the plans will not enable it to meet federal clean air standards. And now, the Passaic Incinerator is anticipated to cost an additional 7 million dollars on top of a current 180 million dollar price tag.

Fewer that 70 mass burn incinerators are operating nationwide. A partial list issued by the Institute for Self Reliance documents 16 cases where government officials reversed earlier decisions to construct incinerators. This is no wonder when incinerators nationwide have experienced mechanical failures that have caused 720 million dollars worth of plants to be

closed.

ALTERNATIVES TO INCINERATION: It is clear that we must look at the alternatives to incineration now being utilized in countries and states that have built incinerators and have seen the consequences. For example, "Serrain Cecchini" technology is now being implemented throughout Europe as well as in our own state of Minnesota after that states review of numerous options. I understand that this technology recycles without source separation.

Committee members, you have heard and will hear countless compelling arguments today as to why a moratorium and study is urgent. You have heard and will hear from incinerator companies whose primary interest is their pocket books, pressuring you to forego this legislation. I have tried not to focus my remarks on the particulars of the Passaic incinerator where I live. However, in closing, I would ask that you consider this. In our city the proposed incinerator is right accross the street from an elementary school where 800 children attend each year. It is right next to a major hospital. All we are asking you to do tonight is to stand with us and look squarely at what our future holds in store for these children, these patients, and for all of us, before its too late. Vote for Assembly Bill 4105 to be released out of committee and you will be insuring a better future for every citizen in our state. Thank you.

1036X

New Jersey State Library

Cecilia G. Laureys
#9 Flanders Drive
Netcong, NJ 07857

Statement for Public Hearing September 26, 1989

As a member of the Netcong Boro Council, the Enviromental Commission and a volunteer Recycling Coordinator, I am very much in favor of a moratorium on Incineration.

I'd like to point out the fact that there is presently only one mandated solid waste plan in the state of New Jersey. The N.J. recycling law was passed in April 1987. For some strange reason, despite an enormous solid waste disposal problem, the full implementation of the law was delayed until April 1989 (2Years Later). 1989 is now here, yet many communities and commercial establishments have hardly begun to put anything but minimal efforts into recycling.

Incinerator plans call for incineration of non-recyclable trash, but what they really mean is incineration of non-recycled trash. It makes little sense to consider very costly, environmentally risky incineration solutions before N.J. has given recycling a fair chance.

We need to find viable methods and markets for recycles -- especially plastics! We need to develop methods to collect and remove household hazardous wastes from the waste stream (i.e. batteries, aresols, cleaners etc.).

At present, the nation's waste stream is estimated to consist of approximately: 35.5% paper; 8.5% glass; 9% metals; 7%plastics; 20% yard waste; 9% food waste; 9% rubber, leather, textiles and wood. The total amount of these recyclable materials is 98%, which leaves only 2% inorganic, non-recyclable materials in the waste stream.

Real efforts must be made to separate, recycle and compost much more -- to reuse rather than burn or bury natural resources. Only after such efforts can we make a realistic assessment of how to dispose of the balance. Incineration only reduces 75% by weight (note: the 90% by volume includes the space inside plastics etc.). If we recycled 70-or 80% it would be much more cost effective to landfill the remaining 20-or 30%. Incineration should be only a last resort. Not a first choice! Very few incinerators, or possibly none at all, should be built. If a small percent of the money and resources that have been pledged to incineration were diverted to improving recycling methods and markets, the need to incinerate could be removed.

1037X

The state has yet to put teeth into the Recycling Law. Haulers and Transfer Stations are still not being fined for accepting trash loads full of recycles! People need to make personal commitments to recycle as much as possible. Real leadership is needed!

It is very hard to believe that a town like Morristown, with a population of 17,000, totaled only 571 tons of residential recycles in 1988. This compared to Netcong, a town of only 3500 people with very little money and resources, which totaled 455 tons of residential recycles. Likewise, Morristown, with all its commercial units, totaled only 474 tons of commercial recycles in 1988 as compared to Netcong's 300 tons of commercial recycles.

Such figures clearly show that Recycling, which is mandated by law, needs to be vastly improved before procceding to even consider very costly incinerators, which will have a detrimental effect on the environment.

NEW JERSEY ACT

New Jersey for A Clean Tomorrow

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Edison, New Jersey 08818
201-225-1180
FAX 201-225-4694

NJ ACT SUPPORTERS
Associated General Contractors — New Jersey Chapter
Association of New Jersey Recyclers
Chemical Industry Council of New Jersey
Construction and General Laborers' Local 172 of South Jersey
Consulting Engineers Council
Glass Recycling Association of New Jersey
Heavy and General Construction Laborers' Local 472
International Union of Operating Engineers Local 68
International Union of Operating Engineers Local 825
Land Improvement Contractors Association
Monmouth Ocean Development Council
National Electrical Contractors Association
National Solid Wastes Management Association — New Jersey Chapter
New Jersey Alliance for Action
New Jersey Asphalt Pavement Association
New Jersey Association of Counties
New Jersey Association of Realtors
New Jersey Builders Association
New Jersey Business & Industry Association
New Jersey Federation of Planning Officials
New Jersey Food Council
New Jersey Industrial Development Association
New Jersey Institute of Technology
New Jersey Recycling Forum
New Jersey Section — American Society of Civil Engineers
New Jersey Society for Environmental, Economic Development
New Jersey Society of Municipal Engineers
New Jersey Society of Professional Engineers
New Jersey State Chamber of Commerce
Southern New Jersey Development Council
Utility and Transportation Contractors Association
Waste Management Association of New Jersey

Statement of
Philip Beachem
Secretary
New Jersey for A Clean Tomorrow
(New Jersey ACT)

on
Assembly Bill 4105

Presented to
Assembly County Government
and
Regional Authorities Committee

September 26, 1989
Hackensack, New Jersey

1039x

Printed on recycled paper

Mr. Chairman, Members of the Committee, Assemblymen Rocco and Pascrell: My name is Philip Beachem and I serve as Secretary of New Jersey for A Clean Tomorrow.

New Jersey ACT is a non-profit educational organization comprised of leaders from business, industry, academia, professional, civic, labor and recycling organizations. New Jersey ACT was formed over one-year ago to educate New Jersey residents and elected officials about the solid waste problem and its solution--a comprehensive, four-pronged strategy for managing the 11 million tons of solid waste produced each year by the people and businesses of this state. This strategy includes: source reduction; intensive recycling; resource recovery incineration; and, the use of modern, lined landfills.

Let me get right to the point of this testimony.

A-4105's one-year moratorium on permitting resource recovery facilities is inappropriate and fails to recognize the fact that New Jersey faces a solid waste disposal crisis today. We do not have the luxury of putting everything "on hold" for a year.

Resource recovery incineration is a tested and proven technology which has evolved over the past several decades. The technology of incineration, as well as those of emission control and ash management, continue to evolve and provide greater protection to public health and the environment. Resource recovery incineration, when properly implemented as one strategic component of a comprehensive solid waste management program, presents no unreasonable risk to the people of New Jersey.

The people of New Jersey have valid questions regarding the technologies of comprehensive solid waste management, including resource recovery incineration. New Jersey ACT wants to work with state and county officials, scientists and physicians to provide answers to these questions.

The risk that we in New Jersey face is in doing nothing. Inaction will result in severe environmental and economic damage to each of New Jersey's solid waste districts--and all of New Jersey.

A comprehensive solid waste management strategy will help to reduce, reuse and permanently dispose of the solid waste generated in New Jersey.

This strategy will help New Jersey to be self-sufficient in solid waste disposal by the target date of 1992. Today, New Jersey doesn't have the capability of disposing of all of this waste. Consequently, more than 15,000 tons of garbage on average are shipped out-of-state for disposal every day to states like Ohio and Pennsylvania. This equals more than six million tons each year, or about 55% of all the solid waste generated in New Jersey.

Both of these states are aggressively moving to stop New Jersey's waste from entering their borders. I will submit a series of news articles outlining actions taken by these states against New Jersey.

A one-year moratorium would do nothing to alleviate New Jersey's crisis, it would only serve to escalate the crisis. It would serve to penalize those counties that have worked so diligently in recent years and months to provide environmentally- and economically-safe and sound solid waste disposal for their residents that will stretch well into the next century.

New Jersey ACT will gladly work with the next administration in Trenton, and all county officials, to provide technical and scientific facts on all aspects of comprehensive solid waste management in order to keep New Jersey on a course for self-sufficiency by 1992.

But, we can not support legislation which would detrimentally effect these efforts.

As part of its efforts to provide factual information on these complex issues, New Jersey ACT has established a Technical Advisory Panel under the direction of Dr. Richard Magee, Executive Director of the Hazardous Substance Management Research Center at the New Jersey Institute of Technology. This panel of scientists and a physician are developing technical papers on the issues of solid waste management.

I will enter with my testimony the first of this series of Environmental Issues Papers. As the papers on dioxin, ash management and health risk assessments are completed over the next few weeks, they will be forwarded to the committee.

New Jersey ACT strongly believes that resource recovery facilities are necessary today. And, as indicated by thousands of hours of operating experience throughout the world, and right here in New Jersey; and, by research conducted by scientists at the New Jersey Institute of Technology, Rutgers University and many other institutions, they are safe.

A moratorium that would, in effect, bring viable, responsible solutions to our solid waste crisis to a complete stop, is ill-timed and ill-advised.

Mr. Chairman and members of this committee, any delay in moving forward with one of the key components of a comprehensive solid waste management strategy means that our state will be that much further away from solving its most pressing environmental problem--the need to provide for in-state disposal of the more than 11,000,000 tons of garbage generated annually by its residents and businesses.

Thank you.

# # #

1042x

Statement to -

County Government and Regional Authorities Committee

Hearings on Assembly Bill A-4105

September 26, 1989

County Court House

Bergen County

Rhoda Schermer

225 Highland Avenue

Ridgewood, New Jersey

Spokesperson for - Beth Israel Hospital

Passaic, New Jersey

1064X

I AM REPRESENTING MYSELF AS A RESIDENT OF RIDGEWOOD (BERGEN COUNTY) CONCERNED ABOUT AIR QUALITY, HEALTH AND SAFETY FACTORS EFFECTING MYSELF, MY NEIGHBORS, AND RESIDENTS OF NEW JERSEY.

I AM ALSO SPEAKING AS A MEMBER OF THE RIDGEWOOD PLANNING BOARD WHERE I AM INCREASINGLY EXPOSED TO CONCERNS BY TAXPAYERS FOR POORLY PLANNED PROJECTS THAT END UP EITHER WASTING SCARCE DOLLARS OR FOR PROJECTS THAT END UP HAVING TO BE BAILED OUT BY INCREASED TAXES.

I AM ALSO AN ADMINISTRATOR AT BETH ISRAEL HOSPITAL IN PASSAIC NEXT TO WHICH IS PROPOSED ONE OF THESE MASS BURN FURNACES.

MY PURPOSE IN BEING HERE IS TO SEEK PASSAGE OF A-4105. THE TAXPAYERS OF NEW JERSEY REQUIRE A MORATORIUM ON IMPLEMENTATION OF INCINERATORS. THERE IS TOO MUCH CONFUSION, CONTRADICTION, LACK OF CREDIBILITY AND CONFIDENCE ON THE ISSUE OF INCINERATORS FOR SUCH PROJECTS TO PROCEED WITHOUT A COMPREHENSIVE ASSESSMENT.

MOST OF US REALIZE THAT NJ HAS A GARBAGE PROBLEM AND WE UNDERSTAND EACH COUNTY WAS DELEGATED RESPONSIBILITY TO SOLVE THE PROBLEM. WE ALSO KNOW THAT THIS APPROACH HAS PRODUCED AN UNCOORDINATED AND EXCESSIVE RESPONSE AND THAT TOO MANY FURNACES ARE NOW IN THE PLANNING/IMPLEMENTATION STAGE.

THE CONFUSION AND LACK OF CONFIDENCE RESTS ON THE FOLLOWING ISSUES:

1) HOW MANY FURNACES DOES THE STATE OF NJ ACTUALLY REQUIRE TO ADDRESS ITS GARBAGE PROBLEM PRACTICALLY, COST EFFECTIVELY WITHOUT ADDITIONAL TAX BURDENS?
2) ONCE THAT NUMBER IS DETERMINED, WHERE ARE THE MOST RATIONAL, ACCESSIBLE, APPROPRIATE LOCATIONS FOR THESE FURNACES?
3) WHAT IMPACT WILL RECYCLING AND NEW RECYCLING TECHNOLOGY HAVE ON THE VOLUME OF GARBAGE?
4) SHOULD THERE BE A STAGED PLAN FOR THE CONSTRUCTION OF INCINERATORS RELATED TO ACTUAL NEED FOR ADDITIONAL INCINERATORS?

5) WILL THERE BE SUFFICIENT DOLLARS FOR EFFECTIVE MONITORING OF INCINERATORS AND WHO WILL BE RESPONSIBLE?

6) ARE THERE ALTERNATIVES TO INCINERATORS THAT ARE MORE COMPATIBLE WITH OUR CONCERNS FOR -

AIR QUALITY

HEALTH ISSUES

SAFETY ISSUES

COST ISSUES

THESE ARE SOME KEY ISSUES FOR WHICH THERE HAVE TO BE CREDIBLE ANSWERS. ONE THING NONE OF US WANT ARE POORLY CONCEIVED AND PLANNED PROJECTS THAT WILL HAUNT US IN THE YEARS TO COME.

Public Statement for 9/26/89 Meeting

The members of the Netcong Environmental Commission have many reservations on the proposed incinerator to be built in Morris County.

Our first concern pertains to our water system. The proposed incinerator is located on an aquifer basin less than one-half of a mile away from one of Netcong's well fields. This raises two important questions: one of quantity and one of quality. This particular incinerator is designed to consume 50,000 gallons of water per day. This water will come from surface water near our wells. How extensive will this affect the quantity of water in our wells? With toxic emissions and hazerdous ash landfills, what effect will be brought upon the quality of Netcong's water supply? We, as a town, have an obligation to prevent any detrimental effects on on our water system.

Our second concern pertains to the health of our residents. Incinerators have been known to pollute up to a distance of 25 miles and are proven by the EPA to pose significant health hazards. For example, an incinerator in Philadelphia, one-half the size of the proposed Morris County incinerator, was forced to close in Jully of 1988 because of the high cancer rate found in the area, the rate of children with brain tumors, and dioxins found in the soil. New Jersey is already ranked as having the second poorest air quality in the nation. The incinerator will worsen the air quality. Smoke stack emissions expell Agent Orange, lead, and arsenic, to name a few.

Our third major concern deals with cost. One major cost is to the environment. It is almost always more costly to correct environmental problems than it is to prevent them. One major issue has to be the cost to the taxpayer. The project is predicted to cost $150 million and these costs usually overrun, at times by as much as 60 percent -- as was the case in Warren County. These costs also don't include constructing the 80 acre land fill that stores the hazardous ash. Also, the burner cannot operate efficiently with fractional loads. The Warren County incinerator had to be fed wood chips and newspapers to make up for the shortfall, costing the county almost $2 million. There are also the costs of testng, pollution control equipment and costs for litigations and fines that are practically a certainty.

The facts seem to lead us away from incineration altogether. Sixty of the 150 incineration projects in the country have been scrapped at some stage in the last two years. In 1988 alone the ratio was more than 50 percent because the cost of burning was too high. A major investment firm warned investors against purchasing stock in companies that specialize in "resource recovery". The county should investigate other viable alternatives to incineration before diving into a project with so many flaws.

A pilot project to monitor Warren County's incinerator and determine if and how toxins from garbage burning enter the environment and the food chain has been authorized for funding and will start this Fall. The 18 month, $200,000 study sponsored by the state DEP will llok for pollutants such as dioxin and heavy metals in the soil, vegetation and cow's milk around the state's first resource recovery incinerator.

We respectfully request a similar study be conducted on the potential effects an incinerator at the proposed site would have on the environment especially the quality of the borough's water supply.

Sincerely,

Ed Sekula

Netcong Environmental Commission
Ed Sekula, Chairman

1067X

TESTIMONY OF ATTORNEY EMERY TOTH IN SUPPORT OF A-4105
SEPTEMBER 26, 1989

My name is Emery Toth, and I am a Perth Amboy attorney who is opposed to the construction of incinerators for solid waste, sludge and hazardous waste disposal.

I want to applaud the sponsors of A-4105 for slowing down the rush by Department of Environmental Protection (DEP) officials toward making New Jersey dependent on incineration. The health and financial considerations are so great that there must be a moratorium on construction. The DEP must conduct the necessary studies to determine the short and long-term health-related consequences of this technology on our environment. It is my hope that this bill will receive bipartisan support today and be reported out for Assembly action.

This bill comes at a critical moment. In my county, Middlesex County, the freeholders have slated the municipality of Sayreville for a solid waste incinerator. This incinerator would send the air emissions from its stacks to my city, Perth Amboy. I consulted an American Lung Association of New Jersey publication entitled, "Air Pollution in New Jersey: Problems, Programs and Progress" for background on incinerator-related health effects. According to this text, various pollutants are released from incinerators, with dioxins, PCBs, and lead among the most carcinogenic emissions.

A-4105 instructs DEP to study the overall effects of solid waste incineration facilities, for example, on polluting our air, our water quality, our water supply and altering our land use policies. Hopefully, this study will also yield important health information regarding the effects on humans. The New Jersey Lung Association publication noted that very little studies have been conducted which measure incineration' s impact on humans. **I don't think the residents of New Jersey should be the guinea pigs. We owe it to the public to have the facts known before the final decisions are made on the viability on incineration.** Let's not turn today's toxic incinerators into the nuclear power plants of the future. The public deserves a better investment of their taxpayer dollars. Therefore, while the one year moratorium on permitting solid waste incinerators is in effect, I hope the alternative technologies of composting and recycling will be fully explored.

280 High Street
Perth Amboy, NJ 08861 (201) 442-1777

So, there is double protection for the ash disposal problem. If we dispose of the ash by itself, we will never get the type of acidity in the leachate which will pull the metals out. And, if for some reason we are wrong in this evaluation, we will have a leachate collection system built into the double-lined landfills required by the state which will collect and treat the leachate so metals do not get into groundwater.

In conclusion, let me state that resource recovery is a valuable technology which provides efficient waste disposal across the United States and throughout the world. As a scientist, I recognize that there are areas of concern with the technology among the general public, and I have studied these issues in detail. I am convinced that, when properly implemented and controlled, waste-to-energy resource recovery incineration facilities are an effective and efficient component in a total program of waste management and disposal and pose minimal risk to public health and the environment.

Richard Magee, Ph.D., is the Executive Director of the Hazardous Substance Management Research Center at the New Jersey Institute of Technology. Dr. Magee serves as Director of the Northeast Hazardous Substance Research Center, one of five national research centers established by the United States Environmental Protection Agency. He is also a Professor in the Departments of Mechanical Engineering and Chemical Engineering, Chemistry and Environmental Science at the New Jersey Institute of Technology.

New Jersey for A Clean Tomorrow (ACT) is a not-for-profit educational organization. New Jersey ACT was formed to inform and educate residents and elected officials of New Jersey about the solid waste disposal crisis and its solution. New Jersey ACT supports a comprehensive solid waste management strategy, which includes:

- source reduction;
- recycling;
- resource recovery incineration; and,
- use of modern, lined landfills.

New Jersey ACT hopes to provide a thorough understanding of the needs, benefits and technologies associated with comprehensive solid waste management. As part of New Jersey ACT's efforts, an independent Technical Advisory Panel (TAP) consisting of research scientists and physicians has been established under the direction of Richard Magee, Ph.D., Executive Director of the Hazardous Substance Management Research Center at the New Jersey Institute of Technology.

For additional information on New Jersey ACT, the Technical Advisory Panel, or issues including ash management, air emissions and risk assessment, contact:

Erica Schiffman, New Jersey ACT Project Manager, at (201) 225-1180.

Richard Magee, Ph.D., New Jersey Institute of Technology

Therefore, the critical way that we control dioxin emissions in resource recovery plants is through good particulate removal. The key, in my mind, to any successful resource recovery plant is good particulate removal. The standard air emission control system that most people are looking at right now includes dry scrubbers with bag house filters, something that almost looks like your vacuum cleaner bag. Results have shown that you can remove greater than 99% of all dioxins produced during incineration and subsequent heat recovery.

Next, heavy metals. Heavy metals are elements and cannot be destroyed in the incinerator. Many of these metals vaporize and then condense on fly ash. Therefore, it is important that a facility have good particulate removal technology. Again, you look at all the data and it indicates you can remove, with the exception of mercury, better than 99% of all the metals that go up the stack. Mercury can be removed at about 97% efficiency. Heavy metal emissions can also be controlled by effective particulate removal.

You may ask, what does it mean to me? What are the health risks from the remaining emissions?

Let's discuss health risk assessments. A health risk assessment calculates the "risk" associated with the operation of a resource recovery facility. The first step in any assessment is to determine where the highest ground level concentration of emissions is from the plant. Then one defines the most exposed individual, the "MEI," as one who lives at that spot. We then assume that the most exposed individual stands there for 70 years and doesn't move.

Scientists go to great lengths to do the best job they can, to make the most conservative assumptions, and go to extremes to protect public health. They calculate what you would inhale, what you would ingest if you were eating food grown on that spot. They add all this data together and come up with "the risk" for the most exposed individual.

Typically, health risk assessments for resource recovery incineration facilities run somewhere between one in a million to ten in a million additional cancer deaths in a 70-year lifetime—if you were to live at the location of the MEI, day and night, for 70 years.

The American Cancer Society states that our chances are 1 in 4 to 1 in 5 of getting cancer over a 70-year lifetime. That would equate to 200,000 to 250,000 cases of cancer in every million people. The operation of a resource recovery plant might cause an additional 10 incidents of cancer under the most conservative estimates. One would expect that the actual number would be much less. Supporters of resource recovery incineration think that is an acceptable risk. Someone else might argue that is not an acceptable risk. This becomes a judgment call.

The third issue that comes up about resource recovery plants concerns the incinerator ash. If you've been reading about the operation in Warren County, this is the issue in the headlines. There are two types of ash that are the result of the incineration process. One is called the bottom ash—the ash in the bottom of the incinerator which doesn't get vaporized and caught in the air pollution control equipment. The other type is the fly ash—that which we take out of our emissions collection system. Generally it's the fly ash that poses a problem, but let's just put it all together for the purpose of this discussion.

In terms of safety, the State of New Jersey requires double-lined landfills for safety. And, in the future it may be required to monofill ash—landfill ash by itself. There are a number of reasons for this which revolve around the possibility of heavy metals leaching into water supplies. In simple terms, research indicates that the metals will not leach from the ash from normal rainfall because they cling tightly to the ash and require an acidic "wash" to be released. Since there will be no organic waste disposed of with the ash, and it is the presence of organic waste which influences acidity, this is highly unlikely. Personally, I think it's an overkill (monofilling ash), but when you discuss the safety of the environment there's nothing wrong with overkill.

Richard Magee, Ph.D., New Jersey Institute of Technology

Generally, I'm not a very popular person when I talk about resource recovery incineration. This is due to the fact that solid waste disposal is an extremely controversial subject. Of this there is no doubt, especially across New Jersey.

I'd like to make a point for your consideration. That point is the following: Look at any major industrialized nation in the world, any major industrialized region which doesn't landfill solid waste. They can not solve their solid waste disposal problem using only one or two disposal technologies.

I ask you to consider this because you will hear people say that we can recycle our way out of the solid waste crisis. I honestly don't believe that. I look around the world and can't find a basis for that claim. So, therefore, I come with at least one bias, resource recovery incineration must play some portion in solving the solid waste management problem. The challenge to any county, and to the State of New Jersey, is what part will incineration play in providing environmentally sound solid waste management.

Nationally we're landfilling 85% of our solid waste—85%. Why? We're a land-rich nation. Presently, only 10% of our waste is being recycled, and approximately 5% is being incinerated. Countries like Sweden incinerate 70% of their waste. Japan, the model country in the world for recycling, achieves 48% recycling, but they end up incinerating 70% of what remains.

Now, what are the "good" things about resource recovery? First, we produce energy. Think about this, because the energy that is produced would have to come from some other source. Generally, it's the energy generated by fossil fuel plants that can be replaced—not the nuclear plants, because economics dictate that nuclear plants run at full-load. So you're replacing energy that would have come from another combustion source. I think that's a definite plus. The big plus however is we really don't burn garbage to produce energy, we do it because we end up with only 10% of the volume we started with.

Look at a normal waste stream. About 25% of it is non-combustible. We don't even try to burn things like refrigerators. So, the big attractiveness for burning garbage is that we have less mass, less volume to dispose of. With available landfill space limited, reducing the volume of the waste extends the life of the landfill.

Now, to digress for a moment, we have research going on, looking for ways to use the ash that is produced in the incineration process. Most of the ash is basically inert—you could almost use it for roadbed material, and it has been used for that in other countries. But, there are heavy metals in the ash that you want to get out before utilizing it. I'll address the presence of heavy metals in the ash later on.

What are the "negatives?" There are three major negatives about resource recovery that you will hear about. First, is what are called trace organic emissions. That translates into the feared word "dioxins." Along with dioxin are other gases, such as carbon dioxide, sulphur dioxide and hydrogen chloride. Second, heavy metal emissions. Finally, the major negative, the one you're probably reading about the most today, is ash disposal.

So let's take each of these major issues and address them. What about dioxins? Yes, dioxins are emitted from resource recovery plants. Having made that point, I will also tell you EPA (Environmental Protection Agency) has done a report which states that there are 13 parts per trillion of dioxins in almost every piece of paper you pick up, including the paper this is printed on. I will also tell you that if you go to Yugoslavia and you sample people's adipose tissue you will find that there are five parts of a trillion of dioxins. I pick Yugoslavia because they don't incinerate garbage, so the dioxin must be coming from other sources.

Dioxins come from multiple sources. However, all the studies that I've seen indicate there are more dioxins in the waste going in than there are dioxins coming out. And, most of the formation theories indicate that the dioxins are formed on the particles called "fly ash" that are carried along with the gases up the stack.

New Jersey for A Clean Tomorrow

Environmental Issues Paper on Comprehensive Solid Waste Management

Richard Magee, Ph.D.
Executive Director
Hazardous Substance Management Research Center
New Jersey Institute of Technology

Transcript of Presentation at
Morris County Public Information Session
Madison, New Jersey

March 1989

1060X

OFFICE OF
PETER M. BOWER
DEPUTY MAYOR

Township of Teaneck
PAUL A. VOLCKER
MUNICIPAL GREEN
TEANECK
NEW JERSEY 07666
(201) 837-1600

September 26, 1989.

To the Freeholders of Bergen County:

As an environmental scientist and as theDeputy Mayor of Teaneck, I wish to put on the record my opposition to the present plans for an incinerator in Bergen County. Opposition to the incinerator has often been characterized as a "NIMBY" phenomenon. There is significant opposition to this incinerator in many other communities as well, including Teaneck.

The Bergen County incinerator has a present price-tag of $425 million (which will grow to well over half a billion dollars when finally built) making this project the largest public works project in Bergen County history. Taxpayers should know that the project is economically and environmentally unsound.

While the details are not important for my message to you today, I am preparing a more detailed accounting of my objections to this project which will be sent to you in a few days.

Sincerely,

Peter Bower

Dr. Peter Bower

1069X

PARADORES DE TURISMO

PARADOR DE MERIDA

Good Evening,

I'm sorry I can't be here tonight for the hearing of Assembly Bill 4105. The amendment and passage of this bill is vital. It is the first intelligent step towards stopping what will otherwise become The Holocaust of New Jersey.

Only maddness & indifference can dictate 10 incinerators in a 10 mile radius that is already saturated with pollution.

Assemblyman Rooney's article which appeared in the Record called attention to many significant facts including the comparitive height of the smokestacks. I wonder how many more facts are being withheld in fear of provoking a mass exodus of the area.

It is frightening to watch the agencies designed to protect the environment cower or change their own rules & regulations to clear the way for the Bergen County Garbage Incinerator.

The DEP's attempt to automatically renew permits and waive background disclo-

1070X

Billy
Read this at the meeting for me if you want to please do it

fax # here
924-31-92-08

PARADORES DE TURISMO

PARADOR DE MERIDA

Tfno. (924) 31 38 00 Fax (924) 31 92 08 Plaza de la Constitución 3 06800 MERIDA (Badajoz)

to offset American Ref Fuel's problems with soon to expire permits and anti trust violations is sheer abuse of power.

The Army Corp of Engineers in granting permits to destroy the wetlands disgraces itself. And the HMDC should be abolished for the poor job it has done.

It is nauseating to read both Senators Bradley & Lautenberg & Congressman Toricelli's newsletters wherein they inform us of their deep concern to "protect and restore" the environment "while they ignore the problems of mass burn garbage incineration the destruction of wetlands and the adverse behaviour of our government agencies.

The legislators sponsoring & supporting Assembly Bill 4105 are acting in the best interest of the people. To continue the path of mass burn garbage incineration is a death sentence for The State of New Jersey.

(Billy - You know you can have one of my [illegible] 107/X [illegible]
[illegible]

3901
09/12/89apm

RESOURCE RECOVERY FACILITY IMPLEMENTATION

County ATLANTIC

Capacity 750 tpd

Franchise Holder

Host Municipality Egg Harbor Twp.

Implementing Agency

Ownership Type

Initial Tipping Fee

Initial Year of Operation 1992

Rate Setting Methodology

Vendor

County BERGEN

Capacity 3,000 tpd; 79.8 megawatts

Franchise Holder

Host Municipality Ridgefield Boro

Implementing Agency County Utilities Authority

Ownership Type Private

Initial Tipping Fee $65.00 per ton

Initial Year of Operation 1993

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor American REF-FUEL

County BURLINGTON

Capacity

Franchise Holder Burlington County Board of Chosen Freeholders

Host Municipality Mansfield Twp ($1.00 per ton host benefit); Florence Twp. ($1.16 per ton host benefit)

Implementing Agency Burlington County Board of Chosen Freeholders

Ownership Type Public

Initial Tipping Fee $34.67 per ton; $45.99 per ton (Gross)

Initial Year of Operation 1989 LF; 1991 RDF/Co-composting Facility

Rate Setting Methodology LF Tariff, BPU

Vendor Geological Reclamation Operations and Waste Systems Inc. (GROWS) (Waste Management Inc.)

County CAMDEN

Capacity 1,050 tpd; 33.7 megawatts

Franchise Holder Camden County Energy Recovery Associates

Host Municipality City of Camden

Implementing Agency Pollution Control Financing Authority; Improvement Authority (ash disposal agreement)

Ownership Type Private

Initial Tipping Fee $85.00 per ton

Initial Year of Operation 1991

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Camden County Energy Recovery Associates (Foster Wheeler Corp./Transtech, Inc.)

County CAMDEN (Pennsauken)

Capacity 500 tpd

Franchise Area Audubon, Cherry Hill, Haddonfield, Haddon, Lindenwold, Merchantville, Pennsauken, Tavistock, Voorhees, Collingswood and Oaklyn

Franchise Holder Pennsauken Solid Waste Management Authority

Host Municipality Pennsauken Twp.

Implementing Agency Pennsauken Solid Waste Management Authority

Ownership Type Private

Initial Tipping Fee $63.15 per ton, including ash disposal

Initial Year of Operation 1992

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Ogden Martin Systems of Pennsauken, Inc.

County ESSEX

Capacity 2,250 tpd; 60 megawatts

Franchise Holder Essex County

Host Municipality City of Newark

Implementing Agency Essex County

Ownership Type Private

Initial Tipping Fee $68.00 per ton

Initial Year of Operation 1991

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor American REF-FUEL Company of Essex County

County GLOUCESTER

Capacity 575 tpd; 12 megawatts

Resource Recovery Franchise Holder SES Gloucester Co., LP

County LF Franchise Holder County Improvement Authority

Host Municipality West Deptford Twp.

Implementing Agency County Improvement Authority

Ownership Type Private

Initial Tipping Fee $59.60 per ton (exc. $25.00 ash disposal fee.)

Initial Year of Operation 1990

Rate Setting Methodology BPU Generic Order

Vendor SES Gloucester Co., LP (Wheelabrator Technologies, Inc.)

County HUDSON

Capacity 1,500 tpd

Franchise Holder

Host Municipality Kearny Twp.

Implementing Agency County Improvement Authority

Ownership Type Private

Initial Tipping Fee $57.17 per ton

Initial Year of Operation 1993

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Ogden Martin Systems, Inc.

County HUNTERDON

In July 1986, Hunterdon County signed a contract with Warren County authorizing Hunterdon County to transport 30,000 tons per year of Hunterdon County solid waste to Warren County's 400 tpd resource recovery facility in Oxford Township for incineration through December 31, 2001. The contract stipulates that Hunterdon County shall have the right of first refusal to utilize any unused capacity at the Oxford facility for ten years. As of June 1989, Warren County transports approximately 1,200 tons per week to the Oxford facility, or approximately 43 percent of the facility's 2,800 ton per week capacity. Hunterdon County transports approximately 1,200 tons per week to the Warren County resource recovery facility, or approximately 70 - 75 percent of all the solid waste it generates. Thus, the facility is operating with a capacity shortfall of approximately 400 tons per week.

Terms: 400 tpd = 2,800 tons per week
145,600 tons per year

County MERCER

Capacity 975 tpd

Franchise Holder County Improvement Authority

Host Municipality Hamilton Twp.

Implementing Agency County Improvement Authority

Ownership Type Public

Initial Tipping Fee

Initial Year of Operation 1993

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Westinghouse

County MIDDLESEX

Capacity 2,250 tpd

Franchise Holder

Host Municipality Sayreville Boro

Implementing Agency County Utilities Authority

Ownership Type

Initial Tipping Fee $48.22 per ton

Initial Year of Operation 1993

Rate Setting Methodology

Vendor

County MONMOUTH

Capacity 1,700 tpd

Franchise Holder

Host Municipality Tinton Falls Borough

Implementing Agency Monmouth County

Ownership Type Public

Initial Tipping Fee

Initial Year of Operation 1994

Rate Setting Methodology

Vendor

County MORRIS

Capacity 1,300 tpd

Franchise Holder

Host Municipality Roxbury Township

Implementing Agency County Municipal Utilities Authority

Ownership Type

Initial Tipping Fee

Initial Year of Operation 1993

Rate Setting Methodology

Vendor Foster Wheeler Corporation

County OCEAN

Capacity 1,050 tpd

Franchise Holder

Host Municipality Waretown, Ocean Twp.

Implementing Agency Pollution Control Financing Authority

Ownership Type Private

Initial Tipping Fee

Initial Year of Operation 1992

Rate Setting Methodology

Vendor

County PASSAIC

Capacity 1,434 tpd; (3) 478 tpd incinerators, 45 megawatts (1440 - 1750 tpd total, approx. 500,000 tons per year, 344 operating days per year)

Franchise Holder County Utilities Authority

Host Municipality City of Passaic

Implementing Agency County Utilities Authority

Ownership Type Private

Initial Tipping Fee

Initial Year of Operation 1993

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Foster Wheeler Passaic, Inc.

County UNION

Capacity 1,440 tpd

Franchise Holder County Utilities Authority

Host Municipality City of Rahway

Implementing Agency County Utilities Authority

Ownership Type Public

Initial Tipping Fee

Initial Year of Operation 1994

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Ogden Martin Systems of Union, Inc.

County WARREN

Capacity 400 tpd; (116,000 - 135,000 tons per year) 13.5 megawatts

Warren County Waste Stream 1,500 - 1,800 tons weekly; 2,200 tons per week anticipated

Hunterdon County Waste Stream 82 tpd

Franchise Holder Pollution Control Financing Authority

Host Municipality Oxford Twp.

Implementing Agency Pollution Control Financing Authority

Ownership Type Private

Initial Tipping Fee $98.00 per ton; (ash disposal, $65.00 per ton; hazardous ash disposal, $250.00 per ton)

Initial Year of Operation 1988

Rate Setting Methodology P.L. 1985, c. 38 Contract

Vendor Warren Energy Resource Co. (Blount Energy Resource Co.)

Source: New Jersey Board of Public Utilities, 1985-89; New Jersey Department of Environmental Protection, 1985-1989.

Table I
Projected Resource Recovery Disposal Costs
Resource Recovery Facility

County	Capacity (Tons/Day)	Initial Year of Operation	Estimated Tipping Fee (Dollars/Ton)
Atlantic	750	1992	
Bergen	3,000	1993	$65.00
Burlington	500	1991	45.99
Camden	500	1992	63.15
Camden	1,050	1991	85.00
Essex	2,250	1991	68.00
Gloucester	575	1990	84.60
Hudson	1,500	1993	57.17
Mercer	975	1993	
Middlesex	2,250	1993	48.22
Monmouth	1,700	1994	
Morris	1,300	1993	122.00
Ocean	1,050	1992	
Passaic	1,434	1993	
Union	1,440	1994	
Warren	400	1988	98.00

Source: Figures derived from various public and private sources.

Table II
Proposed County Resource Recovery Facilities

County	Capacity (Tons/Day)	Estimated Cost	Estimated Operation Date
Atlantic	750	$ 83,000,000	1992
Bergen	3,000	425,000,000	1993
Burlington	500	55,000,000	1991
Camden	500	62,000,000	1992
Camden	1,050	154,000,000	1991
Cape May	500	55,000,000	1991
Essex	2,250	343,000,000	1991
Gloucester	575	83,750,000	1990
Hudson	1,500	148,000,000	1993
Mercer	975	117,538,000	1993
Middlesex	2,250	350,000,000	1993
Monmouth	1,700	225,000,000	1994
Morris	1,300	135,000,000	1993
Ocean	1,050	208,000,000	1992
Passaic	1,434	115,099,600	1993
Salem	220	28,000,000	1991
Sussex	400	44,000,000	1991
Union	1,440	107,516,228	1994
Warren	400	53,216,000	1988
		$2,767,007,428	

Source: Derived from figures provided by the Department of Environmental Protection & the Board of Public Utilities, 1989.

Table III
Board of Public Utilities Project Review
and Implementation Status

County	Capacity (Tons/Day)	Project Status	Estimated Operation Date
Bergen	3,000	Under Review	1993
Camden (Pennsauken)	500	Approved	1992
Camden	1,050	Approved	1991
Essex	2,250	Approved	1991
Gloucester	575	Approved	1990
Hudson	1,500	Under Review	1993
Mercer	975	Under Review	1993
Passaic	1,434	Under Review	1993
Union	1,440	Under Review	1994
Warren	400	Operational	1988

Source: Board of Public Utilities, June, 1989.



New Jersey for A Clean Tomorrow

Environmental Issues Paper
on
Comprehensive Solid Waste Management

Richard Magee, Ph.D.
Executive Director
Hazardous Substance Management Research Center
New Jersey Institute of Technology

Transcript of Presentation at
Morris County Public Information Session
Madison, New Jersey

March 1989

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(2) TRANSCRIPT OF PRESENTATION

Richard Magee, Ph.D., New Jersey Institute of Technology

Generally, I'm not a very popular person when I talk about resource recovery incineration. This is due to the fact that solid waste disposal is an extremely controversial subject. Of this there is no doubt, especially across New Jersey.

I'd like to make a point for your consideration. That point is the following: Look at any major industrialized nation in the world, any major industrialized region which doesn't landfill solid waste. They can not solve their solid waste disposal problem using only one or two disposal technologies.

I ask you to consider this because you will hear people say that we can recycle our way out of the solid waste crisis. I honestly don't believe that. I look around the world and can't find a basis for that claim. So, therefore, I come with at least one bias, resource recovery incineration must play some portion in solving the solid waste management problem. The challenge to any county, and to the State of New Jersey, is what part will incineration play in providing environmentally sound solid waste management.

Nationally we're landfilling 85% of our solid waste—85%. Why? We're a land-rich nation. Presently, only 10% of our waste is being recycled, and approximately 5% is being incinerated. Countries like Sweden incinerate 70% of their waste. Japan, the model country in the world for recycling, achieves 48% recycling, but they end up incinerating 70% of what remains.

Now, what are the "good" things about resource recovery? First, we produce energy. Think about this, because the energy that is produced would have to come from some other source. Generally, it's the energy generated by fossil fuel plants that can be replaced—not the nuclear plants, because economics dictate that nuclear plants run at full-load. So you're replacing energy that would have come from another combustion source. I think that's a definite plus. The big plus however is we really don't burn garbage to produce energy, we do it because we end up with only 10% of the volume we started with.

Look at a normal waste stream. About 25% of it is non-combustible. We don't even try to burn things like refrigerators. So, the big attractiveness for burning garbage is that we have less mass, less volume to dispose of. With available landfill space limited, reducing the volume of the waste extends the life of the landfill.

Now, to digress for a moment, we have research going on, looking for ways to use the ash that is produced in the incineration process. Most of the ash is basically inert—you could almost use it for roadbed material, and it has been used for that in other countries. But, there are heavy metals in the ash that you want to get out before utilizing it. I'll address the presence of heavy metals in the ash later on.

What are the "negatives?" There are three major negatives about resource recovery that you will hear about. First, is what are called trace organic emissions. That translates into the feared word "dioxins." Along with dioxin are other gases, such as carbon dioxide, sulphur dioxide and hydrogen chloride. Second, heavy metal emissions. Finally, the major negative, the one you're probably reading about the most today, is ash disposal.

So let's take each of these major issues and address them. What about dioxins? Yes, dioxins are emitted from resource recovery plants. Having made that point, I will also tell you EPA (Environmental Protection Agency) has done a report which states that there are 13 parts per trillion of dioxins in almost every piece of paper you pick up, including the paper this is printed on. I will also tell you that if you go to Yugoslavia and you sample people's adipose tissue you will find that there are five parts of a trillion of dioxins. I pick Yugoslavia because they don't incinerate garbage, so the dioxin must be coming from other sources.

Dioxins come from multiple sources. However, all the studies that I've seen indicate there are more dioxins in the waste going in than there are dioxins coming out. And, most of the formation theories indicate that the dioxins are formed on the particles called "fly ash" that are carried along with the gases up the stack.

Richard Magee, Ph.D., New Jersey Institute of Technology

Therefore, the critical way that we control dioxin emissions in resource recovery plants is through good particulate removal. The key, in my mind, to any successful resource recovery plant is good particulate removal. The standard air emission control system that most people are looking at right now includes dry scrubbers with bag house filters, something that almost looks like your vacuum cleaner bag. Results have shown that you can remove greater than 99% of all dioxins produced during incineration and subsequent heat recovery.

Next, heavy metals. Heavy metals are elements and cannot be destroyed in the incinerator. Many of these metals vaporize and then condense on fly ash. Therefore, it is important that a facility have good particulate removal technology. Again, you look at all the data and it indicates you can remove, with the exception of mercury, better than 99% of all the metals that go up the stack. Mercury can be removed at about 97% efficiency. Heavy metal emissions can also be controlled by effective particulate removal.

You may ask, what does it mean to me? What are the health risks from the remaining emissions?

Let's discuss health risk assessments. A health risk assessment calculates the "risk" associated with the operation of a resource recovery facility. The first step in any assessment is to determine where the highest ground level concentration of emissions is from the plant. Then one defines the most exposed individual, the "MEI," as one who lives at that spot. We then assume that the most exposed individual stands there for 70 years and doesn't move.

Scientists go to great lengths to do the best job they can, to make the most conservative assumptions, and go to extremes to protect public health. They calculate what you would inhale, what you would ingest if you were eating food grown on that spot. They add all this data together and come up with "the risk" for the most exposed individual.

Typically, health risk assessments for resource recovery incineration facilities run somewhere between one in a million to ten in a million additional cancer deaths in a 70-year lifetime—if you were to live at the location of the MEI, day and night, for 70 years.

The American Cancer Society states that our chances are 1 in 4 to 1 in 5 of getting cancer over a 70-year lifetime. That would equate to 200,000 to 250,000 cases of cancer in every million people. The operation of a resource recovery plant might cause an additional 10 incidents of cancer under the most conservative estimates. One would expect that the actual number would be much less. Supporters of resource recovery incineration think that is an acceptable risk. Someone else might argue that is not an acceptable risk. This becomes a judgment call.

The third issue that comes up about resource recovery plants concerns the incinerator ash. If you've been reading about the operation in Warren County, this is the issue in the headlines. There are two types of ash that are the result of the incineration process. One is called the bottom ash—the ash in the bottom of the incinerator which doesn't get vaporized and caught in the air pollution control equipment. The other type is the fly ash—that which we take out of our emissions collection system. Generally it's the fly ash that poses a problem, but let's just put it all together for the purpose of this discussion.

In terms of safety, the State of New Jersey requires double-lined landfills for safety. And, in the future it may be required to monofill ash—landfill ash by itself. There are a number of reasons for this which revolve around the possibility of heavy metals leaching into water supplies. In simple terms, research indicates that the metals will not leach from the ash from normal rainfall because they cling tightly to the ash and require an acidic "wash" to be released. Since there will be no organic waste disposed of with the ash, and it is the presence of organic waste which influences acidity, this is highly unlikely. Personally, I think it's an overkill (monofilling ash), but when you discuss the safety of the environment there's nothing wrong with overkill.

So, there is double protection for the ash disposal problem. If we dispose of the ash by itself, we will never get the type of acidity in the leachate which will pull the metals out. And, if for some reason we are wrong in this evaluation, we will have a leachate collection system built into the double-lined landfills required by the state which will collect and treat the leachate so metals do not get into groundwater.

In conclusion, let me state that resource recovery is a valuable technology which provides efficient waste disposal across the United States and throughout the world. As a scientist, I recognize that there are areas of concern with the technology among the general public, and I have studied these issues in detail. I am convinced that, when properly implemented and controlled, waste-to-energy resource recovery incineration facilities are an effective and efficient component in a total program of waste management and disposal and pose minimal risk to public health and the environment.

Richard Magee, Ph.D., is the Executive Director of the Hazardous Substance Management Research Center at the New Jersey Institute of Technology. Dr. Magee serves as Director of the Northeast Hazardous Substance Research Center, one of five national research centers established by the United States Environmental Protection Agency. He is also a Professor in the Departments of Mechanical Engineering and Chemical Engineering, Chemistry and Environmental Science at the New Jersey Institute of Technology.

New Jersey for A Clean Tomorrow (ACT) is a not-for-profit educational organization. New Jersey ACT was formed to inform and educate residents and elected officials of New Jersey about the solid waste disposal crisis and its solution. New Jersey ACT supports a comprehensive solid waste management strategy, which includes:

- source reduction;
- recycling;
- resource recovery incineration; and,
- use of modern, lined landfills.

New Jersey ACT hopes to provide a thorough understanding of the needs, benefits and technologies associated with comprehensive solid waste management. As part of New Jersey ACT's efforts, an independent Technical Advisory Panel (TAP) consisting of research scientists and physicians has been established under the direction of Richard Magee, Ph.D., Executive Director of the Hazardous Substance Management Research Center at the New Jersey Institute of Technology.

For additional information on New Jersey ACT, the Technical Advisory Panel, or issues including ash management, air emissions and risk assessment, contact:

Erica Schiffman, New Jersey ACT Project Manager, at (201) 225-1180.

PRESS RELEASE

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AGRIPOST PROJECT UPDATE

JULY, 1989

Pompano Beach, FL -- Agripost, Inc. has announced that it has completed 65% of construction at its Dade County, Florida solid waste composting plant. The facility is being built by Metric Constructors, Inc., a division of J. A. Jones Company, Charlotte, N.C. Lockwood-Greene Engineers, Spartanburg, S.C., are the designers/engineers for the project.

The project completion date is now scheduled for late 1989. Full production is set to commence during the first quarter, 1990. At that time, it is projected that the Agripost non-combustion, enclosed municipal solid waste composting plant will process up to 250,000 tons of solid waste per year under its contract with Metropolitan Dade County, Florida.

During the period after final construction and prior to full start-up, Agripost will operate the facility solely for the purpose of conducting equipment and machinery performance tests and to fine tune its proprietary process.

- more -

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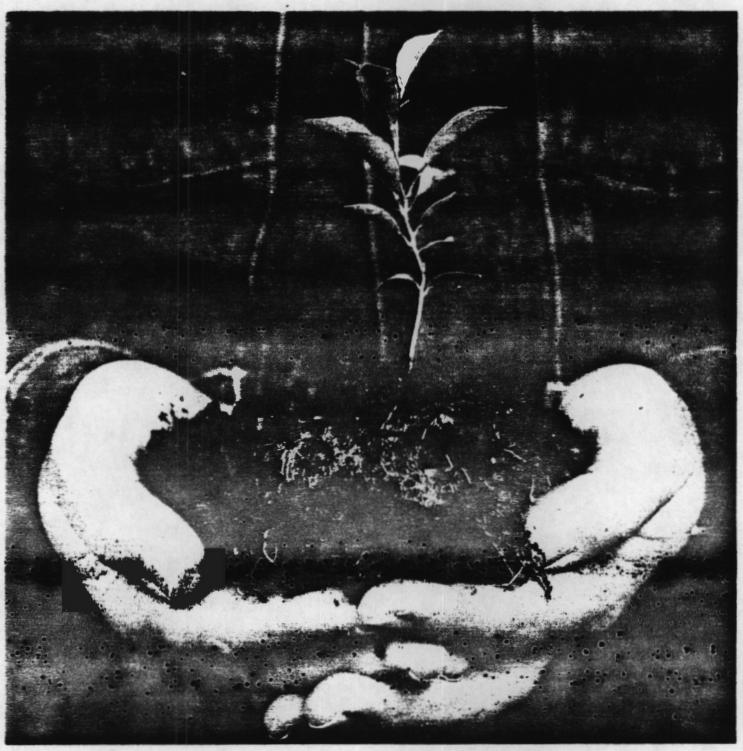
Presently, Agripost has constructed an Interim Market Development Facility (IMDF) which is being operated to produce limited amounts of its end-product (Agrisoil) for testing purposes. It is now accepting solid waste which has undergone a primary shredding from Dade County's Black Point facility. Once it enters the IMDF line, it is milled again, composted, remilled and screened to produce a product similar to Agrisoil, the final marketable soil amendment that will be manufactured in the fully constructed plant. The company also reported that advance marketing programs have been instituted for Agrisoil and preliminary results are most favorable.

The Agripost plant will be operated under contract by Jones Operations and Maintenance, Charlotte, N.C.

* * *

AGRIPOST™

THE COMPLETE SOLUTION TO SOLID WASTE PROBLEMS



AT PEACE WITH THE ENVIRONMENT

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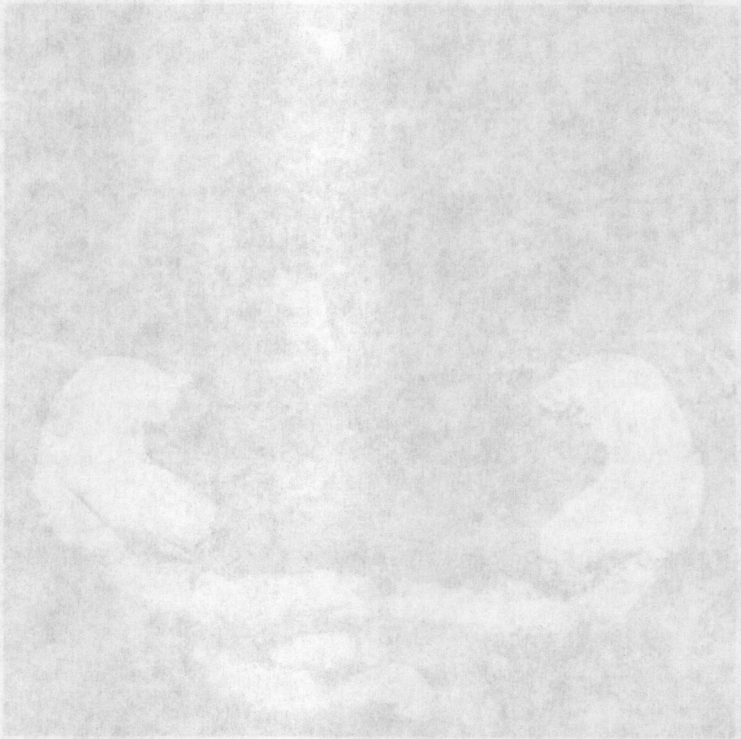


AGRIPOST INC.



PLANNED DADE COUNTY FACILITY

INTRODUCTION

In the beginning--say, a million years ago--waste disposal was not a problem. Prehistoric man left little for disposal since life's necessities were hard to come by and, therefore, were not readily wasted. Most of the discards were soon disposed of by scavengers, and what little remained was taken care of, in time, by Mother Nature. In a word, it was composted.

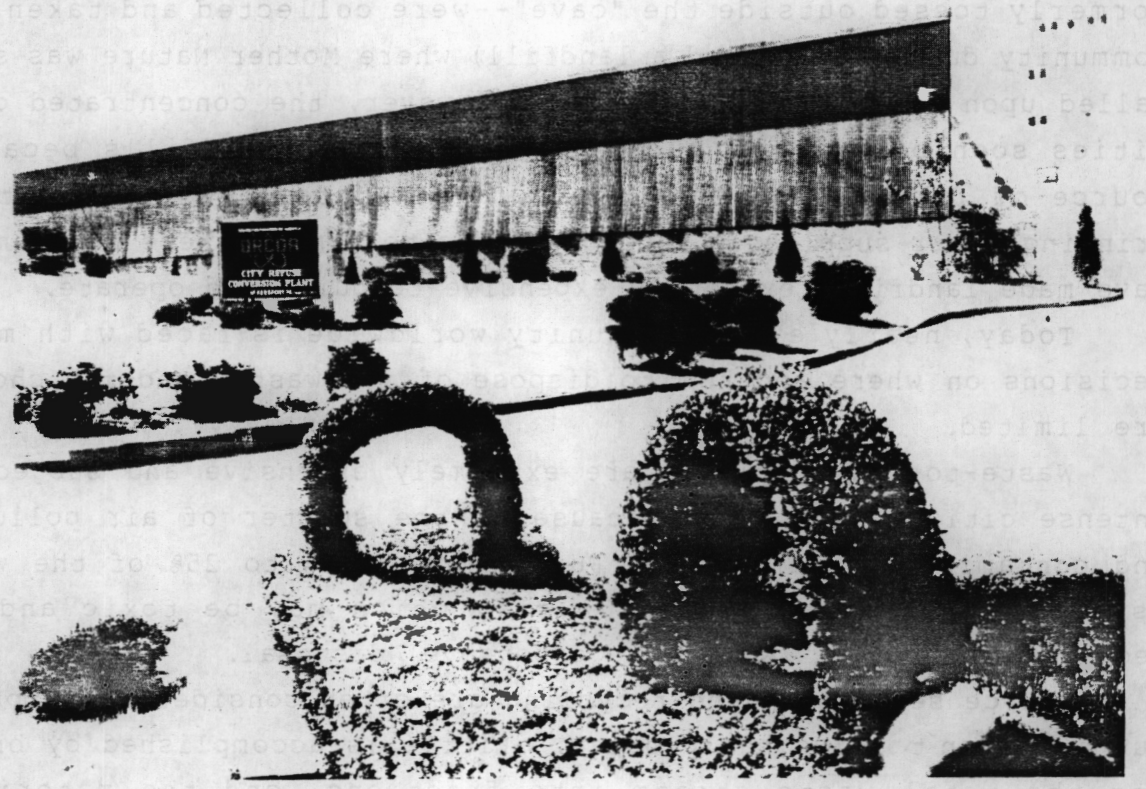
As man progressed, so did his disposal problem. Scraps--formerly tossed outside the "cave"--were collected and taken to a community dump (now called a landfill) where Mother Nature was still called upon to handle the problem. However, the concentrated quantities soon became too much for her, so the landfills became a source of fires, obnoxious odors, and a threat to the purity of drinking water supplies. Recent efforts to combat these problems have made landfills extremely expensive to build and operate.

Today, nearly every community worldwide is faced with major decisions on where and how to dispose of its waste, and the choices are limited.

Waste-to-energy plants are extremely expensive and subject to intense citizen opposition because of the specter of air pollution and contamination (dioxins). Furthermore, 15% to 25% of the waste is left in the form of ash or slag which may be toxic and can require specialized (even more expensive) disposal.

Source separation and recycling are often considered an option, but it doesn't solve the problem. Little is accomplished by breaking the total waste stream into fractions, and the materials-handling costs are higher with separate fractions than with one total waste stream. Recovered materials require "secondary" disposal, and the markets are unreliable at best. But perhaps the greatest roadblock to recycling is the need for complete cooperation within the community for recycling to be effective. That cooperation is difficult to achieve, and the need for strict enforcement simply compounds the problem.

At last there is another alternative. In essence, it's the oldest of all solutions--composting--but now there is a way to do it quickly, cheaply, and without unpleasant side effects. Agripost's process offers an inexpensive, environmentally safe, low-technology solution to one of man's most nagging problems. This brochure describes that process, its history, and its end product.



First facility using Agripost technology.
(McKeesport, Pennsylvania)

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THE AGRIPOST PROCESS

In the early 1950's, only a few farsighted individuals even thought about waste disposal, and few of them were seriously concerned. Landfills were plentiful and disposal was practically free. A gallon of gas could be bought for less than 20 cents and petroleum-based chemical fertilizers were inexpensive and readily available, so no one needed organics.

Howard Burr foresaw that all this would change and developed the process to not only handle the waste-disposal problem but, at the same time, produce a valuable organic product for agricultural and horticultural use.

HISTORY OF THE PROCESS

Howard Burr's first composting facility was built in the town of McKeesport (near Pittsburgh, Pennsylvania) in 1955. The plant was a technological success and processed 150 to 200 tons per day for several years. However, it could not succeed financially in the economic environment of the mid-1950's. Although the plant produced a safe, salable end product, McKeesport would not pay any tipping fee and the company could not obtain a market price for the end product high enough to cover debt service and operating costs and still make a reasonable profit. Therefore, it became necessary to seek an alternative site.

In 1959, Burr moved the equipment to Jamaica where the product could be sold for a higher price because of the cost of importing chemical fertilizers to the island. The Jamaica plant opened in 1960 and functioned with both technical and financial success for over 10 years, processing about 300 tons per day and selling the end product (under the "Sun Farm" label) in both the Caribbean Islands and South Florida. Unfortunately, in the early 1970's the Jamaican government decided it wanted more than 50% ownership of the plant. This was unacceptable to Mr. Burr, so the plant was closed and has remained closed ever since, although the current Jamaican government

has expressed a strong desire to have a new plant built.

A small pilot facility was operated briefly in Dade County, Florida, in 1981 to verify that the process would still work despite the changes in the composition of solid waste in the U.S. which had occurred during the past 20 years. The plant verified that the process was still sound.

In July of 1987, Dade County signed a contract with Agripost to supply waste for an 800-ton-per-day plant. Agripost obtained financing for the $25,000,000 project in October, 1988, and construction started shortly thereafter. This plant--the largest indoor compost facility in the world--is expected to be completed and in full operation by early 1990. A limited quantity of Agrisoil is expected to be available in the spring of 1989 for advance market development.

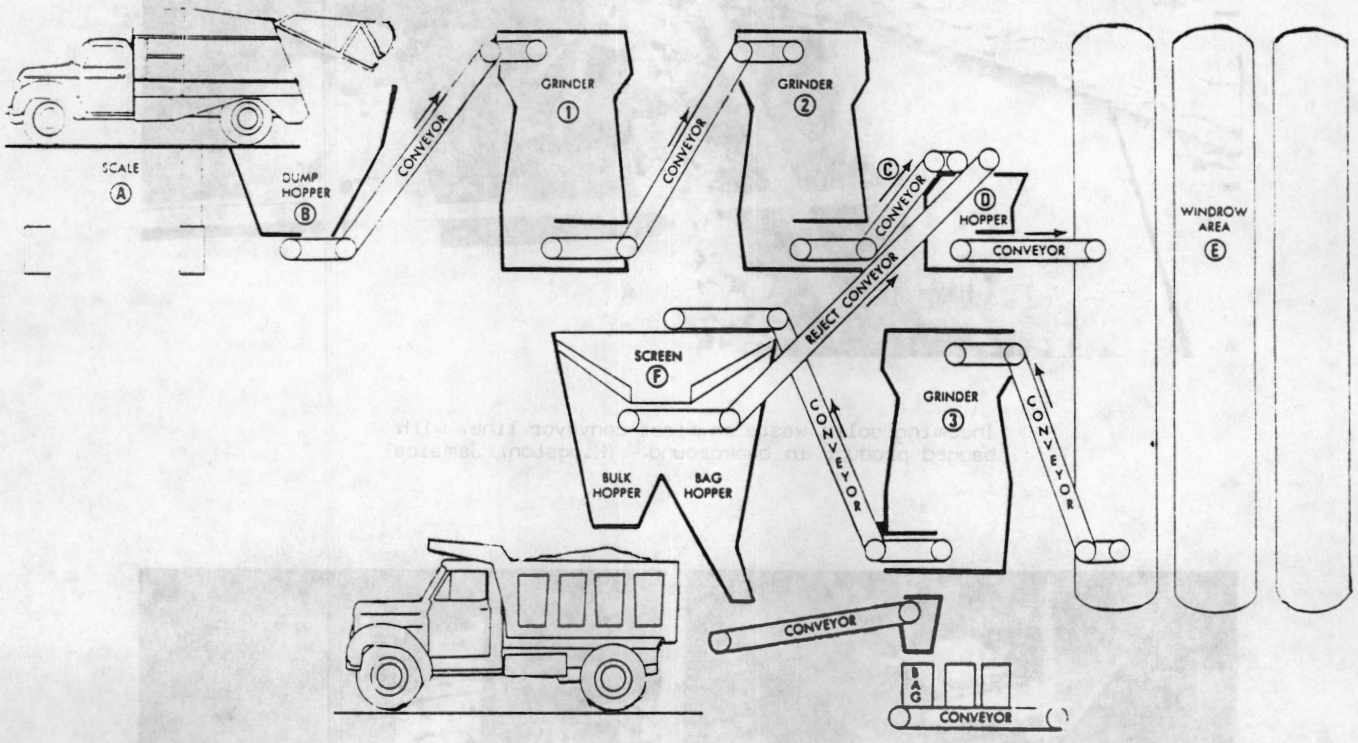
DESCRIPTION OF THE PROCESS

Agripost's process is designed to handle "municipal solid waste"--residential and commercial trash and garbage that families place at the curb on collection day or businesses accumulate in the dumpster out back. In addition to such typical garbage as food waste, bottles, cans, paper, and plastics, the process can accept an almost limitless variety of materials, such as scrap wood, leather, ceramics, concrete block, metal or plastic containers, small appliances, fabrics, and tires. In fact, the only unacceptable waste is that which is toxic, hazardous, or too large to fit into the hammermills. Even the latter category (oversize items) can be processed if first broken or cut into manageable pieces. Toxic or hazardous wastes include explosives, radioactive material, and infectious or hospital waste--in short, the sort of waste which is not normally found in routine trash and garbage collections.

Raw Waste Handling and Shredding

As collection or waste-transfer vehicles enter the plant site, they are weighed and the net weight of their contents recorded. The waste is then sorted for bulky and hazardous materials and fed by conveyor to two specially designed hammermills (shredders) in series. The first reduces the material to a coarse size, while the second hammermill reduces the material even further to the size

AGRIPOST'S COMPOSTING PROCESS



Trucks entering the Agripost plant site are weighed (A) and unloaded into a dump hopper (B). The waste is then fed into two grinders in series (1 and 2) which take the unseparated waste and grind it to a predetermined particle size found to be most suitable for rapid decomposition. A bacterial inoculant is added (C) to accelerate decomposition as the waste is conveyed to a hopper (D). Then the shredded waste is conveyed to piles in the windrow area (E) for composting.

The windrow areas are maintained under strict control for 14 to 21 days. Each pile is numbered and methodically turned and mixed, with temperature and moisture carefully controlled. The material is then conveyed to the final grinder (3) for reduction prior to screening. It is passed through a vibrating screen (F), and the oversized material is recycled for further decomposition. The screened material goes on to bulk storage, shipment, or final bagging.

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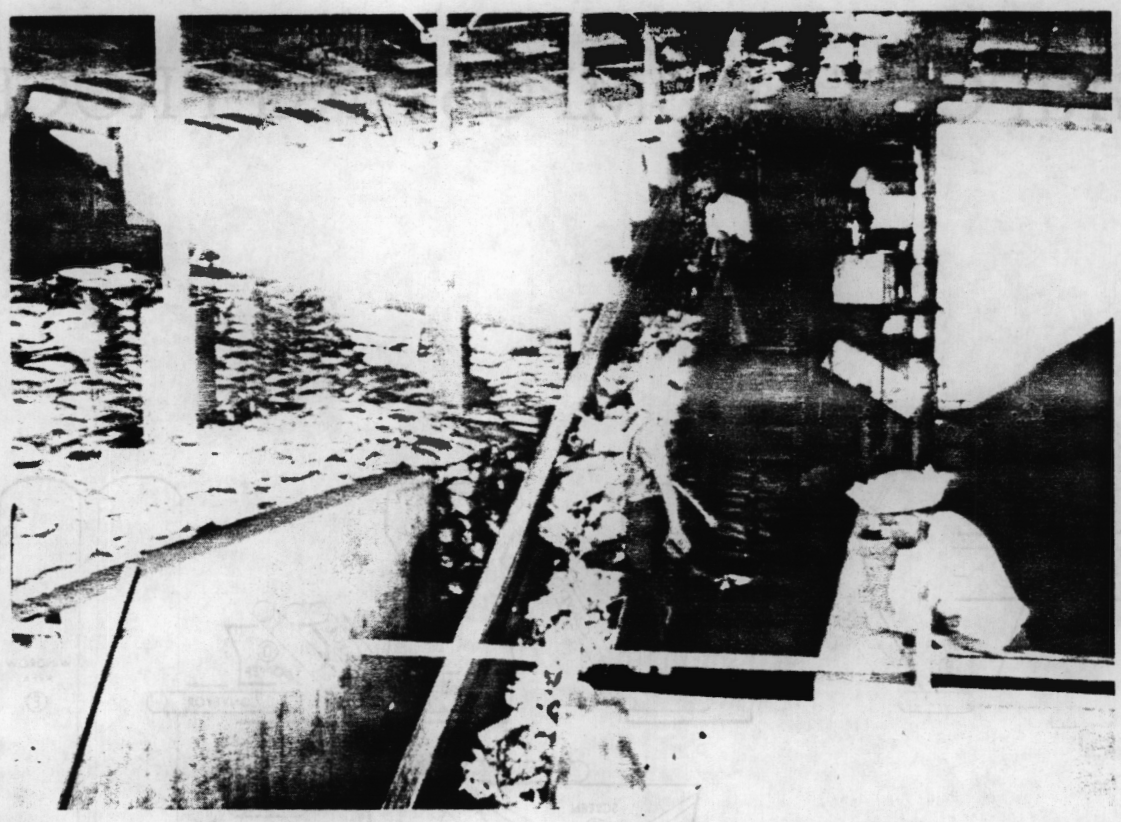
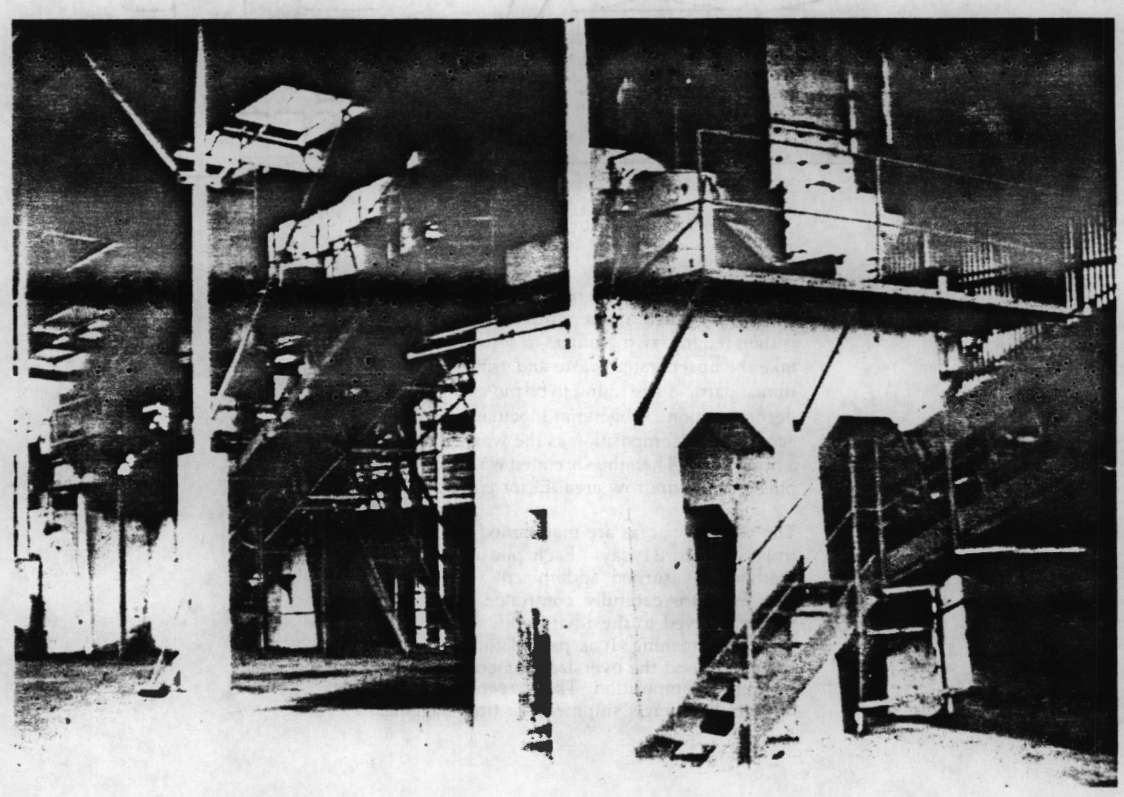


Incoming solid waste on first conveyor line, with bagged product in background. (Kingston, Jamaica)



No. 1 and No. 2 hammermills. (Kingston, Jamaica)

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found to be most efficient for the biological breakdown of the various types of waste.

Waste Decomposition (Composting)

The shredded waste is sprayed with a special bacterial inoculant to hasten the composting process. The waste then goes to the composting area where it is piled in "windrows" in a closed building on a concrete floor. There, through careful control of temperature and moisture, the waste is biologically broken down in about 21 days. The bacterial action is aerobic (with oxygen present), which prevents the formation of odorous gases. It also generates temperatures in the composting piles of approximately 170° F--high enough to destroy pathogenic bacteria.

The windrows are turned periodically during the composting process. The exact timing of the windrow turning is determined by the measurement of heat and moisture in the piles. Water is added during the turning process to adjust the moisture level, and oxygen is replenished as the turning aerates the decomposing waste. The only "odor" from the compost piles is the smell of damp, fresh earth.

Samples from each pile are tested in a laboratory at the plant to be sure they do not contain unacceptable levels of any pollutant or any potentially harmful element. If a compost pile is found to contain too much of some undesirable element, that pile is simply mixed with another pile until the undesirable element is so widely distributed that its level in the finished product is well within acceptable limits. If, on very rare occasions, a pile is found to contain a very high level of some undesirable element, that pile is removed and disposed of by other means.

Final Shredding and Screening

The finished compost is delivered from the composting area to a third hammermill where it is ground to its final size and screened to insure full elimination of all coarse particles. It is then either bagged or sent to bulk storage for later shipment by truck, rail, or ship. The screening process rejects about 15% of the material as too coarse, and the rejected material is blended with

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incoming waste and reprocessed to eventually achieve total recovery.

As a result of this shredding and composting process, the organic materials are converted into humus through aerobic decomposition, the metals are converted into small-grained metallic oxides by oxidation, and nonmetallic inert materials such as glass and plastic are ground into fine sand-like particles. The process reduces the weight of the incoming waste by about 30% (due primarily to loss of moisture) and reduces the volume by 70% to 80%.

ADVANTAGES OF THE SYSTEM

Total Waste Disposal. Virtually 100% of the incoming waste is converted into the salable end product. Only hazardous, toxic, or bulky items (which constitute less than 3% of the incoming waste) must be removed and disposed of in landfills or through other channels. Agripost's process does not require separation of metals, rubber, plastics, or glass from the organic materials, although separation of ferrous metals or aluminum is possible if the markets for such products make it financially desirable to do so.

Simple and Reliable. The process is not "high tech." All equipment is manufactured in the United States and is readily maintained and repaired, resulting in virtually no "down" time.

Not Energy Intensive. Very little power is used. Electric power is required only for grinding and screening equipment; and fuel is required only for mobile equipment such as dump trucks, front-end loaders, and pile-turning equipment.

Environmentally Safe. The process is free of any of the environmental problems characteristic of other disposal methods. No waste water is discharged from the plant except from personnel facilities (toilets and locker-room showers). All liquids from incoming waste are recycled into the windrow piles and consumed in the composting process. All phases of the process take place indoors (no blowing litter) on thick concrete floors (no leachates); and the high temperatures generated in the compost piles serve to prevent insects and rodents from taking up residence. Since nothing is burned, there are no emissions.

No Location Problems. An Agripost plant avoids the most difficult problem presented by other waste-disposal alternatives--where

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to put it. Because of its environmental compatibility, a plant can be located in any urban area where the garbage-truck traffic is acceptable. The plant is completely enclosed and represents an attractive, well-landscaped, and meticulously maintained addition to the community.

Fast Construction. From groundbreaking to full operation, an Agripost plant can be completed in about 15 months (12 for construction and 3 for plant shakedown).

Lower Costs. As compared with other waste-disposal alternatives, an Agripost plant is much less expensive. Because the process is simple and "low-tech," capital costs are much lower than burning facilities, while operating costs are also somewhat lower. As a result, the tipping fee a community must pay is usually only about 60% of the fee required for a mass-burn or RDF (refuse-derived fuel) plant of comparable capacity. Hauling costs are also reduced by siting the plant nearer to the sources of the waste.

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THE END PRODUCT - AGRISOIL

Agrisoil, the product made from Agripost's full waste-conversion process, is really a combination of products. First and foremost, it is a compost--about 60% of the product is decomposed organic material, with all of the moisture-retention and aeration properties of any good compost. When added to sandy soils, it will greatly enhance the ability of that soil to retain moisture and nutrients near the plant roots; and, when added to clay, it will break up or aerate such soils to enable moisture and nutrients to reach root systems.

But Agrisoil is much more than just a compost. It also contains substantial quantities of all the nutrients essential to plant growth. Agrisoil's origin--municipal solid waste (including food waste, paper, metal, glass, plastics, leather, rubber, lawn clippings, etc.)--provides a consistently wide range of elements in a form safe for commercial and consumer use. In addition to the major nutrients (nitrogen, phosphorus, and potassium), Agrisoil contains a blended spectrum of the 13 essential micronutrients such as magnesium, zinc, sulfur, manganese, iron, copper, molybdenum, and boron, all of which are necessary for plant nutrition and maturity and without which basic plant functions cannot take place. Agrisoil contains these and other necessary plant-growth elements in a harmonious, balanced blend. It is the presence of these trace elements in significant quantities which makes the product particularly effective.

Agrisoil also has other important attributes:

Texture. The product is free-flowing, even after long storage, and does not "cake" when moistened. This is partially the result of silica and mineral elements and nonbiodegradable materials that are received in the municipal waste. The product can be applied with a conventional spreader.

pH. The product's pH level can be controlled within a range of about 5.8 to 7.6 according to the needs of particular soils or

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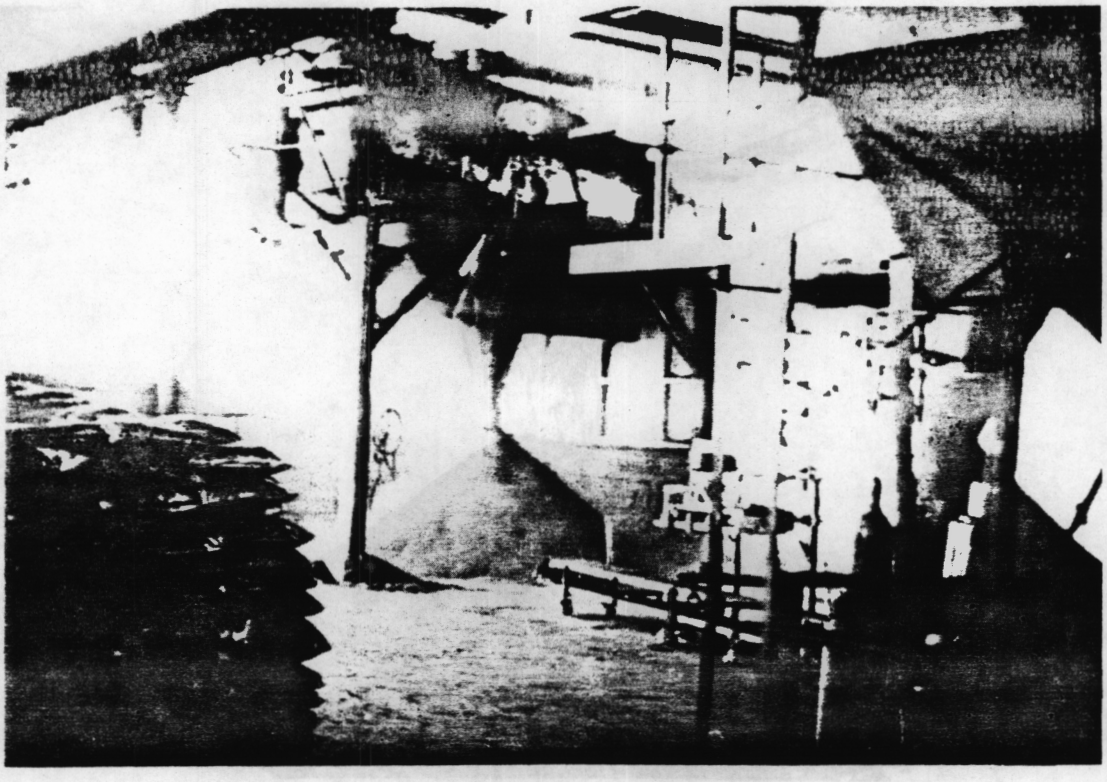

Final screening system. (Kingston, Jamaica)



Finished product ready for bulk shipment. (Jamaica)

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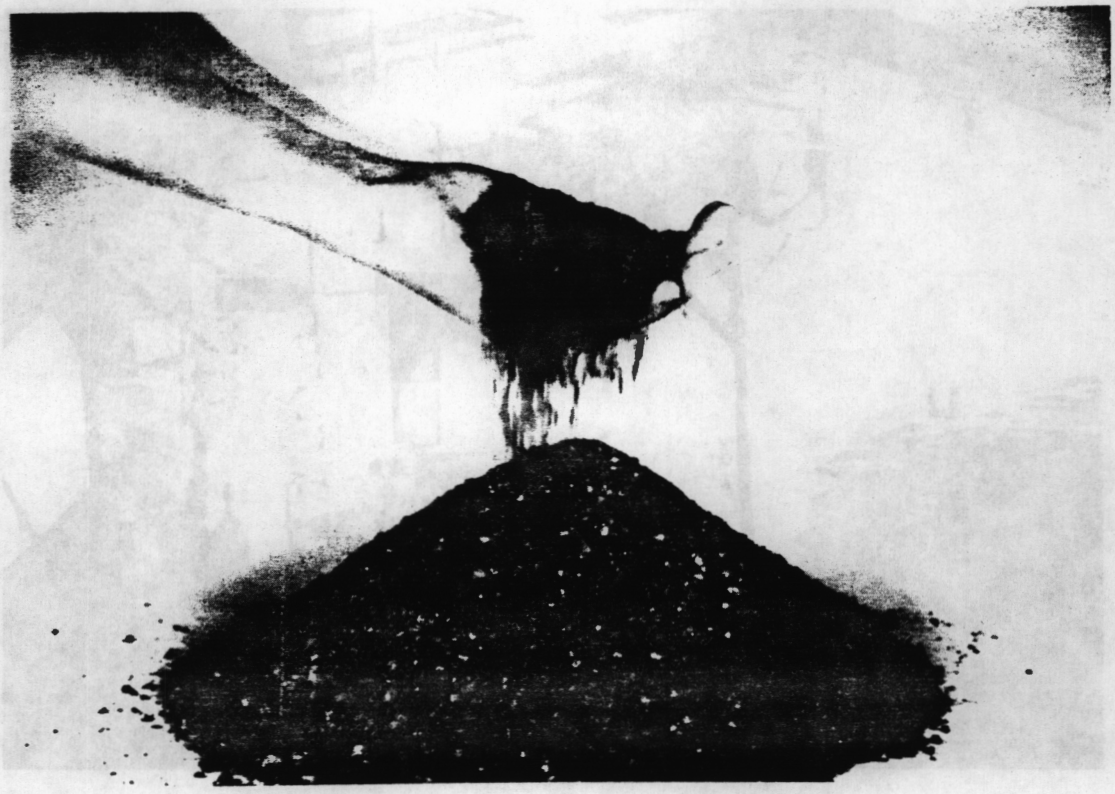
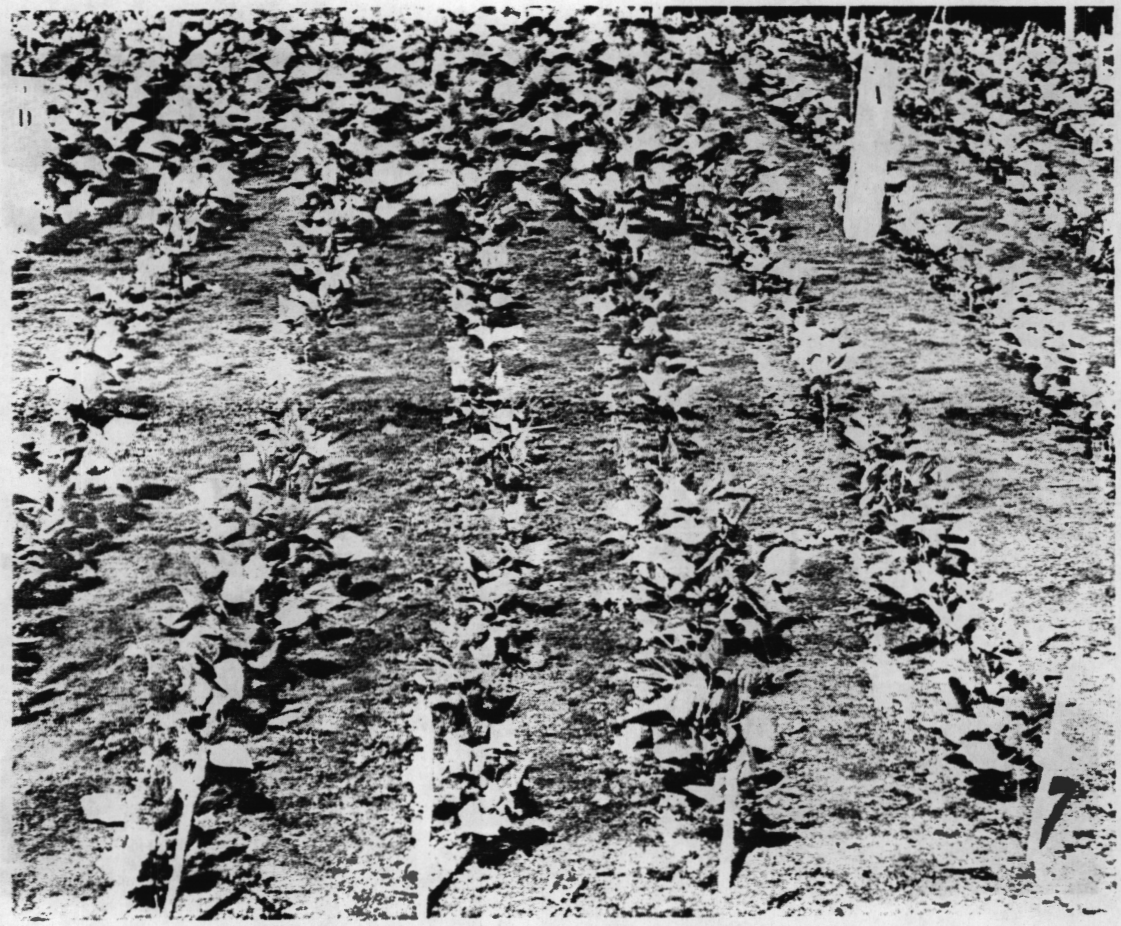


Commercial-grade fertilizer produced at Kingston facility.



University of West Indies field test showing
"Agrisoil" results in upper center. (Jamaica)

////X

crops. Unless otherwise requested, the delivered value will be close to neutral, about 6.8.

Color. The product is dark in color, similar to rich natural dirt or humus. In areas with sandy or rocky soils, the dark color has been found to raise soil temperatures at least 2% to 3% at night, increasing bacterial activity, stimulating growth, and retarding frost damage. It is even capable of reclaiming desert areas and turning them into arable land.

Elemental Release. Agrisoil's unique composition provides a combination of readily available and slow-release nutrients.

Safety. Agrisoil is absolutely safe for general application in agriculture and horticulture. In the 1960's, the National Bureau of Standards (U. S. Department of Commerce) determined Agrisoil to be nonhazardous for food-chain crops; and the U. S. Department of Agriculture approved the import of Agrisoil from the former Jamaican facility for nonrestrictive application in agriculture. Recent independent laboratory tests--including the EPA Priority Pollutants and Toxic Metals examinations--also show Agrisoil to be safe for use with all vegetation.

PRODUCT MARKETING

Agrisoil's markets are many and varied. To the fruit or vegetable farmer, it is fertilizer or soil amendment. To the nurseryman, it is a complete growing medium. To a greenskeeper, it is a top dressing or lawn treatment. To a landscaper, it is a filler for soil-poor areas. And to anyone with a green thumb, it is a rich potting soil or garden supplement.

During the operation of the McKeesport, Pennsylvania, facility, Agrisoil was successfully marketed as a registered fertilizer in Pennsylvania and New York under the "Orcoa" label. Under the "Sun Farm" label, the product was widely distributed from the Kingston, Jamaica, plant into Caribbean and U.S. markets. Florida proved to be a particularly successful market as the product provided not only natural elements for fertilization but also a soil-like medium for plant support.

PLANT OWNERSHIP AND OPERATION

Numerous arrangements are possible regarding the ownership and operation of an Agripost plant. If the community wishes, or if multiple communities are involved, Agripost will finance, construct, and own the plant, either directly or through a partnership with local sponsors. If the community prefers to finance and own the plant, Agripost will design and construct the plant and then sell it to the community on a "turnkey" basis. Financing through industrial development bonds is also possible, which may achieve the savings of tax-exempt financing while avoiding the responsibilities of community ownership.

Whatever the form of ownership, Agripost or its designee will operate the plant under a long-term operating contract and will market the end product through its own marketing network. In this way, Agripost will be able to assure that every plant is operated properly in order to produce an end product of consistent high quality.

Agripost will not be involved in the collection of garbage and trash or its delivery to the plant. Instead, Agripost will receive waste from existing collection organizations who will pay a tipping fee to dispose of their waste at the Agripost plant. The tipping fees will usually be set in long-term agreements between Agripost and the originating community or collection agency. The fees will vary depending on the size, location, ownership, and financing of the plant.

1113x



Dade County lime grove receives top-coat application of Agrisoil.

AGRIPOST, INC.

Agripost, Inc., is a Florida corporation with principal offices in Pompano Beach, Florida. It is a public company, and its stock is traded nationally on the Over-The-Counter market.

ADDRESS

1301 West Copans Road (Building C), Pompano Beach, Florida 33064

MAILING ADDRESS

P. O. Box 2449, Pompano Beach, Florida 33061

PHONE: 305-971-9167 TELECOPY: 305-971-9669

FINANCIAL

As a publicly held corporation, Agripost is required to file annual reports with the Securities and Exchange Commission. Copies of these reports are available on request.

DIRECTORS

John O. Forrer Edward C. West Robert H. Bischoff

OFFICERS

John O. Forrer - Chairman
Edward C. West - President
Robert H. Bischoff - Secretary/Treasurer
David J. Smith - Vice President/Marketing
Carol Lynn Gerald - Assistant Secretary/Administration

TECHNICAL CONSULTANT

Howard Burr

STOCK TRANSFER AGENT

Contintental Stock Transfer & Trust Company, 72 Reade Street, New York, New York 10007.

AUDITORS

Arthur Andersen & Company, Miami, Florida

1115X

PROPOSAL

FOR A

RECYCLING AND WASTE PROCESSING FACILITY

FOR

ATLANTIC COUNTY,

NEW JERSEY

Sample

Prepared By:

A.W.A.R.E

America's Waste and Recycling Effort
8302 Dunwoody Place, Suite 150
Atlanta, Georgia 30338

1116X

Sample

1.0 ATLANTIC COUNTY, NEW JERSEY

1.1 EXECUTIVE SUMMARY

1.2 PROPOSER

(A.W.A.R.E, Inc.) America's Waste and Recycling Effort, Incorporated, a privately held company with Corporate Headquarters in Atlanta, Georgia proposes to finance, design, have constructed and own and operate a Reuter Recycling and Waste Processing Facility in and for Atlantic County, New Jersey.

The entire investment will be 100% financed by A.W.A.R.E. No public funds are needed and there is no risk to the County, except the contingent liability of guaranteeing the waste flow to the plant and the terms and conditions of a long-term disposal contract and tipping fee.

1.3 PROPOSAL

A.W.A.R.E proposes to reduce by up to 90% the landfilling of solid waste by Atlantic County through utilization of the Reuter Recycling and Waste Processing technology.

The A.W.A.R.E facility would be capable of accepting and processing one thousand tons per day, 1,000 TPD, of acceptable municipal and commercial solid waste.

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It is anticipated that the delivery of an average of seven hundred tons per day, 700 TPD, of acceptable municipal solid waste, MSW, would be contracted for and guaranteed by Atlantic County under a "put or pay" agreement, for a period of twenty (20) years.

The facility would thus have the capacity to handle not only the variations in the waste stream from the summer tourist influx, but also the additional trash flow expected to be generated by the continued growth in Atlantic County.

In the interim, the facility would receive acceptable commercial trash from private haulers located within Atlantic County. The facility would therefore be self-sufficient and there would be NO IMPORTING of refuse from outside the County.

The A.W.A.R.E facility is intended to complement and support the existing County, private and local Recycling Programs to ensure the maximum in materials recovery and landfill abatement. The facility would have the space and capacity to also operate as an Intermediate Processing Facility, IPF, in lieu of or to take the overflow from your current IPF.

1118X

1.4 A.W.A.R.E is proposing the use of the proven Reuter Recycling and Waste Processing Technology to process the MSW into readily-marketable commodities.

Plastics, corrugated, aluminum, ferrous, bi-metal, papers and glass will be sorted from the wastestream and processed for sale.

The combustible fraction will be processed and pelletized into RDF fluff and dRDF fuel pellets, a viable and marketable product utilized in coal burning industrial applications to reduce, in direct proportion to use, sulfur emissions.

The organic fine fraction will be composted for garden use and landfill cover.

1.5 SITING

The proposed location for the facility is the current Atlantic County landfill or an existing landfill site to eliminate the need for new permits and the ensuing problems, delays and inevitable complications. This site would significantly reduce the lead time until start-up of the new facility.

11/9Y

The current landfill will cease operation in September of 1990 and AWARE proposes an opening at the site of 5 to 10 acres to handle the County refuse until the new facility is in operation and to accept the 10 to 15% residue from the initial operation of the plant.

Once in operation, AWARE would begin the reclaiming of the site so that space would be available to accept the normal plant residue.

AWARE would be responsible for all of their own closures. The County would be responsible for all others.

1.6 FACILITY

The facility would be capable of processing 1,000 TPD of MSW using the Reuter Recycling Process to separate and recover plastics, corrugated, paper, metals, aluminum, glass and ferrous, and to produce RDF fluff and pellets and compost for resale. The AWARE facility will be recycling 85 to 90% of the MSW received.

The facility will consist of two structures: one for processing of MSW and materials recovery and the other for production of compost.

The materials recovery facility will be fully enclosed, insulated and ventilated. It will include an indoor tipping floor for the receipt of MSW, separate processing area for recovery plus an office, control room, and maintenance shop.

1120X

The composting facility will be a covered structure with windrow, processing and loading equipment.

All structures will be in compliance with the Building Officials Code Administration (BOCA) and the building regulations and code of the State of New Jersey and Atlantic County. They will be environmentally sound, aesthetically pleasing and constructed in accordance with current standards and codes.

Qualified and acceptable Atlantic County construction firms and sub-contractors will be used wherever possible in the construction of the facility, contributing to the economic growth and development of the County.

In addition, AWARE will utilize qualified minority-owned business (MBE) and woman-owned business (WBE) enterprises wherever possible.

1.7 TIP FEES

The proposed tipping fee for the facility, based on location at the current landfill site, is $ per ton. This fee is based on a quick response to the proposal and the assistance of the County in the Permit process.

The proposed fee is based on beginning operation of the plant in May, 1991.

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The proposed fee would be subject to periodic increases during the 20 year proposed contract, based on the consumer price index (CPI), plus other variables subject to the negotiation and agreement of both parties.

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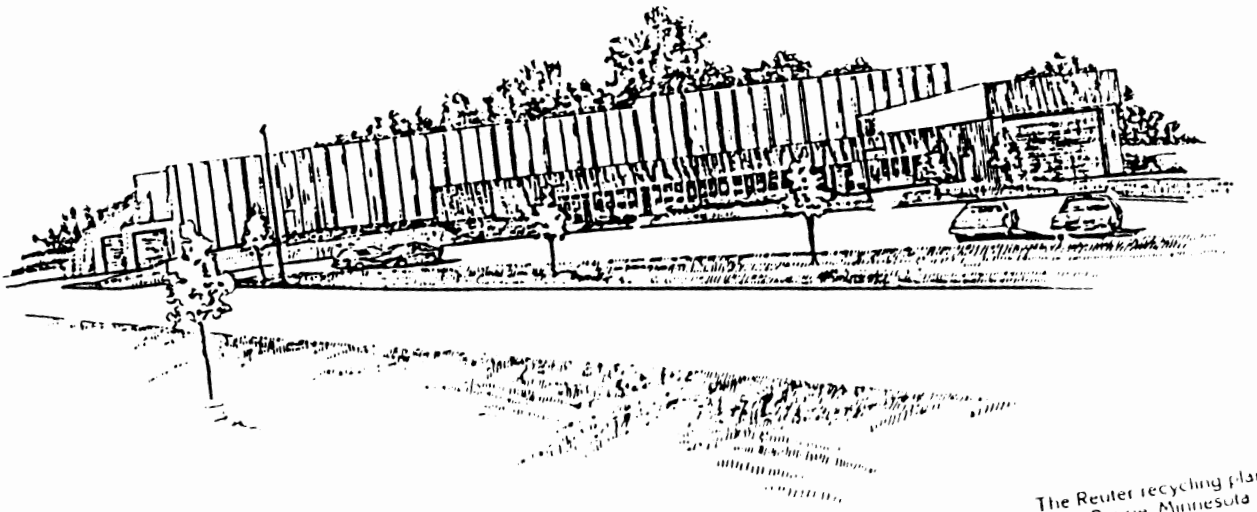


The Reuter recycling plant in Eden Prairie, Minnesota

1123X

2.0 PROPOSER QUALIFICATIONS

2.1 A.W.A.R.E has the experience, stability and financial strength to build, own and operate the proposed Recycling and Waste Processing Facility. Additionally, our associate, Reuter has been in the solid waste business for over 20 years and has supplied over 125 municipal accounts nationally with its solid waste mechanized collection system products and services. It is a long established public company with an excellent reputation for quality and service.

Reuter, Inc. owns and operates a 400/800 TPD Materials Recovery Facility designed to recover plastics, corrugated, paper, aluminum, metals, organic residues for composting and produces three types of RDF. The facility is located in Eden Prairie, Minnesota and is the most advanced recycling operation in the world.

Reuter, Inc. is also in the permitting processs for a 660 TPD Recycling and Waste Processing Facility in Pembroke Pines, Florida. This Reuter own and operate Municipal project is scheduled for start up in late 1990.

Reuter, Inc. is also in the permitting process for a 300 TPD compost project in Minnesota. Anticipated start up for this own and operate project is mid 1990.

2.2 A.W.A.R.E has purchased Reuter technology and is totally committed to the recycling effort.

1124x

3.0 PROPOSAL

3.1 A.W.A.R.E proposes to reduce by up to 90% the landfilling of solid waste by Atlantic County through utilization of the Reuter Recycling and Waste Processing technology.

3.2 The A.W.A.R.E facility would be capable of accepting and processing one thousand tons per day, 1,000 TPD, of acceptable municipal and commercial solid waste.

It is anticipated that the delivery of an average of seven hundred tons per day, 700 TPD, of acceptable municipal solid waste, MSW, would be contracted for and guaranteed by Atlantic County under a "put or pay" agreement, for a period of twenty (20) years.

The facility would thus have the capacity to handle not only the variations in the waste stream from the summer tourist influx, but also the additional trash flow expected to be generated by the continued growth in Atlantic County.

In the interim, the facility would receive acceptable commercial trash from private haulers located within Atlantic County. The facility would therefore be self-sufficient and there would be NO IMPORTING of refuse from outside the County.

The A.W.A.R.E facility is intended to complement and support the existing County, private and local Recycling Programs to ensure the maximum in materials recovery and landfill

1125X

abatement. The facility would have the space and capacity to also operate as an Intermediate Processing Facility, IPF, in lieu of or to take the overflow from your current IPF.

3.3 A.W.A.R.E, Inc., in conjunction with Reuter. will design the process, construct the plant, supply all equipment, be responsible for all capital investment and financing and own and operate the facility.

3.4 A.W.A.R.E will be the prime contractor for the proposed Recycling and Waste Processing Facility. A.W.A.R.E will own and operate the facility and will market the recovered products. The contractual relationship by the County will be with A.W.A.R.E, Inc.

3.5 The primary products to be marketed are dRDF pellets and/or fluff and/or composting and recyclable materials. The actual sales will be conducted by A.W.A.R.E. The material recovery process will be in a fully-enclosed building. The markets for the recyclables, such as corrugated, HDPE, PET and FILM plastics, aluminum, glass and ferrous metal along with the fuel pellets and compost product are well established.

3.6 The immediate local area will be given priority as far as construction and operational jobs, contracts and purchases for the facility. All of the equipment will be made in the U.S. Certain support equipment, such as balers, trucks and material handling equipment can be purchased locally.

The plant operation will create approximately 180 new jobs (two shifts), plus a Saturday shift, assuming a 1,000 TPD operation. Local unemployed and economically-disadvantaged will be hired if they are qualified and capable of accepting the conditions of the workplace.

1127X

4.0 PROCESSING SYSTEM DESCRIPTION

4.1 Capacity - A.W.A.R.E is proposing a facility with a throughput capacity of 1,000 tons per day of acceptable MSW during a twelve month period. Annual throughput is proposed as 312,000 tons per year (TPY) in the Base Case using six days for processing and receiving.

4.2 Acceptable Waste Description - The definition of acceptable solid waste is described as:

- Domestic refuse proper, sometimes referred to as garbage, i.e., kitchen wastes, dirt of all sorts collected by sweeping, raps, paper, cartons, tins, various packaging materials, glass and crockery, ashes, etc.
- Wastes resulting from the running of restaurants, bars, hotels, theaters, sports stadiums, and public assembly places in general.
- Wastes resulting from offices, storage places, warehouses, and other buildings.
- Wastes/rubber/litter - resulting from cleaning the markets, public gardens and parks, official buildings, excluding, of course, biologically dangerous wastes.
- Rubbish/litter resulting from cleaning the streets, squares, places in front of buildings, private roads and gardens.

1128x

Excluded from the list are:

- o Industrial wastes, objects that are too bulky, as well as objects which could conceivably cause damage to the machines of the plant.
- o Wastes such as earth, sand, concrete, construction, or demolition materials resulting from private or public construction or demolition.
- o Inflammable and/or explosive gases, liquids and solids.
- o Anatomic wastes, dangerous wastes from medical and veterinarian laboratories, etc., as well as all radioactive wastes.

In addition to the excluded items listed above, certain material should be separated from the waste stream in the receiving area prior to feeding them into the processing equipment:

- o Oversize, bulky waste such as furniture, mattresses, appliances, bicycles, etc.
- o Carpets, tires, ropes, hoses.
- o Industrial textiles, industrial plastics.
- o Large quantities of steel strapping.
- o Solid iron parts.
- o Tree stumps or timber greater than 1" diameter.
- o Rubble, stone, construction and demolition debris in large quantities.
- o Any part in one dimension larger than 36".

The bulk density of the solid waste should be approximately 9 - 12 lbs. per cubic foot.

1129x

4.3 Process - All process steps described below are shown on the Flow Sheet, Table 4.6 and Process Diagram, Figure 4.7.

1. Collection trucks enter the building and stop at scale for weighing. The scale is computerized and tare weights of all trucks using the facility are prerecorded. Each driver has a plastic identification card with coded information imprinted on it for billing purposes. No truck can enter the facility without an account or designation. After weighing, the truck is directed to its tipping spot by the front-end loader operator.

2. Solid waste is dumped directly on the tipping floor and loaded into the feeding hoppers by the front-end loader. Large bulky items, appliances, batteries, tires, mattresses and any hazardous items harmful to personnel or machinery are pushed aside. Appliances and hazardous wastes, like pesticides, herbicide, and chemicals are stockpiled for further processing and disposal, as per State regulations.

3. The front-end loader alternately loads the two feeding hoppers with solid waste.

4. Refuse is carried from the receiving hopper by a slat-type conveyor (2) to the rotary drum screen (3), where it is sorted to size into fine waste less than 30 mm (less than 1 1/4"), a medium fraction from 30 to 20 mm (1 1/4 - 8") and a large fraction over 200 mm (8"+).

1130X

5. Fine waste is conveyed from the building for removal to a landfill or for further treatment as compost. Glass is removed from this fraction by glass separation equipment.

6. Medium and large fractions are both carried over conveyors where workers (4) remove by hand-picking, such products as aluminum, plastics, other recyclable materials and any materials such as gas cans, aerosol cans, etc. that could cause explosions in the hammer mill.

7. The large fraction portion is conveyed to a hammer mill (5) where it is reduced to a size similar to the medium fraction. This is mixed with the mediums on a belt conveyor which is fed into the air classifiers. Here fractions unsuitable for pelletizing are removed.

8. At this point, the large fractions are subjected to primary ferrous metal removal (6) by magnets. The ferrous materials are conveyed to a secondary magnetic separator (7) to further separate foreign materials from the metal before discharging into the storage bin.

9. The RDF is run through a splitter box where it passes over vibrating pads for even distribution into the air classifiers.

10. In the air classifiers, heavy material falls to the bottom, is fed through a rotary air lock and conveyed out to a heavy parts loading station for landfill disposal.

11. Lighter material leaves the top of the air classifier and is conveyed pneumatically to a cyclone separator (9), then fed through an airlock for conveying to a secondary shredder (10) for final size reduction.

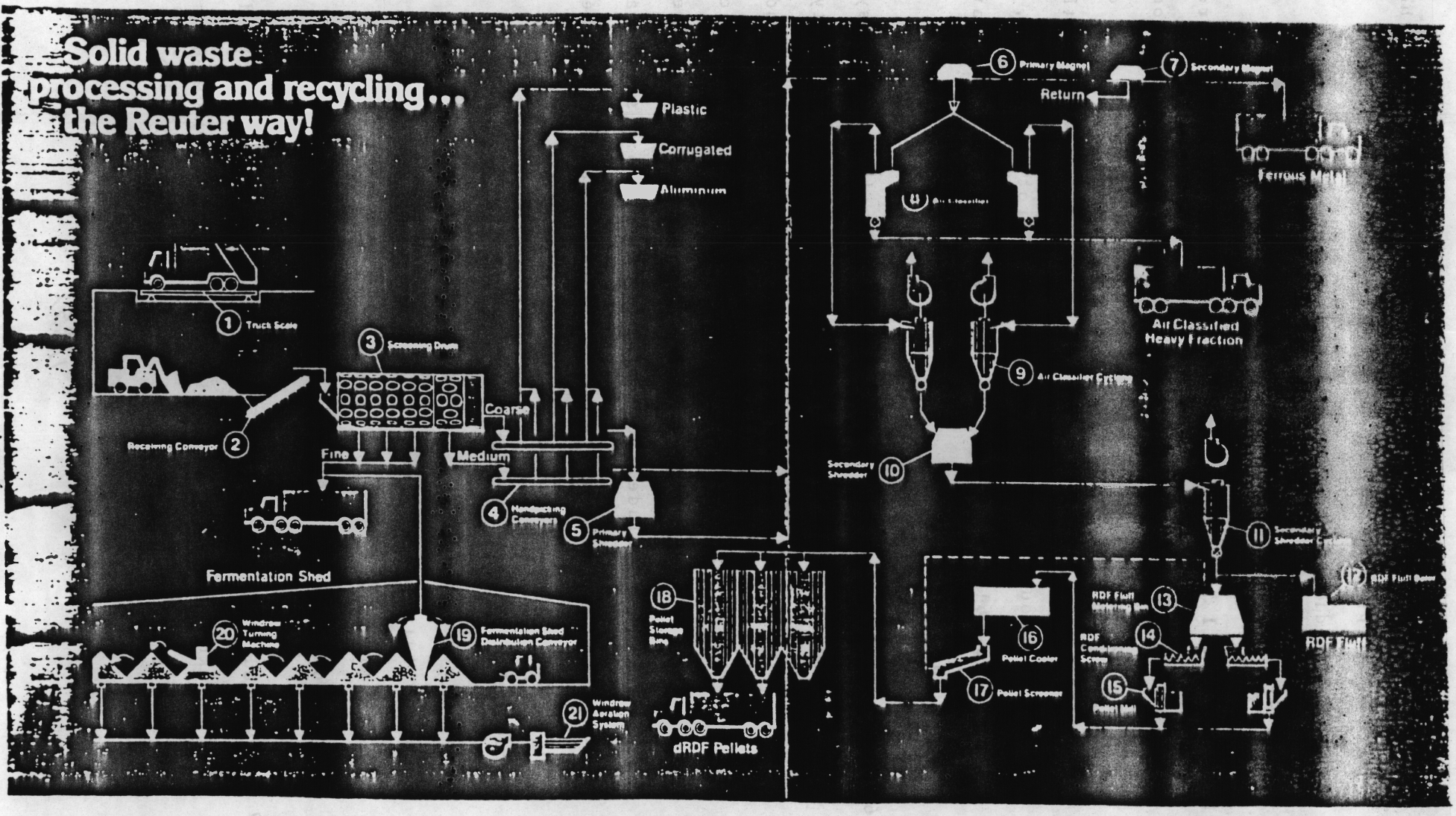
12. A bag-type filter is used to filter dust from the pneumatic air streams on a partial flow basis.

13. Material discharged from the secondary shredder is refuse derived fuel (RDF) in "fluff" form and goes to the densifier (15) for pelletization into dRDF.

TABLE 4.6

Process Flow Sheet

Municipal Solid Waste	
Receiving	Non-Processables
	Corrugated
	Oversize Ferrous
Primary Screening	Fines
	Mediums
	Coarse
Fines	Composting
Handpicking Mediums/Coarse	Corrugated
	Plastics
	Aluminum
	Bi-Metal
Primary Shredding	
Magnetic Separation	Ferrous
Air Classification	
Secondary Shredding	
Density	Fluff/dRDF


Solid waste processing and recycling... the Reuter way!
Plastic
Corrugated
Aluminium
1 Truck Scale
2 Receiving Conveyor
3 Screening Drum
Coarse
Medium
Fine
4 Handpicking Conveyors
5 Primary Shredder
Fermentation Shed
20 Windrow Turning Machine
19 Fermentation Shed Distribution Conveyor
21 Windrow Aeration System
18 Pellet Storage Bins
dRDF Pellets
6 Primary Magnet
7 Secondary Magnet
Return
Ferrous Metal
8 Air Classifier
Air Classified Heavy Fraction
9 Air Classifier Cyclone
Secondary Shredder 10
11 Secondary Shredder Cyclone
17 RDF Fluff Baler
RDF Fluff
RDF Fluff Metering Bin 13
RDF Conditioning Screw 14
15 Pellet Mill
16 Pellet Cooler
17 Pellet Screener

1134x

4.4 Hazardous Wastes will be removed at three points in the process:

1. Tipping Floor
2. Medium Fraction hand - pick conveyor
3. Large Fraction hand - pick conveyor

4.5 Any and all suspected hazardous waste materials not previously detected and removed will be identified, separated from the waste stream, isolated and returned to the County for disposal at their cost. The disposal of unacceptable waste (other than hazardous), process residue, and process rejects, and nonprocessable waste will be handled and disposed of at the landfill.

4.6 A.W.A.R.E will establish and maintain an information system to provide data storage and ready retrieval of facility operating data. The operating company will prepare and maintain proper, accurate, and complete records and accounts of all waste transactions related to the facility. These records shall include, but not be limited to: safety and accident reports; quantity of acceptable waste delivered to the facility; quantity of compost, recovered materials produced and sold, and quantity of residue generated. Information shall also be made available to the County to provide future estimates for waste management. Access to the facility by County officials shall be unrestricted during normal operating hours.

4.7 A typical mass balance is shown in Table 4-9 as derived from the breakout of recyclables and product from the Reuter Eden Prairie facility.

1135x

TABLE 4-9

Processed Recyclables from Reuter Eden Prairie Plant:

Aluminum	1.1%
Corrugated	10.0%
Plastics (HDPE, PET, FILM)	7.0%
Bi-Metal	.5%
Ferrous	3.0%
Fluff/Pellets	40.0%
Fines	25.0%
Non-Processables	13.4%

1136x

5.0 SITING

5.1 The proposed location for the facility is the current Atlantic County landfill or an existing landfill site to eliminate the need for new permits and the ensuing problems, delays and inevitable complications. This site would significantly reduce the lead time until start-up of the new facility.

The current landfill will cease operation in September of 1990 and AWARE proposes an opening at the site of 5 to 10 acres to handle the County refuse until the new facility is in operation and to accept the 10 to 15% residue from the initial operation of the plant.

Once in operation, AWARE would begin the reclaiming of the site so that space would be available to accept the normal plant residue.

AWARE would be responsible for all of their own closures. The County would be responsible for all others.

5.2 General Site Criteria - The following factors, conditions, and environmental issues concerning the site are discussed for review and consideration by the County:

- o The optimum site size for the recycling operation including the two buildings, parking, berming and landscaping, etc., is 50 acres. The entire operation could be placed on a much smaller parcel of land dependent upon the actual location at your landfill. This would be subject to consideration and discussion during the negotiation phase.

1137X

- Rough grading for structural elements a minimum of 6 feet above any existing water table.

- The building site should be essentially flat with 1% slopes under any proposed structure locations.

- Soil compaction to a minimum 3,000 lbs. and drainage improvements such that the soils may saturate only briefly during periods of heavy rain. The areas should be classified as at least a 100 year flood plain areas or better, and not be subject to localized flooding during storms. If localized flooding is projected, the location of the site must be such that no structures may be impacted.

- The availability and sizing of all utilities to the site is proposed to be by the County. Sewer requirements for people employed by A.W.A.R.E should be provided by the system. An inplace fire protection system will be required.

- All environmental issues will be addressed while obtaining the necessary permits and approvals. As for the noise impact, it will largely be limited to the movement of trucks into and through the vehicle stacking line of the receiving area and is expected to be clearly within acceptable standards of current local and state ambient noise levels.

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- As part of the permitting process, all appropriate agencies will be contacted for review and comment purposes as part of the environmental review process.

1139x

6.0 FACILITY

6.1 The facility would be capable of processing 1,000 TPD of MSW using the Reuter Recycling Process to separate and recover plastics, corrugated, paper, metals, aluminum, glass and ferrous, and to produce RDF fluff and pellets and compost for resale. The AWARE facility will be recycling 85 to 90% of the MSW received.

6.2 The facility will consist of two structures: one for processing of MSW and materials recovery and the other for production of compost.

The materials recovery facility will be fully enclosed, insulated and ventilated. It will include an indoor tipping floor for the receipt of MSW, separate processing area for recovery plus an office, control room, and maintenance shop.

The composting facility will be a covered structure with windrow, processing and loading equipment.

6.3 FACILITY CONSTRUCTION

The type of construction used shall be in accordance with currently accepted design practices and weather conditions for the Atlantic County area. Design and materials shall be selected such that the cost of maintenance for the

building and equipment shall be kept at an economic minimum over the life of the facility and shall be of a building material consistent with local ordinances.

All structures will be in compliance with the Building Officials Code Administration (BOCA) and the building regulations and code of the State of New Jersey and Atlantic County. They will be environmentally sound, aesthetically pleasing and constructed in accordance with current standards and codes.

All structures will be designed and constructed in accordance with the following current standards and building codes. Where local codes and standards are in conflict with any of the codes and standards listed below, the more conservative requirements shall govern a specific design area.

Standards and Codes:

ASTM - American Society for Testing Materials

AISC - American Institute of Steel Construction

AWS - American Welding Society

NAAM - National Association of Architectural Manufacturers

SSPC - Steel Structures Painting Council

ACI - American Concrete Institute

ANSI - American National Standards Institute

UBC - Uniform Building Code

1141x

The detailed specifications and schedules related to the procurement of equipment, concrete, airduct, internal building, surfacing materials, embeds, structural steel, non-structural steel, electrical, underground utilities, interface points, subsurface soil conditioning requests, backfilling, air purification system, painting and finishing, doors, windows and sealing materials under the responsibility to the General Contractor plus the responsibilities of the County in the supply of utilities lines and connections will be assembled and discussed during the negotiation phase.

Qualified and acceptable Atlantic County construction firms and sub-contractors will be used wherever possible in the construction of the facility, contributing to the economic growth and development of the County.

In addition, AWARE will utilize qualified minority-owned business (MBE) and woman-owned business (WBE) enterprises wherever possible.

6.4 FACILITY OPERATIONS

6.4.1 All acceptable residential and commercial solid waste will be processed except hazardous/toxic, demolition waste, and in general items which do not represent common trash, (i.e., cars, refrigerators, etc.). If hazardous or demolition waste is encountered, it will be separated on the

1142x

tipping floor and by the handpicking operation and returned to the County or the private hauler to be disposed of at their expense. See Section 4.2 for a further definition of acceptable solid waste.

6.4.2 Scheduling - The solid waste to be delivered would arrive at the facility throughout the day. Unloading time is estimated at six to eight minutes per vehicle, assuming no unusual situational delays. The queuing areas will be of generous design in order to prevent any backup on to public roads. Both tip-up and end dumping vehicles which are planned for by our design.

6.4.3 Storage - The process building tipping floor will have a storage capacity for holding approximately two (2) days of solid waste.

6.4.4 Security - No persons will be allowed to enter the A.W.A.R.E plant without authorization or an identification card. The entire project area is to be fenced with a single entrance and exit point.

6.4.5 Housekeeping - The tipping floor, processing, and recycling area and all other areas built and operated by A.W.A.R.E will be cleaned regularly. The outside yard will be policed daily by A.W.A.R.E for wind-blown papers and debris. Internal walls, machinery, and piping will be periodically cleaned and kept painted.

6.4.6 Out storage - No unprocessed wastes will be stored outdoors on site, unless there is an emergency situation. We will notify the County immediately of any such occurrence.

1144X

7.0 TIP FEES

The proposed tipping fee for the facility, based on location at the current landfill site, is $ per ton. This fee is based on a quick response to the proposal and the assistance of the County in the Permit process.

7.1 The proposed fee is based on beginning operation of the plant in May, 1991.

7.2 The proposed fee would be subject to periodic increases during the 20 year proposed contract, based on the consumer price index (CPI), plus other variables subject to the negotiation and agreement of both parties.

7.3 At the end of the proposed 20 year contract period, A.W.A.R.E is prepared to sell the facility to the County under mutually agreeable terms and conditions should the County so desire, or to continue operating, based on a new agreement for the delivery of solid waste.

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8.0 PROJECT ORGANIZATION

Project Organization - A.W.A.R.E will be the prime contractor for the proposed Recycling and Waste Processing Facility and is the legal entity with whom any contract would be entered into with Atlantic County.

A.W.A.R.E will finance, own and operate the Reuter turnkey project. A.W.A.R.E will be assisted by members of the project team as well as Reuter, Inc. to accomplish these objectives, and will retain the ultimate responsibility and authority for implementing the project.

A.W.A.R.E will use staff engineers and administrative personnel assisted by a local consulting firm or firms, to secure the necessary permits for the project as well as to prepare the design specifications for the environmental, civil, and architectural disciplines.

A.W.A.R.E will also provide the management structure for the operations of the facility and marketing of the by-products. The management plan objectives to accomplish this function are fully described below.

The Project Team will be selected and organized to fit the specific project requirements and schedule for Atlantic County. Project monitoring designed to address any problems that may be encountered and how they would be rectified are included in the narrative below.

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The management plan objectives by scope of work are as follows:

(1) PROPOSAL PHASE - During the proposal phase, A.W.A.R.E has designated Mr. Russell P. Hughes as the primary client contact responsible for the preparation and presentation of the complete project proposal. Each of the other team members will supply technical and support personnel and data as requested and are available to present the proposal and respond to questions.

(2) NEGOTIATIONS/CONTRACT/FINANCE PHASE - A.W.A.R.E is the contracting entity and will call upon other team members for data, evaluation, specific contract provisions and commitments and other participation as required.

(3) PERMITS/APPLICATION/APPROVALS PHASE - A.W.A.R.E and a locally hired consultant will be responsible for all applications and presentations to public and regulatory agencies requiring approval and will communicate conditions and terms of the permits to the design and operations team and other involved parties.

(4) DESIGN/SPECIFICATION PHASE - The Design Phase of the project generally begins when the notice to proceed is received. An A.W.A.R.E Project Manager will be responsible for the management of detail design for the site and facility

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construction. A.W.A.R.E will be responsible for the process design, specifications, procurement, and testing of the equipment. A.W.A.R.E will coordinate the civil, structural detail design efforts, selection of the General Contractor and all direct communication with the County.

(5) CONSTRUCTION PHASE - The A.W.A.R.E team and a local consultant will complete all applicable Federal, State and local environmental and non-environmental permits and approvals necessary for the construction and operation of the facility and select a General Contractor. An A.W.A.R.E Project Manager will be responsible for management of the entire project during the construction phase. A.W.A.R.E will coordinate delivery and installation of the equipment with the A.W.A.R.E Project Manager, Reuter, Inc. and the General Contractor's Project Manager.

(6) SHAKEDOWN/START-UP PHASE - A.W.A.R.E in conjunction with Reuter, Inc. will be responsible for the Shakedown/ Start-Up Phase of the project. A.W.A.R.E will train operating management prior to this phase. A.W.A.R.E, Reuter and the General Contractor will deliver the facility to the operating entity upon successful completion of all operational testing requirements and plant acceptance by A.W.A.R.E.

(7) OPERATIONS - An A.W.A.R.E owned entity will be responsible for operations and maintenance of the accepted facility, excluding any County designed and constructed site or project elements.

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