Volume III

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

before

ASSEMBLY AGRICULTURE AND ENVIRONMENT COMMITTEE

on

TOMS RIVER EXPERIENCE - WATER POLLUTION AND RELATED ISSUES

Held:
March 25, 1982
Freeholders' Meeting Room
Ocean County Administrative Building
Toms River, New Jersey

MEMBERS OF COMMITTEE PRESENT:

Assemblyman Raymond J. Lesniak (Chairman)
Assemblyman Anthony S. Marsella

ALSO:

Norman Miller, Research Associate
Office of Legislative Services
Aide, Assembly Agriculture and Environment Committee

Mark O. Smith, Research Associate

Mark Connelly, Research Associate

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(Statements and other supporting documents related to the issues of these hearings comprise Volume IV.)

ASSEMBLYMAN RAYMOND J. LESNIAK (Chairman): Thank you for waiting, everyone. My name is Ray Lesniak. I am Chairman of the Assembly Agriculture and Environment Committee. To my left is Tony Marsella, Vice Chairman of the Committee. He is from Camden County. To my right is Norman Miller, our chief Committee Aide. To Tony's left is Mark Smith, also a Committee Aide.

What we are going to do today is hear testimony from the public and from representative groups in relevant areas concerning the quality of water that the people of the State of New Jersey drink. But, first, we have the Assistant Administrator of Ocean County, who was also a former Assemblywoman from Ocean County and soon to be Lottery Director, Hazel Gluck,who would like to say a few words.

H A Z E L G L U C K: Thank you, Ray. I am wearing the hat of the Acting Administrator of Ocean County right now. On behalf of the Ocean County Board of Chosen Freeholders and the people of the County, we thank you for coming here today. I welcome you to the county, and I thank you for your leadership in the Legislature with regard to the environmental problems that have particularly plagued our area as so many others, such as toxic waste and water supplies. We have Jackson and Plumsted and the Silverton Section of Toms River, and one of our own Assemblymen who is the Majority Leader, John Paul Doyle; we just want to thank you for all of the efforts you have made, and the leadership you have displayed and the Board is very happy you are here. Sometimes we in Ocean County feel we are ignored, so we are happy that you came here. Have a good day.

ASSEMBLYMAN LESNIAK: Thank you, Hazel. I would be the last one to ignore Ocean County and south Jersey. I do want to thank you for your hospitality, and please express our gratitude to the Board of Freeholders, and I want to thank you for your leadership in this area and for the legislation that you introduced in your term in the Assembly. Thank you very much.

What we are doing is going throughout the State of New Jersey, north and south Jersey, and asking the question, is our water safe to drink? Until recently many of us have never given much thought to that matter. For years we have trusted our taps and faucets. We associated the clear, cold water that flowed from those taps and faucets with cleanness and purity. But, when we turn on our taps and pour ourselves a tall, cool glass of water, we may actually be filling our glasses with poison.

New Jersey's groundwater sources are being contaminated at an alarming rate. I might add, the United States groundwater sources are being contaminated at an alarming rate, as a recent GAO study has revealed. The instances of tainted private wells and water systems serving scores of people are growing rapidly. Although our groundwater sources are hidden from sight, they are still very vulnerable to a variety of potentially deadly contaminants. The headlines and official reports serve as sad testimony to how the problem of groundwater contamination is literally coming to the surface.

Here in the Toms River area, we are very familiar - and I certainly don't have to recount - with the instances of problems of contaminated water that south Jersey residents have been plagued with.

In the State of New Jersey, 60% of our residents receive their water supplies from groundwater sources. Here in south Jersey it is over 90%. John Doyle wonders where that extra 10% actually is, because just about all of the water supply, at least in this area, of south Jersey comes from groundwater sources. Overshadowing our statewide dependency on vulnerable groundwater

supplies is the fact that New Jersey is one of the leading chemical producing states in the country, an industry which also produces millions of gallons of hazardous substances each year. The Environmental Protection Agency estimates that approximately 90% of all hazardous wastes are not discarded in an environmentally sound way.

Groundwater contamination may come from many other sources, from all types of industries, septic tanks, broken sewer lines, leaking leachating landfills, chemical spills, and as was investigated by this Committee at a public hearing in Trenton earlier this year, by leaking underground gasoline storage tanks.

Without an effective water testing program, we do not know how many New Jersey residents are now or will continue to drink harmful contaminants without knowing they are doing so.

The purpose of this hearing is to compile significant information from knowledgeable officials and the public who know first-hand the impact of this environmental tragedy. From today's testimony we will develop a legislative package to provide for comprehensive testing of water supplies to detect contamination by toxic substances and explore viable solutions for eliminating this menace to the health and safety of New Jersey residents. Whatever the course we take, preventative measures must accompany remedial actions if these threats to the well-being of present and future generations of state residents are to be eliminated.

At this time, I would like to call on someone who has been in the forefront of our efforts to clean up abandoned chemical dump sites in the state of New Jersey who has been in the forefront of our efforts to protect and prevent contamination from reaching in to water supplies and who has been a leader that I have looked up to in the General Assembly ever since I have been in office. It is a great honor for me to call as our first witness today Assemblyman John Paul Doyle.

A S S E M B L Y M A N J O H N P A U L D O Y L E: Good morning, Chairman Lesniak, Vice Chairman Marsella, and staff of your Committee and to those interested public. First let me say that I appreciate the opportunity you have given the citizens of Ocean County by bringing your Committee and in that manner in fact, government here to Toms River. I think that is most appropriate and I am glad this was possible.

Unfortunately, contamination of drinking water supplies by hazardous waste is something the people of Ocean County have had too much experience with and on a first-hand basis. To the residents of the Legler Section of Jackson Township, the Silverton and Pleasant Plains area of Dover Township in particular, the focus of daily life has been shifted from family, friends and work to a terrifying calculation of the parts per billion of unpronounceable chemical substances which appear in their drinking water. Concern over everyday matters suddenly becomes overshadowed by the fear for the health of family members, the value of the hard-earned equity in the family home, and for the seemingly impossible hope that affected individuals can do very much to correct this situation.

Let me say how that has really come about. Not more than two decades ago, the county stretched out over 600 then mostly rural miles, had barely 100,000 people. It provided a convenient place for what would now be illegal dumpers to bring chemicals and other wastes to areas that no people lived in, and no one had the foresight to think that people would live there.

Now, two decades later, we have gone from that sleepy area to having well over one-third of a million people. Many are in areas that were formerly so rural, and are now the sites of new subdivisions. These are people who for the most part came from urban areas to buy their first home to find out that lifetime dream of a home might be the source of poison every time they open the tap. So, that is the situation that we in Ocean County have found ourselves in as we belatedly have this environmental sensitivity that was not present in 1960; yet we are paying the price for what happened then.

As elected officials,we have a clear responsibility to take whatever measures may be necessary to protect the health and safety of our constituents. With respect to hazardous waste, it should be noted that in fact many actions have already been taken. New Jersey today does have many of the necessary measures in place. In 1976, then Assemblyman Dan Newman from this District and I sponsored the Spill Compensation and Control Act, a comprehensive program designed to remedy the effects of hazardous waste contamination and to compensate affected persons. Several years later, under your sponsorship, Mr. Lesniak, we broadened the scope of that fund to include "orphan" sites and imminent discharges, and required the chemical industry to increase its contributions to the fund. In addition, we have established a cradle-to-grave manifest system to track the movement of hazardous waste; we have provided $100 million in bond revenues to supplement clean-up funds already available, which was done with the bipartisan leadership, not only of yourself, and to which I played a small part, but also with Assemblyman John Bennett and Assemblywoman Hazel Gluck. We have mandated criminal penalties and stiff fines for illegal dumpers, and most recently we have provided for a rational process with full public participation for the siting and regulation of safe, modern hazardous waste treatment and disposal facilities.

But, as important as these measures are, much remains to be done. With respect to the identification and clean up of existing problems, we must continue to tap every resource available to insure adequate and speedy funding. And, we must provide financial support to the affected localities which must bear the cost of providing new water supply facilities. For this reason, I have introduced A-1043, which would provide $3 million in low interest loans to assist public and private water companies in this effort. This bill is being considered by the Assembly Revenue, Finance and Appropriations Committee today, and I urge your support of this measure when it reaches the General Assembly. In addition, I ask that you join with me in efforts to insure that the benefits of this low cost financing are passed on to homeowners, and I have already indicated my feelings in this regard to our Board of Public Utilities.

Let me again just emphasize what happens when all of a sudden we find there is a spill, as it happened in Legler, the situation I know you are most familiar with. The 200 homeowners stretched at that point, I think, 1.8 miles from the public water supply system and found that their supply system was poisoned. So, we had to find a method to stretch out the public water supply system. Unfortunately, that cost money and it got passed on to the homeowners. We are trying to use, to the best ability possible, the Spill Compensation Fund, the legislation we have shared sponsorship of,to provide them with the resources, so that they will not have to bear the brunt individually. It creates economic havoc on those citizens who are stretched to pay mortgage and utility bills to find out something they didn't expect or count on now has to be done.

We need to attack this problem from another angle. We must establish the capability to detect, at an early stage, the encroachment of contaminants on our water supplies. Accordingly, I heartily endorse the swift enactment of your bill, Mr. Lesniak, A-280, which requires periodic testing of public water supplies. In addition, I believe we must provide a fast and inexpensive way for homeowners with private wells to have their water regularly tested, so that peace of mind or timely action may be insured.

I also believe that we must establish a program to monitor the health of those people who have been exposed to contaminated water supplies. In that regard, we have taken an initial step by providing, under your sponsorship, Mr. Lesniak, for evaluating health threats and conducting preliminary diagnostic testing by a hazardous waste health care task force.

Let me add to that suggestion of yours something further. I intend to introduce legislation when the General Assembly goes back into session to specifically provide for the monitoring of the health of the people, like the residents of Silverton, who have lived with contaminated water supplies. Following the introduction of that legislation, I would request that the Committee give that measure the highest priority and I am ready to assist you in your deliberations.

Let me again depart and be more specific. In a case with which you might be familiar, Myanacki versus Mc Donald, it was ruled that potable water supply is impliedly warranted in the sale of a new house. What happens, though, with the sale of an existing house? We have, over the past few years, seen real estate contracts generally include a provision that the purchaser has the right to obtain a termite inspection, and if it discloses termite infestation or damage, that the seller would have certain responsibilities. There is a growing tendency to have in those kinds of contracts, home inspection services, whereby the purchaser has the right to have disclosed by an expert whether there is anything he should be apprised of. Given that trend and given that case with new construction and given the situation we have here in Ocean County, as well as other parts, perhaps it is time to provide a method by which that could be done on the sale of existing homes. I am aware that testing could be expensive. I am further aware that to the degree that you want to test for a wide spectrum of chemicals, it becomes even more expensive. I am aware that with the depth of the well it adds to the expense of the testing. But, nothing can be as expensive as the health dangers, the economic and emotional havoc that has been wrought by the situations we have had to confront in Ocean County.

I would think it therefore appropriate that a coalition of private concerns of the state, of the oil spill compensation fund,that affected municipalities should be able to be put together to provide that such testing be done on a universal basis, perhaps under a single contract, so again to reduce the cost so that people can plug into that kind of system and be assured that when they buy a house they are buying what their dream wanted to be, and not poison out of the tap. It is a very difficult situation and one that I am very pleased that has the knowledegeable and experienced leadership that you have provided in this area before, Mr. Lesniak, and I know with the help of your Vice Chairman, Mr. Marsella, and the other members of the Committee, you will consider the various thoughts that will be brought forth to you by the concerned public citizenry, and the business interest of this county and of the state today and at your other hearings, and hopefully together we can provide the necessary solution to this most dangerous problem. Thank you.

ASSEMBLYMAN LESNIAK: Thank you, John. I want to particularly thank you and Dan Newman for your sponsorship of the original Spill Compensation Fund, because it was that fund which provided most of the money necessary to start the clean-up, and clean up one site particularly in my district, but it was also used to start to clean up some 20 other sites throughout the State of New Jersey. And, it is right now still the only money provided, other than the Hazardous Waste Bond Issue, which we co-sponsored, for the clean up of hazardous dump sites, as we are still waiting for the Reagan Administration to get on with the Super Fund Program that we are so anxiously awaiting.

So, I want to thank you for that sponsorship. Tony, do you have any questions?

ASSEMBLYMAN MARSELLA: No, not at this time.

ASSEMBLYMAN LESNIAK: Thank you very much.

ASSEMBLYMAN DOYLE: I have another appointment in the Court House, and I will probably return here later in the day.

ASSEMBLYMAN LESNIAK: Thank you. At this time, we have a little treat, I think, which is a very revealing short program produced by ABC-TV, which just outlines in general some of the more salient points that we are addressing on this Committee regarding underground water contamination. So, if you would bear our indulgence, if you are not interested in watching, I have seen this once, and I want to see this again. It is very informative.

(At which time film shown.)

As you can see, if you don't know by now, we do have a monumental problem here in the State of New Jersey that we must address, and must address as soon as possible. I do want to say that New Jersey does have the most comprehensive program dealing with chemical wastes, and the clean-up of chemical dump sites by far in the nation. I testified in Atlanta, Georgia, last year at a National Conference of State Legislatures regarding New Jersey's program and was exposed to the other programs throughout the country. California just recently passed a law similar to our Spill Fund, which raises $10 million a year for the clean-up of chemical dumps in California. Now, we have already spent over $30 million in our program. We have appropriated since then over $35 million additionally. I dread to contemplate what other states are going to be up against in the next five or ten years, if they do not take the steps that we have taken in the last two, three, and four years.

We have passed a siting bill, which will enable us to establish criteria and develop environmentally sound disposal methods for hazardous waste generation. We export over 80% of the hazardous waste generated in the State of New Jersey. We do have an obligation to provide safe and environmentally sound disposal methods for the chemical industry, which is the largest industry in this State.

We have also passed a very tough law with severe criminal penalties for violation of DEP rules and regulations regarding any facet of handling hazardous wastes. We are now in the process of even strenghthening those laws, which will establish strict liability for anyone disposing of hazardous waste without the manifest system, and also criminal penalties for anyone knowingly or recklessly giving false or misleading information in any manifest system.

I will be introducing legislation requiring that any company dealing with chemicals or hazardous waste be cleared through a certificate of occupancy type process before they either transfer their assets or abandon their companies. That is happening all too frequently here in the State of New Jersey where companies dealing in chemicals are either selling and getting out, or just getting out and abandoning their sites and leaving a legacy, and that is what happened in Rockaway Township, a company that left some five years ago is suspected of being one of the major sources of the pollution of the water supply there.

We are also seeing in its infancy the Hazardous Waste Health Care Strike Force Team which we passed at the end of the last legislative session, and we hope to expand and improve upon in the future. It is a monumental task that we are up against. But, I am somewhat gratified that we are dealing with it. It is a problem that originated decades ago and went on for decades, and there are going to be some very difficult decisions that had to be made, and many of them are going to cost money and have to be paid for.

We will be legislating in the area of septic tank systems, which are a major source of contamination also, and with this legislative program, we hope to do our best to solve what is a very severe problem, as we all know, and that is contamination from many sources of water supplies.

At this time, I would like to call the Director of the Division of Water Quality for the State of New Jersey who has been dealing in this area for quite a few years, Arnold Schiffman.

A R N O L D S C H I F F M A N: Mr. Chairman, members of the Committee, I am going to discuss briefly groundwater pollution in New Jersey. What I just wanted to give you in addition to a copy of the presentation was one of the volumes from the State Water Supply Master Plan. This is one of the source documents. It has a good briefing of both surface water and groundwater in the State of New Jersey. The reason I mention surface water - although I am going to talk about groundwater pollution today - is that when it doesn't rain, where does the water in the streams come from? Water in the streams comes from groundwater when it doesn't rain. The stream is actually an expression of the water table. So, if you pollute the groundwater, you can also do a number on the streams. The two systems are connected.

ASSEMBLYMAN LESNIAK: But, the surface water sources are much more diluted; is that not correct?

MR. SCHIFFMAN: Yes, there is a good deal of dilution and other things that happen, but the problem of water pollution affects the ground and surface, although I am going to talk about groundwater pollution, obviously, today because of the location of this particular hearing.

ASSEMBLYMAN LESNIAK: The legislation that we have would apply to both sources.

MR. SCHIFFMAN: That's right. All legislation in general we talk about waters of the State of New Jersey which deal with surface and groundwater.

For many years, the problems of groundwater contamination were unrecognized and undetected and it was not too long ago the groundwater supplies were considered as a protected source of water and not readily subject to contamination as to compare to most people's popular conception of streams. The major reason for this was the difficulty in analyzing and understanding the groundwater system. From a practical standpoint, all one has to do to collect the water sample from the stream is to dip a suitable container into the stream. Collecting a groundwater

sample involves in addition to the container the drilling of a hole and construction of a well. The difference in time and cost is enormous.

Obtaining a water sample to test a stream, that is simple compared to finding the source of the contamination for the stream, and tracing it downstream. Now, for cases of groundwater pollution, the problem is even far more complex. After all, it is difficult to see underground. We have to use special geophysical equipment that provides clues to the subsurface movement of pollutants, and you have to install many wells to collect the samples.

In addition to the inherent technical problems of ground water pollution, there are substantial shortages of trained ground water specialists. It is estimated that there are only 3,500 to 5,000 people in the United States involved in developing and protecting our ground water resources. That is just not pollution. Those are people who developed it for supply, allocated the water, in addition to the people who worry about pollution. It includes both scientists and administrators. Furthermore, there are only about ten colleges that offer advanced degrees in ground water hydrology in the United States.

Another complicating problem is, there was a substantial amount of federal dollars poured into state programs to deal with pollution streams. What that did was skew the number of technical people available for surface water versus ground water. The more money, the more people. A lot of money for surface water pollution, a little money for ground water. The Division of Water Resources, which I am the Director of, has only about 10% of its technical staff trained as ground water specialists. And, that is about double what it was three years ago. Now, as far as how much water we use in the State of New Jersey, we use about 1.5 billion gallons of water per day in New Jersey. Now, this is a rough estimate, believe it or not. We don't really have the exact figures. We will do better in that area, because the Legislature was kind enough to pass some new laws recently that will enable us to do better in exactly determining how much water is being used.

About half of this 1.5 billion, or 750 million gallons a day, is ground water. The rest is obtained from reservoirs and streams. Most of the ground water is withdrawn by central systems, publicly owned and privately owned central systems. The rest is utilized by what we call the self-supply system, industry, agriculture, individual household wells. There are about a half a million individual household wells in New Jersey. The use of ground water is not evenly distributed in New Jersey. The northeastern part of the State relies mainly on surface water supplies, while southern New Jersey relies mainly on ground water.

The sources and causes of ground water pollution are many and varied. Most people in New Jersey - and you just saw a television show on it - have heard about wells being contaminated by improperly installed disposal and landfills, illegal dumping, improperly installed septic systems. Recently, we have become aware of pollution of wells by leaking underground storage tanks holding gasoline and fuel oil. Furthermore, ground water pollution is not limited to improper waste disposal or chemical spills and leaks. Some of our coastal ground water supplies are threatened by intrusion of salt water into the aquifers. Even the stockpiling and use of road salts for de-icing during the winter have contaminated wells. Just as a note, some of our northern states, the New England states, where they use a lot more road salt than we do, it is normal to take out of service a few hundred wells per year. That is part of the price you must pay,

whether you have contaminated wells, or safe highways. Some of these choices are somewhat horrible choices to make.

The problem with ground water pollution is that once you contaminate the aquifer, it is difficult to clean it up. The main reason for this is ground water moves very slowly. I will give you an example. We measured the velocity of water moving in a stream. The units we use are feet per second. In ground water, the unit we use is generally less than a foot per day. There is a tremendous difference in the rate of movement. There are also literally tens of thousands of sources of ground water pollution, as compared to only about 2,000 direct discharges to streams from industry and sewage treatment plants.

Since 1975, the Division of Water Resources has maintained an index of documented cases of ground water pollution. As of June, 1981, we have studied 164 cases of pollution from accidental spills and leaks. This represents only a small portion of the over 2,000 spills and leaks that are reported each year, and the 2,000 are not all the spills and leaks. Those are only the ones that are reported.

We have studied 23 cases of ground water pollution from illegal dumping, 157 cases of pollution from industrial activities, and 27 cases of ground water polluted by landfills, and 4 cases of pollution from septic systems. The small number of cases studied reflects the limited number of technical staff available for this kind of work.

In recent years we have taken out of service 76 public water supply wells and condemned nearly 700 individual household wells. Although contamination of ground water is common in the United States, it is not that common to actually have so many well supplies polluted. New Jersey's small size in combination with a high population and industrial density often has resulted in people being in close proximity to sources of ground water pollution.

I would note that the numbers I just gave you were in response to problems. We are not really going out and looking. So, there is a very small percentage we are dealing with. I like to make claim that - pick a chemical, and I can go with the State's drill rig, and I will find the chemical in the ground water in New Jersey. We have so many sources and causes. As a matter of fact, I will make that claim for any populated area in the United States.

Now, it is only in the past several years that analytical methods were developed to test for low levels of organic chemicals in ground water. The issue of adequate testing for organic chemicals is a difficult one. The Department of Environmental Protection over the last two years has been carrying out a study of the occurrence of what we call "priority pollutant" chemical contaminants in drinking water supplies. There are over 100 of those. We are doing that throughout New Jersey. The data from the study has not yet been processed. We are doing it now, giving you kind of an update. We expect to have a comprehensive report available for public distribution later this spring. Previous to that we carried out substantial analysis of ground water for your limited list, since we are talking about 50 chemical contaminants, if you want to consider that a limited list.

Many of the wells included in the ground water study are used for public supply domestic drinking water. We tested many types of wells, industry, in addition to the ones we use for drinking. The sampling and analysis we have done so far certainly supports the need for better periodic testing of the water people drink.

ASSEMBLYMAN LESNIAK: When you say better periodic testing, is there any testing requirement now for volatile organics?

MR. SCHIFFMAN: No.

ASSEMBLYMAN MARSELLA: Isn't that the major source of contamination?

MR. SCHIFFMAN: No, there are other types of contaminants, other than volatile organics. Volatile organics,I will go into a little bit later, and they happen to be pretty easy to test for. They are also pretty prevalent in ground water.

ASSEMBLYMAN MARSELLA: Are they the major source for contamination?

MR. SCHIFFMAN: No, there are other types of contaminants. I would note that there are over six million chemical compounds that exist. But, let me give you some statistical values, all right?

The number of contaminated wells we found are significant. We found volatile organic compounds in concentrations above ten parts per billion in 17% of the wells tested, and in 3% of the wells, the concentrations of some of these compounds exceeded one hundred parts per billion, which is a clearly unacceptable level. In addition, 31 wells had concentrations of pesticides exceeding standards,and three potable wells,and nine wells not used for drinking water exceeded acceptable levels for heavy metals. I want to emphasize that this was just a screening type of testing program.

ASSEMBLYMAN LESNIAK: Are there any requirements for testing for pesticides and heavy metals?

MR. SCHIFFMAN: Yes, there are. We have some standards for testing of contaminants in water supplies, and a lot of these have been around a long time. A lot of the metals, such as arsenic, are routinely tested for in public supplies, and pesticides are routinely tested for in public supplies. Some other more common compounds, such as nitrate, very common in fertilizer, is tested for in public supplies, from a public health standpoint.

ASSEMBLYMAN LESNIAK: How often?

MR. SCHIFFMAN: It is done periodically, depending on the size of the system. We also test naturally for bacteria level in public supplies.

ASSEMBLYMAN LESNIAK: Is this by regulation?

MR. SCHIFFMAN: Yes. However, if we take an initial look at our data, I am looking at stuff that has been published and stuff that hasn't yet, even though it indicates the need for testing, it doesn't support the need for analysis of the complete list of chemicals. Many of the chemicals we test - and I am sure that most people will be glad to hear this - have never appeared in the 100 samples we have tested. It is even possible, by the way, that some chemicals not on our list need to be tested for. As a matter of fact, that is quite likely.

We do not detect significant levels, for example, of volatile organic chemicals in streams, because they simply evaporate. Underground they are preserved. These volatile organics are solvents, and one reason they are preserved is because that is what a solvent is. If you were to take a soil sample that has contaminants in it, and you want to extract those contaminants for analysis, you would use a solvent. These solvents are very common. Underground, the solvents are preserved. The ground water system preserves a lot of these things. Some of these chemicals tend to be captured by soil and sediment. That is one reason they are not found in the ground water supplies. Now, not only is it difficult to develop standard testing protocol

for both ground and surface water supplies - obviously from what I have just said, you can figure out they should be different - but you have a problem in determining at what point it tests the system. It is not really a problem. It depends on what you are looking for. If you are looking for a polluted water supply, then you want to test the water prior to treatment. You wouldn't want to test, for example, the water at Rockaway Township after treatment or you wouldn't find anything. That is what the treatment is there for. You test it before. However, if you want to---

ASSEMBLYMAN LESNIAK: You would want to test after treatment to insure that treatment was doing its job.

MR. SCHIFFMAN: That is right. If you want to be sure that the water delivered to the consumer is safe, you test the finished water after treatment. Some more practical---

ASSEMBLYMAN LESNIAK: Wouldn't that be the priority?

MR. SCHIFFMAN: It depends on what you are doing. For the Division, if we were to embark on a study to look at the pollution, we would test before. If we put on our other regulatory hat and we want to assure the safety of the supply, we test after. So, I would say the public water supplies, naturally, we test after. The investigatory type requirements would be before. It depends on what you want to do.

Now, not only do we have to determine what to test and where to test, we need to assure that there are sufficient laboratories capable of analyzing the drinking water for all these chemicals. We do have these type of certification programs. They are new. We have the New Jersey Safe Drinking Water Act, which provides a lot of authority for certification laboratories and the testing of chemicals and public water supplies. However, when that law was written, these problems were not apparent, and some fine tuning is certainly needed of that law.

Let me give you a simple---

ASSEMBLYMAN LESNIAK: Let me ask you a question about what you consider fine tuning. Now there is no testing requirement for volatile organic hydrocarbons, right?

MR. SCHIFFMAN: Right. You could do that by regulation. Let me give you some practical issues.

ASSEMBLYMAN LESNIAK: Would you call that fine tuning?

MR. SCHIFFMAN: Some of the changes in the law are needed for specific changes. I don't want to go into details now unless you want, but there are some peculiar features of the Safe Drinking Water Act that we need to make some changes in. Some of them are in the penalty provisions, for example. The testing of water costs many thousands of dollars - maybe tens of thousands for a system. And, some of our penalties are only one thousand dollars, or so, or maybe several hundred dollars.

ASSEMBLYMAN LESNIAK: If they don't do the testing, they are saving money and they are getting away with not enough to get caught.

MR. SCHIFFMAN: That is right. There are some things that have to be done.

ASSEMBLYMAN MARSELLA: I have a question. In building a new house in the State of New Jersey now where it is required to have a well, that person has to apply to the State of New Jersey for a well permit; is that right?

MR. SCHIFFMAN: The driller has to apply to drill the well.

ASSEMBLYMAN MARSELLA: Okay, now, at that point in time, does the water get tested? I am sure it does, because I have seen it done a few times. But,

is that on record in the State House that you know of?

MR. SCHIFFMAN: Let me say something. The nature of the routine testing, where it occurs, and it is not 100% by any means in the State of New Jersey is bacterial in nature. They sometimes look for some of the more standard chemical compounds. There is no routine requirement for testing for any of these chemicals for household wells in New Jersey - none. As a matter of fact, you have gotten to one of my points already.

I would also note that if you are going to test, you want to make sure you get the right results and we have a shortage of laboratories that are certified, and that has to be improved in this area.

ASSEMBLYMAN LESNIAK: If we were to require testing---

MR. SCHIFFMAN: The private sector will respond, I am sure. We already have them responding. This is a needed service, and obviously the private sector is out there to do it. We also have to strenghthen our state and local laboratories, by the way. There are only limits to what you can do.

I will now put in my plug. Remember, I told you there were a half a million residential wells. I have been talking about public supplies now. We can't forget about the individual residential household wells. And, there is no comprehensive program. Let me put in a plug for the local health departments. They are the logical ones who would have to undertake this type of activity. They don't have resources to do it. And, we have to figure out some way of making this available. From a practical standpoint, I doubt if you would ever be able to test the individual wells, but we do have sufficient knowledge to devise a mechanism that would provide screening programs.

ASSEMBLYMAN MARSELLA: Let me ask a question, then. You said that a driller has to apply to the State for a permit at a cost of $10. Where does this money go?

MR. SCHIFFMAN: That goes into a fund. It is about $100,000 a year. That is an insignificant amount, compared to the testing. That is administrative, to process the permits and that type of thing. You might consider other mechanisms for the local. I want to stress the local for the individual. I could not see the State getting involved in this type of program for practical reasons. Local people are closer from the travel standpoint. They are more in tune to the problems, but I would say this is a substantial job. The need of it would vary throughout the State. Obviously, you wouldn't have this type of program in Jersey City, because it is all surface water, public supply. But, I would say in the southern part of Jersey, like Ocean County, you should have some type of program. The costs have to be carefully evaluated, and I think it can be done. There are ways of not testing for each individual parameter, for example---

MEMBER OF AUDIENCE: It is very difficult to hear.

ASSEMBLYMAN LESNIAK: I am sorry, the microphones are not on.

MR. SCHIFFMAN: I have been discussing the problem right now. I might say that New Jersey is fortunate, because I can now balk a little bit about remedies. I made a list of all the things that were done last year in the Legislature. It was a banner year for legislation designed to help solve the problem of contaminated water supplies, in that copy of this little presentation, there is a little table in there at the back that lists all the laws that are related to this problem, all in 1981, all in the later half of 1981.

I will go through them. Two bond issues were passed, the $350 million bond issue for water supply which provides monies to rehabilitate damaged water systems, and that isn't just for surface water supply, even though most people thought that was what it was for. You can rehabilitate any damaged water system with that money, ground water supply, whatever.

There was a $100 million bond issue to clean up the abandoned hazardous waste dumps. You have already heard about that.

There was an Act called the Sanitary Landfill Closure Act, which provides a tax on waste disposed of in landfills, to insure proper closure of the landfills. That money could also be used to remedy well the problem of wells that were polluted by the landfill.

In 1981, the New Jersey Spill Compensation and Control Act was amended. Now, that provides one half a million dollars. It is kind of complicated. It provides one half a million dollars until January 1, 1983, and a half a million dollars for each year thereafter. So, from now until '83 there is only a half a million dollars in the pot. After January, 1983, there will be a half a million a year. That is specifically for the replacement, for the connection to an alternative water supply of private residential wells that are polluted by chemicals.

Now, on the side of prevention of ground water pollution, which unfortunately, we don't do enough about, there was a law passed in 1981 to restrict the use of chemicals and septic tank cleaner. Septic tank cleaner, by the way, contains solvents that we are picking up in the ground water supplies, the trichlorethylene and the trichlorethane, et cetera, and the methyl chloride. We are going to be restricting and getting that off the shelves. It would be helpful if more of our sister states would also pass similar laws. We have one on Long Island, New York, but not all of New York has the contraint. They were among the first.

ASSEMBLYMAN LESNIAK: So, somebody in north Jersey can walk across the border and buy these products.

MR. SCHIFFMAN: Yes. I am hoping that people would have sense enough not to fowl their own nests, so to speak, because when you put this stuff in the septic tank, and if you are on a well, we have a lot of cases where the people pollute their own wells. We also have cases where heavy use of the septic tank cleaner, years later, the sewage system comes in, and as a matter of fact, that might have been one of the causes of the case here in Silverton. Then the people are still on private wells, and they have public sewer, and the contamination remained, and eventually it gets into the wells. So, this is going to be a great help as we start getting that off the shelves. I don't anticipate there being too many cases of people going across to some other state to get the septic tank cleaner. I would note, though, that if you have an overflowing septic system, the stuff is coming into your basement or whatever, people are very desperate and they will put almost anything down their septic tank to clean it whether it will work or not. We found gasoline in septic tanks and sulphuric acid, and anything you can think of when people get desperate, which is another type of problem, by the way. The failing septic tank problem is a different problem.

We have some more laws that were passed. Some of them don't look too sexy, frankly, but they are very important. The Water Supply Management Act of 1981 was passed to upgrade the way we manage our water supplies. That is going to be our law to get more exact figures on how much water is actually used, since I gave you just general numbers before. It also provided the necessary authority to

allow us to have central water systems provide water to individual wells when they became polluted. Previously, there were some practical difficulties in a rate setting process necessary to pay for the hook ups by the privately owned water companies, and there were cap restrictions on the publicly owned systems. These problems have been dealt with. I have to say that we are breaking new ground here. We are only just beginning to use that authority. But, it is very important. It allows the State agency, such as the Division of Water Resources and myself,to make judgements even with inadequate data, and not wait. The way I feel is, you shouldn't wait until the dead body is in the street before you take action. Now, the difficult thing is, these actions that we take to water systems have substantial economic consequences.

Let me get into that a bit more. When we look at polluted ground water supplies, they fall into two main categories. It is either a public supply that has been contaminated or residential wells. There are other categories such as contaminated industrial supply, but I am not going to deal with that here. The two that I mentioned are the most important.

Of the two, the polluted public supply is easy. I use that term in quotes. The Rockaway situation that you just saw where the town installed treatment --- It is fortunate that a lot of these organic chemicals, especially the volatile organic chemicals are amenable to treatment in the public supply. However, it is really not efficient or effective, or really truly that safe, except in the short term, to use some type of treatment on an individual household well. Sometimes you don't even need treatment on a public supply. Sometimes if the pollution is isolated to a specific well, you close the well. There are other wells that then take up the load to the system. So, a public system is a pretty easy type situation.

Now, residential wells are a far more difficult problem, individual household well. Where a public water system is available, either a town-owned water system or privately owned system, we can now get them hooked up. Now, until passage of some of this new legislation I mentioned, the cost associated with the hook ups had caused severe hardships to the homeowners. In some cases that I know of, the cost could have been more than the people's mortgage payments on their house. So, we now have a way of dealing with that. I think, considering a lot of the money that we spent, that this is some of the best kind of money that I see that we can spend to deal with this problem.

I am going to end on a bit of a sour note. Where there is no public water supply available, and we have individual wells contaminated, there is no simple answer. I thank you for inviting me here today.

ASSEMBLYMAN LESNIAK: Thank you, Arnold. Do you have any questions?

ASSEMBLYMAN MARSELLA: Not at this time.

ASSEMBLYMAN LESNIAK: You will submit specific comments regarding A-280.

MR. SCHIFFMAN: That's right. I gave you the general idea of what they would be. I have also given you a few of these copies of the ground water pollution index that we keep, if anybody is interested. I will just leave them on the table.

ASSEMBLYMAN LESNIAK: That is from 1975 to date?

MR. SCHIFFMAN: To June, 1981. In June, 1982, we will have an update.

ASSEMBLYMAN LESNIAK: Just one caveat. I would expect to be moving this legislation when the Assembly returns into session sometime in April. So, if you can get your comments out to us as soon as possible,it would be appreciated.

MR. SCHIFFMAN: I will have them to you by next week.

ASSEMBLYMAN LESNIAK: Thank you. At this time I would like to call Grace Singer, Princeton Center for Energy and Environmental Studies.

G R A C E L. S I N G E R: My name is Grace Singer. I am a Research Staff Member at Princeton University's Center for Energy and Environmental Studies. For the past two years, I have conducted studies on chemical contamination of drinking water as a nationwide problem with a case study in New Jersey. The New Jersey study included an interview survey of the 21 largest water purveyors in the state to learn of their practices relating to chemical contamination of drinking water. I understand this study will be part of the hearing record, so I will not go into many specifics here.

More important, perhaps, are the findings from a two-month research trip which I took to Europe last fall to study this subject. In many ways, Europeans have been much more progressive in dealing with chemical contamination of drinking water, and use methods resisted by the American water supply industry.

Before relating the most important European findings, I would like to review some vivid U. S. statistics. Later, I would like to offer some specific comments on Bill A-280, sponsored by Assemblymen Lesniak and Bennett. First, the U.S. statistics: There are 63,000 chemicals in use in the United States; 1,000 new chemicals are introduced each year, and most of them are untested by government. At least 700 chemicals have been identified in U. S. waters. This is believed to be one-tenth of what exists. We have a list of 129 priority pollutants put out by the EPA. These are of greatest concern, either because of their toxicity, their carcinogenicity, or because they exist most commonly.

ASSEMBLYMAN LESNIAK: They exist, but not necessarily in ground water sources.

MS. SINGER: They could exist in ground water, surface water, wherever water is.

ASSEMBLYMAN LESNIAK: All right, but they haven't been identified as a priority contamination of water supplies, but they are just a priority---

MS. SINGER: Well, the list was formulated as a result, really, of the Clean Water Act, and a suit brought by an environmental group against the government, and it forced them to create the list. So, it was more under the Clean Water Act than the Safe Drinking Water Act, but it is also used as a basis for judging what kind of testing we do. What I am trying to show in these figures is that we have a narrowing list here - 63,000 that are in common use, 1,000 new ones produced each year, 700 identified, 129 considered of priority concern, and 16 regulated.

ASSEMBLYMAN LESNIAK: When you say regulated, what do you mean by regulated?

MS. SINGER: Under the Safe Drinking Water Act, some are required to be tested for by water suppliers, and those are ten inorganics and six organics and those are pesticides,and those are not what we are finding in our water.

ASSEMBLYMAN LESNIAK: And some metals.

MS. SINGER: The inorganics are metals, heavy metals.

ASSEMBLYMAN LESNIAK: We are getting testimony being entered into the record, and we heard today, asking us to limit the amount of compounds, possible contaminants,that we do test for. And, we have to, to a certain extent, consider any cost factors, because we don't want to test for something that there was---

MS. SINGER: I have covered that in my testimony---

ASSEMBLYMAN LESNIAK: I am very interested to hear that.

MS. SINGER: My testimony is rather brief, and I have tried to keep it to the main point but I do include a statement on that.

The United States and New Jersey have standards and regulations for a very limited number of chemicals in drinking water, thus, the expansion of monitoring for more chemicals called for in bill A-280 is a move in the right direction. It will help in creating a data base upon which to formulate standards in the future.

Other problems that we have are, we conduct very infrequent monitoring at one and three year intervals, depending upon the chemical, whether it is an inorganic, a heavy metal, or an organic, or whether it is in surface water or ground water. Monitoring for organics is not mandated in ground water at all, as you heard before. However, the State of Connecticut, for example, which is considered a leader in drinking water regulation, does mandate annual ground water tests with annual reports to go to the Legislature, for water supplies serving over 1,000 people, so states can have additional requirements if the Federal Government doesn't have them.

In addition, we use no control technology at drinking water plants to remove toxics which can pass through the ordinary sand filters, technology which is commonly used in Europe.

ASSEMBLYMAN LESNIAK: What type of technology is that?

MS. SINGER: That is the granular activated carbon, which is now, for the first time, being used in Rockaway, but it is a common thing in Europe at the drinking water treatment plants.

I heard some figures given by Mr. Schiffman. The figures I had in my study was that as of last summer, at least, 18 public supply wells had been contaminated, and at least 500 private wells had been contaminated in the State of New Jersey. That figure may be increased since my study, so there certainly is a very good reason for concern.

Against this backdrop, I would like to relate my most important European findings. I am limiting this quite a bit in the interest of time. Number one, there has been no major assault on environmental regulation in Europe, such as we are witnessing in the United States. They see their measures as protection of public health and not as environmental frills to be removed at whim.

Two, they use control technology - granular activated carbon - which was mentioned as being used in Rockaway to remove toxic organic chemicals and they also use other forms of disinfection - and one of them is ozone - to avoid the formation of harmful chemicals which result from chlorination. So, we not only have chemical problems with industrial chemicals, our synthetic organic chemicals, but we also have some harmful chemicals which are formed in the treatment process as a result of chlorination. In Europe they are moving ahead to address that.

ASSEMBLYMAN LESNIAK: In terms of chlorination, you are talking primarily about surface water supplies?

MS. SINGER: Well, in the State of New Jersey, as I understand it, we chlorinate everything.

ASSEMBLYMAN LESNIAK: I think it is a local option.

MS. SINGER: No, as I heard, in the mid 1960's for administrative convenience, it was mandated that all ground water supplies - public supplies - be chlorinated, because they could not tell what kind of bacteria existed in individual wells.

ASSEMBLYMAN LESNIAK: Right. But, I think that has been changed. Because, I know that Jersey City has gone to non-chlorination.

MS. SINGER: They are surface water, and they should be chlorinating. They are not ground water at all.

ASSEMBLYMAN LESNIAK: They should not be chlorinating?

MS. SINGER: They should be. Oh, yes, no large system like that, I don't believe, does not chlorinate.

ASSEMBLYMAN LESNIAK: I am told they don't. Well, in any event, does chlorination cause problems, also?

MS. SINGER: Yes, I am going to discuss that further. Yes, we really have two problems. The problem we are addressing here is a result of industrial activity and what we call the synthetic organic chemicals. The second problem is the trihalomethanes which result from chlorination. It is the interaction of chlorine with natural organics that are in the water all the time, and mostly in surface water supplies.

So, in Europe, even with use of control technology to remove toxics from drinking water, the Europeans conduct more frequent monitoring than we do in the United States. For example, in the Netherlands, monitoring for organics and inorganics is conducted four times a year, and in Zurich, Switzerland, with excellent Alpine sources of water, tests are conducted monthly.

ASSEMBLYMAN LESNIAK: Excuse me for interrupting. I just want to make a point. We are hearing, again, that what we are proposing to do it too costly and unreasonable. What you are saying is that this is done, in fact.

MS. SINGER: Well, we are talking about two elements here. One is frequency and the other is number of chemicals tested. You are really addressing more, although you somewhat address the frequency issues by saying that you should have tests at least annually. Because at this point, there are some chemicals and some sources for which we test every three years, so you increase it in some cases from the three-year level to the one-year level and I will go on to say I don't think that is adequate.

ASSEMBLYMAN LESNIAK: But, the Netherlands and Switzerland and Zurich can afford it, but what we are being told is that here in New Jersey we can't.

MS. SINGER: Well, I think it is a question of priorities. In addition, I think this is perhaps one of the most interesting things I learned in Europe, a form of continuous monitoring is used in some European drinking water plants. This method, analogous to the coal mine canary, makes use of sensitive fish, in this case trout, in the incoming raw water. If an accidental or illegal toxic spill were to affect the water, this would affect the forward movement of fish. It would fall back from its usual forward movement and set off electric sensors which would lock up the control panel in the treatment plant and alert the operators who test the incoming water. The fish need not die, but merely be unwell, to give off this alert. This is an inexpensive procedure, which could be used in drinking water plants in the United States. It addresses the problems of the sudden poisoning of water, which can be so harmful. Currently, instruments do not perform such continuous monitoring. So, this is not discussed as a means of replacing monitoring you do or monitoring you are suggesting, but as an inexpensive way of having constant monitoring, and it is rather effective.

ASSEMBLYMAN LESNIAK: It is not good for the fish.

MS. SINGER: Well, it is not good for the fish; no, that is right, and you have to use sensitive fish. The Swiss complain that in Germany they used carp which can live in anything and it wasn't a fair test.

Another thing they do in Europe is have ground water protection. The ground water protection strategy which was stalled in the United States, in 1980 --- EPA recommended a ground water protection strategy which is now stalled under the present Administration. In Europe they do a couple of things to protect ground water.

ASSEMBLYMAN LESNIAK: Among other things.

MS. SINGER: Yes, I should say. Protection zones for ground water exist in Europe. This is particularly for aquifers being used for extraction of drinking water, and it will typically be in three concentric circles, the center circle being the most restrictive, where no development of any sort is permitted. The second circle surrounding that will be a little less restrictive. And, the third circle will be the least restrictive, but still have some restrictions. As an example, in Germany certain trucks carrying large volumes of certain kinds of hazardous waste have to be marked on the truck as to volume and the classes of waste they are carrying, and would not be allowed even in the second and third circle, so that a spill would not occur, which would affect ground water.

There is much less landfilling of hazardous waste in Europe, particlarly in the Netherlands and Germany. For example, in Holland, 39% of hazardous waste is landfilled. In the United States, the best estimate is 90%. Now, that is quite a--- talk about priorities. They have made certain priorities on their landfilling of hazardous waste.

In general, the Europeans have title land use laws, because they have always had a much more restrictive allotment of land than we had in this country. That general situation has helped to protect ground water. So, two findings in the last decade on both sides of the Atlantic have had very different responses and these are the synthetic organic chemicals in drinking water, especially ground water, and the use of control technology in Europe, none in the United States, and then moves to do something about the trihalomethanes, which were only discovered in 1974. These are the unwanted by-products of chlorination. At least one trihalomethane, chloroform, is a known carcinogen. Europeans use much less chlorine and they rely much more - as I said before - on ozone, which does not form these trihalomethanes.

As a result, the trihalomethane standards are much more stringent in Europe than they are here. For example, the United States standard for trihalomethane is 100 parts per billion. The European proposed standard - this would be through the European economic community - is one part per billion, and currently in Germany and Switzerland, the standard is 25 parts per billion. So that is quite a difference from what will be permitted in the United States.

In 1978, EPA did propose regulations for proposed technology to be used at certain sized drinking water plants, and it failed in large part due to the water supply industry's very, very vigorous opposition.

There are some institutional factors which are very, very important, the differences between the set-up for water suppliers in Europe and here, which I think have a very strong bearing on what is going on in this country with drinking water.

Number one, most of the water suppliers in Europe - not all, but most - are government run.

Number two, research is a very strong element in the more progressive things that are happening in Europe. There is strong technical support from the water works' own research arms. In the U. S. there is an adversarial set up between the EPA and the water works. They don't work in cooperation with the EPA, but against the things that EPA has been trying to do to control chemical contaminants. Some of

these proposals, perhaps, needed greater refinement. I am not making a statement on the specific proposals, but it is a question of an atmosphere and an attitude that is quite different in Europe than what it is here. And, perhaps, one of the most important differences between Europe and the United States, and institutional set-ups, is that there is a trend toward consolidation of water works in Europe and a trend toward greater fragmentation in the United States, and I would like to give you some specific examples.

In England, 1600 separate water agencies were consolidated into ten water authorities, and these handle on a watershed basis all phases of water management, from drinkig water treatment, to sewage, to recreation, to anything. So, there is an integrated and coordinated approach to water management, rather than the very fragmented approach we have here.

In Germany, 15,000 water works were consolidated to less than half that, mostly by consolidation of municipal water suppliers. Now, I will show the contrast with the United States.

In 1963, we had 20,000 water works throughout the United States. We now have 65,000, and a lot of that is due to our patterns of urban sprawl and land use development. Every time you move out into the countryside, you need a water supplier to supply the populace, and that creates a very small unit, which is really not able to cope with the chemical contamination. They can barely handle bacterial contamination. So, you have some very fundamental structural differences. The Europeans are moving forward. We are in a holding pattern, and may be regressing, because there are weakening amendments now proposed at the federal level for both the Safe Drinking Water Act, and the Clean Water Act, and with federal cutbacks at a time when the state is being asked to do more. So, we indeed have a very serious situation.

I would like to make some specific very brief comments on bill A-280---

ASSEMBLYMAN LESNIAK: I am very interested in hearing those comments on that, but I have a question regarding what you said about urban sprawl. Would it be your opinion, based on your experienced knowledge studying both the water supply systems here in the states and in Europe, that urban sprawl is a particularly severe problem that we would want to try to avoid in the upcoming decades here in New Jersey because of the situation?

MS. SINGER: For a lot of socio-economic reasons, as well as environmental reasons, and I only mention it here in the context of such sprawl---

ASSEMBLYMAN LESNIAK: In the context of water supply and safe drinking water.

MS. SINGER: Developing a very small, often inadequte, not always inadequate, water supplier who can barely cope with the very basic performance for - as I mentioned - bacterial contamination, much less with much more complex and sophisticated needs of chemical contamination --- So, in that regard, yes, indeed, there is a serious effect.

ASSEMBLYMAN LESNIAK: How would you characterize that particular problem? We are here in Ocean County, the county which has gained the most population over the last decade, which yet is very much underdeveloped, and which is adjacent to many of the counties in southern and western New Jersey which go through the pinelands, which are being subjected to severe developmental pressure. How would you characterize the need to regulate and control that problem as it related to

south Jersey and the health and welfare of the south Jersey residents?

MS. SINGER: A very common occurrence was when a new subdivision was started. There was no water supply there, and the developer in effect would propose to the local unit of government that they supply the water. They neither had the expertise or perhaps a long-term interest beyond getting the development approved to really do what had to be done. So, that was the genesis of the problem. It certainly would be very important here. There was a bill passed - and I believe this was while I was in Europe - which would allow the DEP to either take over or force the consolidation or in some way upgrade the operation of a water supplier which was too small or too inadequate to do what had to be done to protect public health. So, there is now,only in the last few months,a bill on the books, and I think it would be up to the Legislature and the public to see that in fact DEP makes use of that.

ASSEMBLYMAN LESNIAK: We are often criticized for taking out of the hands of the local government and the local authorities land use decisions that the local authorities and local developers feel they have an absolute right to make. Do you think there is a legitimate state interest on behalf of all the residents of any particular area to have regulation in this regard?

MS. SINGER: Well, I am for local control as long as that control works. And, that seems to be the most sensible unit at which to make decisions. You only---

ASSEMBLYMAN LESNIAK: Given the state of the water supplies and the contamination and the threats to the State of New Jersey, do you believe that local control has worked?

MS. SINGER: I think it is highly varied. I think where it doesn't work and where it hasn't worked,and we have cases of that, certainly, then it is incumbent upon state government to take over where it is not protecting the public health. That is the mandate of state government.

ASSEMBLYMAN LESNIAK: What are the possible consequences if it doesn't work?

MS. SINGER: Well, continuation of a very horrendous situation, which we have now, inadequate controls that is all.

I would like to comment specifically. First, I do want to commend you, Assemblyman Lesniak and Assemblyman Bennett,for sponsoring the bill and for recognizing the need for more information about toxics and drinking water, and for proposing an expansion of a list of chemicals to be monitored.

In my study, I recommended monthly testing for EPA's list of 129 priority pollutants. So, I went beyond what you are recommending in the bill. Perhaps at first this requirement would apply to the largest water suppliers and those with degraded or particularly vulnerable water sources. For example, in the Passaic River, you have 2500 industrial sources, and over 100 sewage plants discharging into what is the supply of the Passaic River Valley Commission. At times of low flow, I understand the sewage content can make up 65% of that source. That would be, perhaps, in the summertime. So, you do have some areas that are already in trouble and much more vulnerable than other areas. So, perhaps, this increased monitoring, both frequency and in number of chemicals,would be both on the basis of size, because more people are affected, but also on the basis of what we know is going on in a particular watershed or with particular ground water sources.

ASSEMBLYMAN LESNIAK: We have a particular problem in the size question, because if it is one person or a thousand people whose health is affected, it is a serious concern.

MS. SINGER: Absolutely.

ASSEMBLYMAN LESNIAK: Do you think we would be able to have different criterion and time elements involved for surface water supplies and underground water supplies?

MS. SINGER: I think you could phase-in such a program, and it would probably be sensible to do so. First of all, you will gain experience by---

ASSEMBLYMAN LESNIAK: Should we have different criteria for surface water supplies and underground water supplies in terms of what we are testing for? For instance, the statement that the volatile organics are evaporated in the surface water supplies.

MS. SINGER: Well, as I understand it, once you are running the gas chromatagraphy/mass spectrometer, you get a reading of a whole lot of chemicals, and it is probably not much more effort to just read everything that will tell you.

ASSEMBLYMAN LESNIAK: Do we have someone from the laboratories ready to testify? Is Ann Winkler here?

MEMBER OF AUDIENCE: Yes.

ASSEMBLYMAN LESNIAK: Okay, thank you. You are next.

MS. SINGER: What I wanted to say was that a basin by basin examination of conditions should be the source of such action. The DEP already has a lot of that information - what the water quality is in various basins. Now, when I talk about basins, that is, of course, surface water.

ASSEMBLYMAN LESNIAK: One of our problems, though, in what you are suggesting is that we give DEP the discretion, because we can't keep changing the legislation every week, to set the criteria for the testing and it has been our experience that if we give them the discretion, more often than not, they will exercise that discretion on the side of not doing what ought to be done. Their job is monumental. We know all the serious problems that exist. And, because of that, and because of staffing requirements, I am concerned that the more discretion we give them, the less that is going to be done.

MS. SINGER: You could do what Connecticut has done. There must have been a good reason. They mandated reports to the legislature. They did not leave it just with the agency, which I understand does a better job than most of the states in the nation. So, even with that, they were making them report to the legislature.

ASSEMBLYMAN LESNIAK: We intend to do that. I thank you for that suggestion.

MS. SINGER: Some kind of report like that would be very helpful. In any event, the annual tests proposed in A-280 are still not frequent enough to provide public health protection, although, as I stated previously, it is a move in the right direction. Right now, at least one water supplier in New Jersey conducts monthly chemical tests, and one other supplier makes annual tests for EPA's 129 priority pollutants.

ASSEMBLYMAN LESNIAK: Can you give us their names?

MS. SINGER: Yes, I will. But, the point I want to make is that because the law does not man them to do these expanded tests, they don't

have to report the results to the DEP, even. They can use it for their own information, but don't even have to take action based on what they learn. As I understand, from my interview surveys, Newark - at least at the time I interviewed them - was doing monthly tests for organics and inorganics. I thought that was rather unusual. They have one of the better water supplies in the state. It is an upland water supply and I thought that was commendable.

ASSEMBLYMAN LESNIAK: That is the Newark Reservoir.

MS. SINGER: That's right. That is probably better than most.

ASSEMBLYMAN LESNIAK: That is where Elizabeth, my home town, gets our water from. I am glad to hear that.

MS. SINGER: I am glad you are lucky in that respect. As a matter of fact, you were interested in urban sprawl. One of the interesting things I learned in the study is that often the large urban centers, which may have more air pollution and a lot of other more serious problems which you are very well aware of, will often have better water supplies, because the water supplies were selected many years ago in upland areas before suburban development, and New York City is known to have--- They have problems, of course. It doesn't mean they have no problems, but they have a better situation in a lot of the surburban, wealthier communities in this one respect.

ASSEMBLYMAN LESNIAK: As we saw in Rockaway Township, which is a very wealthy area, absolutely.

MS. SINGER: That is a rather shocking case. Another monitoring method which should be examined, because of your concern and all of our concern about not only the cost of testing, but the technical capability to do it, is that we have routine testing for a few chemicals which would be called surrogate chemicals. These could be trichlorethylene, tetrachloroethylene, carbon tetrachloride, chloroform, et cetera, to serve as indicators of the presence of a wider number of chemicals. Often where you have these, you have others present. In the literature I went through in doing my study, I saw several references to this possibility. It would have to be examined by technical people to see how feasible it is. But, it is possibly one way to go, limiting the onus on water suppliers.

My last point is, we must ask what the DEP will do with the increased data resulting from monitoring for more chemicals. Will it use the data to formulate standards for chemicals which now have no standards? This question is particularly relevant to the new data on trihalomethanes. That is the by-product of chlorination, which DEP is now receiving. Will chlorination methods be improved to lower the trihalomethane content? I have been asking this question, and I have not as yet gotten a satisfactory answer, and I think we should all be looking to see what results from that increased data, and what would result indeed from the increased data that you are calling for. The citizens of New Jersey have a right to know the findings of drinking water monitoring. Such data should be made public. Thank you very much for the opportunity to speak to you today. (Applause)

ASSEMBLYMAN LESNIAK: Thank you. I really appreciate the expertise that you have given to us. I am sure that we will be calling upon you in the future for guidance and help.

MS. SINGER: I will be glad to help in any way I can.

ASSEMBLYMAN LESNIAK: I would now like to call Ann Winkler, who is from J. R. Henderson Laboratories to give us some background concerning the technological aspects of testing.

A N N A W I N K L E R: I am one of the Directors of Henderson Labs since 1980, and there was a time when I could trace the water problems, which I really didn't realize before that time. I would speak especially of the problems I am encountering with the close contact with the people and my customers, and with their fear about the water pollution.

ASSEMBLYMAN LESNIAK: Who are your customers, generally, in terms of water pollution?

MS. WINKLER: We have private customers; we do FHA tests, and we have municipalities for customers, and also some industrial customers.

ASSEMBLYMAN LESNIAK: Do you have any water companies?

MS. WINKLER: Yes.

ASSEMBLYMAN LESNIAK: Private water companies?

MS. WINKLER: Yes. One of our customers is the Toms River Water Company.

ASSEMBLYMAN LESNIAK: The Toms River Water Company supplies what area?

MS. WINKLER: Well, in general Dover Township.

ASSEMBLYMAN LESNIAK: And, what type of testing do you do on the water supply?

MS. WINKLER: For all the water companies?

ASSEMBLYMAN LESNIAK: Well, let's say the Toms River Water Company.

MS. WINKLER: We do bacteria tests, weekly. There is a certain amount---

ASSEMBLYMAN LESNIAK: Is the bacteria test required by the State regulations?

MS. WINKLER: It is required, a certain amount for a certain number of people served. Those are state requirements.

ASSEMBLYMAN LESNIAK: Do you break down the cost of the testing by category? In other words, does it cost "X" amount of dollars to test for the bacteriology, does it cost "X" amount of dollars to test for the pesticides, for the heavy metals?

MS. WINKLER: Yes.

ASSEMBLYMAN LESNIAK: The testimony that we have been developing is that there are many sources of contamination that are not required to be tested for, and you know the list of organic chemicals, for instance. Is there one test that can generally pick out levels of contamination for a whole series of 129 priority chemicals listed by the EPA, or are there many tests that have to be done? That is the type of information that I would like to find out.

MS. WINKLER: No, there are several tests that have to be done.

ASSEMBLYMAN LESNIAK: What would they be?

MS. WINKLER: The 129 priority pollutants, the volatile organics, that is one test, and those include the trihalomethanes that the lady was talking about before.

ASSEMBLYMAN LESNIAK: There would be one test that would give you levels of contamination that would include the entire group of volatile organics.

MS. WINKLER: Yes.

ASSEMBLYMAN LESNIAK: What test would that be?

MS. WINKLER: Chromatography/mass spectrometry.

ASSEMBLYMAN LESNIAK: That is one test.

MS. WINKLER: Yes. And another technique is also gas chromatography, but a different technique is used, acid extractors, base neutrals, and the pesticides and related compounds.

ASSEMBLYMAN LESNIAK: You are familiar with the list of 129?

MS. WINKLER: Yes.

ASSEMBLYMAN LESNIAK: Could you give us a figure on what the cost of testing for those 129 pollutants would be?

MS. WINKLER: $600 or $700.

ASSEMBLYMAN LESNIAK: That doesn't seem like very much money to protect people's lives. Do you want to sign a contract?

MS. WINKLER: I have to mention that it always depends on if you have a customer who comes with one sample and wants to have it tested once. That, of course, list price. But, if you have a contract with a municipality where they have to test it in a certain freqency, a certain amount of samples, we can give good breaks and our general practice is that depending on the volume of work, we give up to 50% discount to our list price.

ASSEMBLYMAN LESNIAK: So, we could pass some type of legislation that would enable home owners with private wells to subcontract with the municipalities to bring down their cost levels.

MS. WINKLER: Yes. I have some ideas about that problem.

ASSEMBLYMAN LESNIAK: If you wanted to do Toms River, for instance, you would do a private home owner, a private well, for "X" amount of dollars, which would cost less. We could do that. I don't want to put you on the spot. But ---

MS. WINKLER: I didn't understand what you are asking me.

ASSEMBLYMAN LESNIAK: For instance, the Toms River Water Company could say, we want to give you our business. And, you sell it to us now for $700 a test. I am just using arbitrary figures as an example. However, if we have home owners in Toms River who also want to have their supplies tested, if they went to you individually, you would charge them $1000 a year. However, we want to include them in our contract, and they would be able to negotiate a decreased price, right?

MS. WINKLER: That was just what I was thinking about, something like that should actually be done. Now, we have civic associations in this area. People share a certain amount of money and they have testing done. If you have rural development, where people draw their water from private wells, and are not monitored in any respect, you could develop an association. I feel the Board of Health should be helpful to those people to give them some advice on how to go about this. You could have this association develop a testing and screening program at certain intervals, like an interval of half a year. A private well in the general area is tested and half a year later, another private well in the general area is tested, and then go with a contract like that to a private reliable laboratory. I am sure if they have a contract like that, they would give you a good break on the price.

ASSEMBLYMAN LESNIAK: Thank you.

MS. WINKLER: In connection with this testimony, I also wanted to mention that after I had started that business, and I saw the problems people have, I came away with the impression that many private customers are under

the wrong impression that their water is tested for being safe for human consumption, and I think many are under the wrong impression, because the requirements of the FHA are only for bacteria and minerals.

ASSEMBLYMAN LESNIAK: You are talking about FHA mortgages.

MS. WINKLER: Yes. And, then people buy a house in a rural area, and they have the water tested for that, and they get a certificate that the water is safe for human consumption based on those tests. And then all of a sudden they developed a problem and they say, "My water was safe." But, they don't know that that actually did not include any of the chemicals. I felt this regulation was very insufficient, and so in December, 1980, I contacted Assemblywoman Hazel Gluck, because it was just after an emergency in Bricktown had appeared. May I read that letter I wrote then?

ASSEMBLYMAN LESNIAK: Well, can you summarize it for us?

MS. WINKLER: Okay, I said, "Requirements for public and semi-public water supplies call for bacteriological testing on a monthly basis, and" --- I won't read everything.

ASSEMBLYMAN LESNIAK: We are all too familiar right now with the fact that the State of New Jersey does not require any type of testing for many of the pollutants that are health hazards to our residents. What we are most concerned about, and what I would appreciate your giving us, is some of the information regarding the cost factors, because we have been hearing that this is going to be too costly a program. What I am concerned with is since I don't think that at all, we have not had any documentation to show that this going to be too costly a program. What I am concerned with is that the reason why these roadblocks are being put in our way, so to speak, is the fear that when we do put this program into effect, that there are going to be an awful lot of angry residents out there in the State of New Jersey, because they are going to find out for the first time that the water supplies are unsafe, and I do believe that much more dangerous than that fear is actually allowing that to continue without doing something about it.

I appreciate your giving us some testimony that allays the cost concern and puts us on target in terms of what we are trying to do.

MS. WINKLER: I feel,to keep the costs down, I would not recommend, as a first step doing all the 129. Maybe you should just do initial testing, and then you will find out there are some areas that are more vulnerable than others. And then you can go from there and develop a testing program accordingly. Those that seem to be safe, you will not have to test in the same frequency than an area that has already some water pollution or is close to a certain level.

ASSEMBLYMAN LESNIAK: I think what we may do is require the testing for all of these compounds initially and then have that reported back to the legislature, then we can cut down, based on the empirical data. However, until that is developed, I think we ought to make that a requirement, because it has been my experience that if we do not require it, it is not going to get done. Thank you very much.

MS. WINKLER: Thank you.

ASSEMBLYMAN LESNIAK: Dr. Patel from the Department of Health. Doctor, I would appreciate it if you would give us a brief outline of the implementation of the Hazardous Waste Health Care Strike Force team in terms of its staffing, and in terms of any programs that it either is conducting or plans on conducting under the program that the Legislature enacted late last year.

D R. D H U N P A T E L: Did you want this at a later date, or did you want me to discuss it briefly presently also?

ASSEMBLYMAN LESNIAK: Well, I know that you have some testimony that you are prepared to give today, but I would appreciate it in writing, so that we can have it in a more detailed fashion, because I suspect, again, that once we get more involved in the periodic testing, I am finding out what the true extent of the condition of our water supply is, that we are going to need even more such programs such as the Health Care Strike Force team.

DR. PATEL: I think you have stated my concerns, so maybe I don't need to talk any further. Well, Assemblyman Lesniak, and members of the Committee, once again, on behalf of the New Jersey State Department of Health, I thank you for the opportunity to present testimony at these hearings on water contamination problems in south Jersey and the role of the State Health Department.

Our water contamination problems in south Jersey are in many ways similar to those in north Jersey, but the situation here is more serious, since a larger percentage of the population in south Jersey depends on ground water sources for potable water. Furthermore, the water contamination problem here in south Jersey is unique, and, of necessity, needs greater attention and concern. I know you are from Union, but there are good reasons for this.

ASSEMBLYMAN LESNIAK: We are here because it is a statewide problem, and also because, as you stated, it is a more serious problem here because of the source of water.

DR. PATEL: I was going to say furthermore because this area includes the pinelands and the precious ground water aquifers, which account for 17 trillion gallons of potential potable waters for its residents. Unfortunately, these historical and valuable pinelands also provide an ideal location for illegal dumping of hazaroudous waste, due to its geological formations, which enable these unconscionable dumpers to dispose of large quantities of waste, which can penetrate through the soil layers and dissipate within minutes in the large aquifers, making it almost impossible to prove the covert acts of these perpetrators unless they are actually caught int he act of dumping illegally.

ASSEMBLYMAN LESNIAK: One of the things that we have tried to deal with the new law is to avoid having to catch them in the act, so to speak, and to really tighten up the manifest system, and the criminal penalties attached to that. We have just recently introduced strict liability provisions for not filling out a manifest, and also for knowingly or recklessly giving inaccurate or misleading information. So, we hope that by stronger enforcement and even tougher laws to at least avoid necessarily having to catch them in the act, because as you state, that is virtually impossible and it is a hit or miss proposal.

DR. PATEL: Well, what you say is very true, and it is a positive step. However, you do need to have proof, evidence, that they have committed such an act.

ASSEMBLYMAN LESNIAK: If they are generating waste and don't have a manifest for it, that is the proof.

DR. PATEL: Yes, definitely. However, later on in my testimony, I will mention some other problems that might arise which are not covered by this system.

In south Jersey there are several incidents of known water contamination with the potential of adversely affecting the health of large sectors of populations that reside in the vicinity of these highly contaminated areas. Just to mention a few examples, Price's Landfill in Atlantic County, which we saw in the movie earlier, which is one of the top priority sites, on the EPA list---

ASSEMBLYMAN LESNIAK: I think the EPA designated it as the worst environmental hazard in the United States.

DR. PATEL: I like to be cautious, though.

ASSEMBLYMAN LESNIAK: I am just quoting the EPA.

DR. PATEL: You are right. It is considered to be the worst site in the country. Also DEP has it on their list of hazardous waste problem sites. Of course, the reason for this is the landfill has been shown to contain highly toxic and carcinogenic chemicals which have contaminated the ground water underlying the landfill and the private wells in nearby homes. Only recently these people residing in these homes were provided an alternate water supply.

ASSEMBLYMAN LESNIAK: Of course, there are landfills throughout the State of New Jersey; am I right, Doctor?

DR. PATEL: There are at least 300 hazardous waste sites, which are landfills and lagoons---

ASSEMBLYMAN LESNIAK: Those are identified hazardous waste sites.

DR. PATEL: That's right.

ASSEMBLYMAN LESNIAK: Have all these landfills in the State of New Jersey been tested in terms of possible contamination?

DR. PATEL: No, they certainly haven't been tested. Again, recent regulations now do require installation of monitoring wells when the landfill is terminated.

ASSEMBLYMAN LESNIAK: Right. On the way down here on the Parkway, I passed a landfill that is very high, and I think it has been recently closed---

DR. PATEL: It would make a good ski slope, I guess, when they close it.

ASSEMBLYMAN LESNIAK: But, because of the situation here in south Jersey, the threat of landfill leachate is much greater for water supplies; is that correct?

DR. PATEL: Yes, and that is why earlier I mentioned that this needs more attention to south Jersey, and that was one of the reasons.

ASSEMBLYMAN LESNIAK: What can the Department of Health do in terms of health programs dealing with this?

DR. PATEL: Well, for that, I would again like to thank you---

ASSEMBLYMAN LESNIAK: I don't want to cut your testimony too short, but I would like you to concentrate on the health consequences and what can be done.

DR. PATEL: Maybe if I just briefly run through some of the problems and get into that area, maybe that will tie in nicely. We mentioned Price's landfill. Another one is the Burnt Fly Bog, and that includes---

ASSEMBLYMAN LESNIAK: Again, I don't want to cut you short. We know all of the problems. If you can deal specifically with the health problems that are confronting us, we would appreciate that.

DR. PATEL: Okay, then I will go right into discussing the major public health problems of our time. One of the major ones is cancer. Your bill, which was recently passed by the previous legislative session, will help initiate these very much needed health studies. Also, like you mentioned, the bill has set up a hazardous waste health care task force, and that is in effect now. We do have a hazardous waste health care task force in the Division of Epidemiology and Disease Control in the State Health Department.

The other thing that the appropriation has helped us do is to initiate a program in the environmental health hazard evaluation unit, which is collecting information for county reports, and the first county which we had already started working on was Gloucester County, which happens to be in south Jersey, and the next three counties that we will be working on will be Ocean County, Atlantic County and Union County. What this county report does is essentially look through all available information

ASSEMBLYMAN LESNIAK: I appreciate your including Ocean County and Union specifically in these reports.

DR. PATEL: Well, it just happened that we had enough people concerned about these areas, and that is why we initiated these as being the priorities. We do get a lot of calls from people and from local county health officers asking us for assistance in evaluating the health hazards of people living in the vicinity of hazardous waste sites and of known water contamination problems.

ASSEMBLYMAN LESNIAK: Of course, the fact that the Assistant Majority Leader in the Assembly is from Ocean County helps too.

DR. PATEL: I didn't even know that. That is true.

ASSEMBLYMAN LESNIAK: The Director does.

DR. PATEL: Maybe they were influential in getting the people to call us.

ASSEMBLYMAN LESNIAK: In any event, we are very interested in the outcome of those reports, which, again, I do not believe in hiding things from the public, because for too many years, these problems have been hidden and when they have come out, they have only been more severe, so this program will help us in that regard.

DR. PATEL: Yes, and the purpose of these reports has been for us to be able to get all of the known environmental contamination, the population residing in the vicinity of these, the impact that is likely to occur in these populations, and then the site where we should do our health studies to enable us to be able to identify the hazardous groups, which your legislation specifically asked to do.

ASSEMBLYMAN LESNIAK: Atlantic County, Ocean County, Gloucester County and Union County.

DR. PATEL: That is correct. Those are the ones we are working on presently. Obviously, we will do all of the counties, but these reports, when we get one of them finished, you will be seeing them, and you will see they are quite extensive. We are talking about big reports, which have all known data on landfills, generators, processors, and everything and anything that can impact the environment, air, water, land contamination specifically.

ASSEMBLYMAN LESNIAK: All that for $250,000?

DR. PATEL: No, sir. That is just the beginning, and unless you can provide an annual appropriation and more money, I don't think we can really do much more.

ASSEMBLYMAN LESNIAK: I will guarantee you we are going to provide an annual appropriation for this.

DR. PATEL: Well, then we will be able to do a lot more with these reports, and then we will be conducting health studies, and there are problems in conducting health studies which I would like to also discuss briefly at this time. Again, one of the major problems is that the environmental data that we are looking at which comes from our files, and local and county health department files, has data only for recent years, the past three or four years, or maybe five years at the most. The chronic diseases that we are concerned about, the cancers, the birth defects, will take several years to show up, so unfortunately the diseases that we will be seeing now we may not be able to correlate with vast environmental exposures, because we just don't have the data for twenty years back.

The data that we will be collecting now will be useful in the future to be able to evaluate the potential health problems to these communities. This is why the information on organics in water would be very useful for these studies. At present in our state, just the DEP program, which is in the Office of Cancer and Toxic Substances, recently has collected ground and surface waters in all twenty-one counties, and however these are not extensive enough to tell us exactly what the contamination problem is everywhere in New Jersey, but it gives us some general idea of the types of pollutions and contaminations that occur in the State.

ASSEMBLYMAN LESNIAK: Dr. Patel, we are going to be requiring certain types of periodic testing programs for contamination, and the DEP will receive reports that certain water supplies have "X,Y,Z" chemicals in certain parts per billion. What is the next step? How do we know whether that is safe, unsafe, or harmless or harmful?

DR. PATEL: Well, that is a very difficult question to answer, which has been asked several times the past few years. We do have a joint State Health Department and DEP Committee that has been working on setting guidelines for what can be considered to be harmful or hazardous, and what can be considered at the level at which action should be taken to correct a situation. We were hoping that the U. S. EPA would have already come up with these, but unfortunately they have not.

ASSEMBLYMAN LESNIAK: You could probably wait ten years.

DR. PATEL: Well, this is why we have decided to go ahead and work on our own to come up with these guidelines. But, at this stage, I think that is all they can be, because the data that we need to come up with specific standards is non-existent at the present time. I think this bill will help this hazardous waste health care task force to come up with the data that will be useful for setting standards. So, that is very useful and necessary, but again it will take time before these studies are completed and we can come up with these standards.

Another point I would like to mention, and it is one about which you questioned several times earlier, and I just happen to have a paper with me about, comparison of ground water and surface water for patterns and levels of contamination with toxic substances. This is by G. William Page at the University of Wisconsin, and it was recently published in December, 1981, in the Journal of Environmental Science and Technology, which is one of the journals of the American Chemical Society. I would be happy to leave this paper here. It has a table which actually

lists the chemicals found and the level in the ground water - this is for New Jersey from 1977 to 1979, even though the work was done at the Department of Urban Planning at the University of Wisconsin, I guess our data was so much more complete than the other states, they decided to use this for their paper. It compares the levels detected in ground water and in parentheses it gives the levels in surface water. I think that will be useful.

ASSEMBLYMAN LESNIAK: I would appreciate having that for our records.

DR. PATEL: I would be happy to leave this with you.

ASSEMBLYMAN LESNIAK: Thank you.

DR. PATEL: In that same direction, I would like to mention that when ground water becomes contaminated, the toxic organic chemicals can volitalize and penetrate through the foundation into the basement areas and therefore provide another source of exposure upon being inhaled. Use of these home treatment systems that we talked about, like the ones in Rockaway Township, though useful in certain instances, will not provide the answer for preventing contamination of ground water, as it will not protect against air pollution problems that will arise from these chemicals volitalizing and the fact that those filters are usually put under the kitchen sink only gives you clean water for drinking and cooking, but you still have the problem when you shower or when you wash clothes and again, because of the temperatures, those chemicals will volitalize and you will have air pollution problems from that.

Of course, hopefully, the levels are low enough that by the time it is in the air, it will be even lower, but, still, when you are talking about a small room like a bathroom, the levels may be high enough to be of concern. Unfortunately, again, we just don't have enough data to be able to make any recommendations at this stage, specific recommendations at this stage, about that type of use. But, this does bear watching. I would again repeat that those types of systems, though useful and specific are small spill type situations and will not be the answer for cleaning up all our waters. The best thing is to prevent contamination of the water systems.

I guess I would just like to finish by discussing the major public health concern of our times, which is cancer. Again, at present, we don't have enough research to predict how many of these are related to environmental exposures. The unfortunate part about cancer associated with environmental exposures is that anyone can be exposed to these chemicals, often without even knowing about it, and that it is not a matter of personal choice. And, since we are talking about the general population, this includes highly susceptible groups like you had mentioned earlier, such as the very young, the old, and pregnant women, people suffering from other chronic diseases, which you had also mentioned earlier. These are the populations then which would have a higher risk of cancer, and other chronic diseases.

Furthermore, we do not yet know the sociological impact both on our generation and especially the next one - that is, the effect on small children who become aware of the extensive and environmental contamination problems and the stress that is put upon them with the knowledge that they may be exposed to low levels of toxic chemicals and the uncertainty of the impact of the exposure to their health and the health of their children and future generations. I say that specifically because last week we visited one of these homes where they had

this carbon treatment system and there were a couple of young boys standing there looking and listening to us talk and we could see from the expression on their faces that they were quite confused and didn't know what was going on. It will be a long time before we will know what this is doing to these children.

ASSEMBLYMAN LESNIAK: It may be even psychological.

DR. PATEL: That was what I meant when I said stress. It really included both in terms of health as well as psychological impacts.

ASSEMBLYMAN LESNIAK: Thank you, Doctor. You will get that program on a permanent basis. We will guarantee that, despite the opposition from some of the people we have heard from previously. We had, as you know, very serious difficulty getting the legislation through at the end of the last session.

DR. PATEL: Yes, I heard that. It was unfortunate. I wish those people were aware of the serious problems, and if they are not corrected now, it might be really much more expensive and maybe even impossible to get rid of the contamination, especially from ground water systems.

ASSEMBLYMAN LESNIAK: Thank you, Doctor. We are going to take a forty-five minute break for lunch. I appreciate your patience. However, it is very important for a Committee to develop - not only for our knowledge, but for the record - very specific information regarding testing requirements and health effects and cost effects. Because, as I said, many people will be affected by this legislation and there are many special interests that are not too happy about bringing these things out into the public's view. We have to overcome their influence, and we do that by coming to the people and giving you an opportunity to hear from the experts and giving us and opportunity to hear from you. That will make our job a lot easier to do, when we get back into Trenton to get this legislation through. So, I really want to thank you very much for your patience and your attention through these hearings and we will come back at two o'clock to hear some additional testimony. Thank you very much.

(Luncheon recess.)

ASSEMBLYMAN LESNIAK: Good afternoon. Is Charles Kauffman here?

C H A R L E S K A U F F M A N: I want to thank you again for being able to appear before this Committee. I did in Freehold last year, and the results that came out of that hearing, it is grateful to know that you do take action. Thank you very much for giving me this opportunity again.

My name is Charles Kauffman. I am Public Health Coordinator of the Ocean County Board of Health appearing before you on their behalf to present information to this Committee for the need to provide adequate protection of potable water supplies and ground water used for potable water purposes in this State.

Ocean County has been faced with many different sites that have been found to have polluted ground water. As you heard earlier, these have been diverse and many. This pollution has originated from many varied sources such as chemical dumping and improper and illegal disposal of waste. These polluted sites are scattered throughout the county, and the most notorious of which has been the Legler section of Jackson, and before that, in 1974 - we have a history going back quite a way with problems stemming from chemical pollution - the Pleasant Plains area of Dover Township. In addition to those sites, we have had widespread dumping and contamination in Plumsted Township and recent reports of contamination in Lacey, Stafford, Little Egg Harbor Townships and Dover Township.

The Ocean County Board of Health, in order to better address this problem, has established a toxic waste water pollution task force. This task force is utilizing the best expertise available in the county to focus in on suspected areas of pollution for immediate correction, long term monitoring,and long term effects on the affected parties that had utilized the water supply that was found to be contaminated.

One thing I would like to say in this regard is the difficulty that our department has been having with getting the determination made that the supply is polluted. What has happened, and I think it is necessary for the state legislative people to give the necessary dollars, laws, and resources to the state people in order to respond to our need. We have a laboratory here in Ocean County that is certified by EPA, the U. S. Geological Survey, licensed by the New Jersey State Department of Health, yet our results are not utilized as a primary source of determination of ground water contamination by representatives from DEP. If we find an area suspected of pollution, we must call in members of DEP. They then again re-test that water supply and we have difficulty in getting response back. In some instances it has taken as long as three to six months to get an answer in regard to whether or not they also believe that area has a problem. I don't know whether this difficulty is because of resources, lack of their own laboratory facilities, or just overwork throughout the entire state, but this is a problem of response to a community need.

ASSEMBLYMAN LESNIAK: Mr. Kauffman, what I will do is direct our Committee Aide to address an inquiry to the Department of Environmental Protection with specifically that problem and to ask for a written response from the Department concerning your problem. So, we can have their answer on the record. We don't have the DEP representative here this afternoon, so we will obtain that for you and forward a reply and see what we have to do after we get that response.

MR. KAUFFMAN: I would like to say that the response from the Department of Health is a lot quicker and at least the response has been in some instances

almost immediate. That is because you have established a special task force with Dr. Patel and his group and it is working. It is responding and it is giving us the tools and the necessary backup to take action on the local level.

The Board of Chosen Freeholders in cooperation with the Ocean County Health Department and the Ocean County Planning Board, has initiated a ground water monitoring program in conjunction with the U. S. Geological Survey, utilizing Federal 208 Grant Funds. This survey will be monitoring the water quality in over three hundred ground water monitoring points throughout Ocean County for 30 pollutants. This is in addition to a long standing 208 Study we did for surface waters and are still continuing on our own after the federal funds have disappeared.

Ocean County has had a history of being concerned about its water, both surface water and ground water quality. This is our focus here in the county. It is our belief that the State of New Jersey should take the necessary action to develop legislation and programs to provide the appropriate safeguard for the public water, which is used for potable water purposes. Such action, as Assembly Bill 208 with amendments, introduced by Assemblymen Lesniak and Bennett, would be an affirmative action by the legislature and is excellent. This bill could be strenghthened by defining a water supply system as "a public community water system which serves at least 15 service connections used by year round residents or regularly serviced at least 25 year round residents." This change would allow this legislation to be consistent with the definitions as set forth in the "Safe Drinking Water Act" which the legislation administers.

There is no sense of having 1000 customers. What does 1000 customers mean, 1000 houses?

ASSEMBLYMAN LESNIAK: I agree with you. We took that just as an example on a recommendation made by someone who testified here prior. But, we were looking at specifically what criteria we ought to set and I appreciate this recommendation. I think we would adopt that.

MR. KAUFFMAN: Thank you. Assembly Bill 208 requires the owner or operator of such water supply systems to provide periodic testing; however, for the most part, there are few standards to enforce or to compare the results of such tests. Therefore, the tests in themselves may not be significant. I would recommend that minimum standards be adopted where available, and where none have been established that the proposed federal or state criteria become the minimum standards for such drinking water supplies.

The federal government has proposed federal criteria for the priority pollutants in drinking water, and has agreed to set forth drinking water criteria for 65 classes of toxic priority pollutants, including 129 individual compounds. However, the federal government has not established standards, nor do they seem likely to in the near future. One thing you have to remember on a local level for a local Board of Health or a local Health Department or even for the state, unless there are standards for us to move upon, and unless there is some guidance to do, we can't take corrective action. There is not much we can do. So, unless you give us the tools to work, we are still stuck in saying to the individual, "Well, this is what your test results are; we don't recommend that you use that water, but we can't do anything more than that. It is a serious problem on our level in trying to get corrections and moving forward to do something for the individual.

I would recommend that the Legislature act adopting a criteria for potable water supplies that would at the maximum permit only one in ten million persons drinking a toxic chemical at a proposed level for a lifetime. I have attached to this statement a copy of a special supplement from the New Jersey Hazardous Waste News available from the Environmental Research Foundation, Lawrenceville, which shows the proposed criteria in parts per billion at permitting cancer in one person in one million and if it is carcinogenic. I have said that the standard should be ten times that. So, we are talking about a very low amount. Such criteria should be incorporated into the standards enforceable by state and local agencies with appropriate fines.

I also think, referring back to previous testimony, Mrs. Singer's and the representative from the DEP, that there has been a proliferation of expansion in building throughout the State away from large water supplies, large sewage systems, and the focus on developing individual water supplies, individual wells. I think that growth should be orderly and growth should be surrounding facilities that can support growth, such as public water supplies and public sewer systems, expecially in areas surrounding the pinelands. To develop in haphazard manners with septic systems can cause just the same type of pollution that you may have as you alluded to in the Dover Township area of Silverton. We also have a problem that there is a conceptual difference between DEP and the Ocean County Sewerage Authority and the Ocean County Planning Board in relationship to the davenport interceptor, and the connection of the Crestwood area into the Ocean County Sewerage Authority. I think, if you will review your records, you will find that the facilities at such developments are not capable of meeting the standards as set forth in today's regulation for the proper protection of our ground water in Ocean County and that the way to proceed here in this county is by proper sewers and installation of collector systems.

The Committee by now recognizes that the potable water supplies of this state have been contaminated by the leaching of hazardous substances, and that Ocean County has been in the forefront of such problems. It is therefore our request that this Committee assimilate the information being presented today and take such action found to be warranted to protect the potable water supplies in the State of New Jersey. Thank you.

ASSEMBLYMAN LESNIAK: Thank you. How would you recommend that the criteria be established for those toxic contaminants that are not carcinogenic?

MR. KAUFFMAN: I would use the best state of the art and the best knowledge that is available today.

ASSEMBLYMAN LESNIAK: I mean, for instance, we could develop legislation that directed DEP to develop criteria for contamination for a contaminant that would at a maximum permit cancer in one in ten million persons. Okay, that deals with the carcinogens. But, what about the other deleterious side effects that a chemical may have. How can we direct DEP to develop standards in a way that we know they are going to develop such standards?

MR. KAUFFMAN: We do have - and I gave you a list - non-carcinogenic chemicals that proposed criteria has been established for.

ASSEMBLYMAN LESNIAK: Yes, I mean criteria has been proposed by the EPA.

MR. KAUFFMAN: That is right, and to wait until the federal government does something, I don't think they are ever going to come out.

ASSEMBLYMAN LESNIAK: I would agree with you on that.

MR. KAUFFMAN: If there was a basis to propose this criteria, I would use that as my recommendation.

I think you have to use the best state of the art. But, I think you must come up with a number. If you don't, we just have no way of acting. You have to have a policy at the state level. The Legislature must come out with a public policy, not necessarily scientific evidence, but what is needed is public policy in relationship to this. The scientists are going to argue on both sides of the issue. Just take cigarettes. They will argue this until they are blue in the face, but a public policy has to be set somewhere along the line.

ASSEMBLYMAN LESNIAK: Okay. There is, as far as the non-carcinogens, criterion based on toxicity, and we can draft that into legislation, whatever determinant was used. I think we ought to. I really appreciate the information you have given us.

MR. KAUFFMAN: Thank you very much.

ASSEMBLYMAN LESNIAK: Thank you. At this time I would like to call Hal Bozarth, who is the Chairman of the Chemical Industrial Council, who has been working with us in trying to solve some of the problems that they did not entirely create themselves.

H A L B O Z A R T H: Thank you, Mr. Chairman. My name is Hal Bozarth. I am Director of Government Relations and Public Affairs for the New Jersey Chemical Industry Council. I am sure both members of the Committee are aware that the Council is comprised of about 70 different chemical manufacturers in the State of New Jersey.

ASSEMBLYMAN LESNIAK: It varies every time you testify before us. It was 63. What is going on?

MR. BOZARTH: Well, if you notice, Mr. Chairman, our membership keeps rising, probably in proportion to---

ASSEMBLYMAN LESNIAK: In proportion to the legislation I am sponsoring.

MR. BOZARTH: That's right. I guess it is a good way to keep a governmental relations person in business. But, we would like to thank the Committee for allowing us to testify on this issue. We agree with your premise that protection of ground water is of utmost importance. I would like to digress from that, as the main focus of my speech,and give you some background, not only on our industry, but on the problem as a whole of hazardous waste generation, so that you will be able to see the amazingly large ramifications of this problem, and in some cases from whence it comes.

First of all, in New Jersey the chemical industry is the largest industry in the State. We employ approximately 130,000 people throughout the State, which is far and away the largest industry. Nationwide, New Jersey's chemical industry is ranked either second or third depending upon which figures you use.

ASSEMBLYMAN LESNIAK: My district has the highest concentration of chemical companies, probably in the world.

MR. BOZARTH: That is correct. That is one of the reasons why you are so well versed in these issues.

The industry is extremely important to the economic health and well-being of the State and that, like ground water protection, is not something to be taken lightly. Taxes aside, jobs aside, the economic viability of trade within New Jersey and within different states is in a large part predicated on the success of the larger industries in the state, the chemical industry being, as I said,

the largest. As you so aptly pointed out, the chemical industry in New Jersey right now is paying in excess, I believe, four or five major taxes to help the state and the people of New Jersey solve this problem.

Let's take a look at the hazardous waste generation problem for a second, if we may. Total amount of waste generated in the United States is extremely large. The EPA figures for 1977 are about 344 million metric tons. Now, out of that total amount of waste generated, less than 1% is hazardous. That is not to minimize the effect on the environment. It is just to put the whole waste generation problem in perspective for you. For instance, other industries are a large part of the hazardous and non-hazardous waste generation. For instance, industrial, agricultural and mining waste generated in 1977 totalled together 4 1/2 metric tons. So, it is a small fraction of the total waste generated.

We can break the categories down to approximately 17 different industrial groups, which produce a waste that has been characterized by the EPA as hazardous. For example, agricultural, mining, municipal, solid waste and others total in excess of at least 8.3 billion tons. But, again, the percentage of all wastes,which were generated,which were hazardous less than 1%. In the United States, the chemical industry generates a total in about a year of about 12 million tons. An interesting fact that I would like to point out,that is sometimes contrary to public and common belief, is that the major industrial units within the chemical industry which produced over 85% of all industrial chemical products, out of those people in an EPA survey it was shown that 90% of all the waste they generated was handled in an environmentally sound and safe and secure fashion on their company site. So, the vast majority of industrial produced chemical substances are being taken care of. That again points out the fact that that amount of waste which escapes from the system, out of the system, is still extremely dangerous and must be watched very carefully and controlled to make sure that we don't have any of these problems.

Being one of the 17 industry groups which produce a hazardous waste, I think it makes the point that the problem is societal in nature. It is something that we have been saying for a long time. And, it is really unfair and I am glad that we have had this opportunity to point out the fact that our industry in New Jersey and across the nation is not the culprit. If anything, we are paying more money than any other industry, statewide and nationwide, to make sure that effluents that we have---

ASSEMBLYMAN LESNIAK: You don't want to absolve the chemical industry from any blame.

MR. BOZARTH: Certainly not. I think that any blame that is to be found, let's say in an abandoned waste site, either can be traced back to even a major producer, and that is obviously where the responsibility lies. Our position has been consistently that enforcement of things like well contamination and the rules and regulations must be constantly upgraded. That is one of the problems. We look at Jim's situation in Legler in Jackson Township, a horrible catastrophe happened there. That specific situation was in a municipal landfill, which accepted anything and everything far in excess of the permits they finally got. Even when the permit told them they could not accept any more, they accepted it in a midnight dumping type atmosphere. Those kind of things have been happening around the State. Those are the kinds of things that can't be let to go on. That is why I am stressing enforcement and we are also stressing this kind of legislation,

which will test the water supplies and make sure that for future generations these problems will not exist.

Specifically, as I am sure you are aware, the DEP in 1981 came out with a report called "Toxics in Ground Water," and this report was done by Dr. Albert Tucker. I want to take one or two sentences from that report. They tested 670 wells included in this report and 31 were found to be contaminated to some degree. But, of those 31, I believe only 11 had been used for drinking water; 20 were used for industrial or monitoring purposes, and would never be in a situation where some would get their water from that. A monitoring well, as you know, is a system which surrounds a secure landfill and industrial site to make sure that should ground water contamination and leachate stray from the site that it is detected at the earliest possible minute. Again, it is not to denigrate the thrust of what you are trying to do here. It is to point out that now is the best time to become involved when the problem is still able to be handled.

We would like to think, the chemical industry in New Jersey, that we function as a very responsible segment of our industrial area. As I pointed out, most of our waste is handled on company sites. Situations that have developed in the past, where midnight dumpers have been allowed to maraud through the pines and the area such as here in Ocean County, should never have been allowed to happen. Anecdotically, I know that we joke in the industry that even with New Jersey's manifest system now, some of our plant managers are so sensitive to this problem of midnight dumping that they threaten periodically to ride those trucks to the destination to make sure that hauler is living up to the contract of the manifest and that waste does get to the right spot.

We should not have any more Leglers. As you know, we supported the Hazardous Waste Facilities Siting Act, which will go a long way to helping us solve the problem for industries which are small enough not to be able to support waste water treatment programs of their own on their company site. So New Jersey has a place to have their hazardous waste taken care of in an environmentally sound fashion. We support, in addition to that, the concept of your legislation before this group today. We think that dumping that probably should have been going on in the past, and we think that the chemical industry - as you will hear later on today - will be a large factor in helping to solve the problems that exist.

I leave with you, Mr. Chairman, just a few more things. And, one is a copy of the National Chemical Manufacturers' Association position on ground water. It is a comprehensive national ground water strategy. It lays out the kind of ground work that your staff might be interested in looking at to see where you should be going from this starting point.

It is our feeling, as with the CMA, that the system should be scientifically well balanced with reasonable goals and manageable strategies and make sure that we can protect the drinking water. We do advocate a classification of ground water use, a multiple use kind of thing, if you will. All ground water isn't necessarily used, has been used, or is able to be used as drinking water.

ASSEMBLYMAN LESNIAK: I think we are talking in terms of this legislation directing it at drinking water.

MR. BOZARTH: Okay, fine. I know you are going to be looking at total ground water.

ASSEMBLYMAN LESNIAK: I am going to take this weekend off, go on a ski trip and just bury myself in that report.

MR. BOZARTH: We are sure, Mr. Chairman, that you will be able to, after reading this report, achieve a balanced and harmonious protection of not only the public health and environment, but the economic well-being of the state. We think both of those two can survive together.

ASSEMBLYMAN LESNIAK: Thank you, Hal. I appreciate us being on the same side of an issue.

MR. BOZARTH: It is nice for a change, Mr. Chairman.

ASSEMBLYMAN LESNIAK: Thank you. I would now like to call someone from Calgon.

D E N N I S J. S U L I C K: Thank you, Mr. Chairman, Mr. Vice Chairman, on behalf of Calgon Corporation I would like to thank you for the opportunity and the invitation to testify before this Committee.

My name is Dennis Sulick. I am Group Manager of the Potable Water Service of Calgon Corporation. I would like to submit three copies of my testimony, as well as some recommendations on the mechanics of A-280 itself.

ASSEMBLYMAN LESNIAK: Is this a summary of your testimony, or is this going to be your testimony?

MR. SULICK: That is going to be essentially my testimony. What I would like to do is first of all give you the background of Calgon Corporation. Calgon Corporation is a subsidiary of Merck, Incorporated, of nearby Rahway, New Jersey. Their main business focus is in the area of human health, animal health and environmental health. Now, Calgon Corporation is the environmental health section of Merck, Incorporated. Calgon, specifically, is the world's leading supplier of granular activated carbon. I think Mrs. Singer this morning alluded to the use of granular carbon in Europe.

We have been instrumental in applying granular carbon for more than 35 years, and more specifically in the area of municipal potable water treatment. We started supplying granular carbon in 1961. Within the past five years, we have worked on 26 specific installations where we are treating contaminated ground water.

ASSEMBLYMAN LESNIAK: What is the current situation in Atlantic City? Is that in place?

MR. SULICK: At the present time, there is granular activated carbon in the water filtration plant at Atlantic City. As I understand it, Mr. Goldfein is going to be appearing after me, so I will let him make more comments on it.

But, if we could, I would like to very briefly focus in on the problem. We pointed out earlier, and much of the testimony today has shown, that the problem is nationwide. Here in New Jersey it has a very high impact, because of the number of people throughout the State who rely on ground water. It is a very important issue that touches roughly one out of two people in the United States, and as you pointed out, about 60% of the people in New Jersey are impacted by contaminated ground water.

During some of the testimony this morning, we also heard various ways in which an aquifer can be used. We have a drawing that we brought along. I would like to point out some of the ways, because we are going to be referring to it a little later in some of our recommendations. There are various ways in which an aquifer can be contaminated - some are the deliberate contamination of the midnight haulers, some are the hazardous landfills, I think, which are depicted there under chemical dumps. In 1980, there was a survey done by the

U. S. EPA on lagoons and industrial waste treatment sites in the United States. What they have shown is that there is greater than 170,000 lagoons and impoundments in the United States. Of those 170,000 lagoons and impoundments, roughly 26,000 of them are known industrial-type hazardous lagoons. And, of the 26,000 there are roughly 9,000 of them that may contain hazardous waste that are located either directly on top or in very close proximity to an aquifer that produces potable water.

ASSEMBLYMAN LESNIAK: Do we know how many are in the State of New Jersey?

MR. SULICK: I am sure the number is known. I don't know it for a fact. Some of the chemical dumps - these are the easy ones to identify Price's pit, Burnt Fly Bog, and everyone knows about these. There are also certain areas of the country and I am sure in certain places of New Jersey where land broadcasting of pesticides and herbicides takes place. I know specifically some areas in the country where a pesticide was used in 1972 and banned from use in 1972. One year ago, it was just detected in the ground water. People were drinking this type of pesticide that wasn't seen for approximately ten years. It took that long for the pesticide to migrate down through the soil and into the producing aquifer itself.

ASSEMBLYMAN LESNIAK: There are many other sources of contamination, also, aren't there?

MR. SULICK: There are some sources that are more innocuous. These are the very visible ones that people could point at very easily.

ASSEMBLYMAN LESNIAK: We had a hearing about a month ago regarding underground storage tanks, which are becoming more and more prevalent in terms of a source of contamination.

MR. SULICK: The reportings of water that has been contaminated by gasoline products is growing in just about every state in the United States.

ASSEMBLYMAN LESNIAK: And then we also have a problem in terms of septic systems, both in terms of chemicals used to clean them and also in terms of inadquate maintenance and construction.

MR. SULICK: Yes, for years the organic trichlorethylene, TCE, used to be commercially available on the shelves in hardware stores and the instructions were to flush it down your toilet and this will clean out your septic tanks. One gallon of trichlorethylene can contaminate many millions of gallons of an aquifer itself. So, there are many ways, which have been covered in the testimony, in which the ground water can become damaged. The threats are visible.

ASSEMBLYMAN LESNIAK: And once the ground water is contaminated, then what?

MR. SULICK: This is what I wanted to get on with a little further in my presentation, if you will. I will refer to that a little later. That is why I wanted to show this drawing.

Now, the types of contamination that are shown - we are seeing chemicals such as benzene, toluene, and zylene. These are the industrial type solvents. Again, they are the major constituents of gasoline. We are seeing organics such as trichloroethylene, tetrachloroethylene, which is used in the dry cleaning industry. We are seeing solvents such as benzene, vinyl chloride, dibromochloropropane, and these types of organics which are synthetic and industrial in nature have been finding their way into the ground waters themselves.

Now just because these organics are there, they pose some unknown threats. There are really four threats themselves to the aquifer. First of all, we heard earlier where there is very slow movement of the organics. In this area, because of the sandy soil, we may be talking of migration rates in terms of feet per day. In some areas of the country or in some areas of northern New Jersey, you could be talking of inches per day of migration of these organics. So, these organics could have entered the aquifers five, ten, fifteen, twenty years ago and they are slowly moving to a producing well. So, this slow movement presents a threat on not knowing what type of organics can be in the aquifer itself.

The second threat is the low aesthetic detection level of many of these organics. If you take a glass of water, and it looks clear and it has no taste and no odor, people make the assumption that is a good quality of water. Many of these organics - trichloroethylene, the known carcinogen type organics - can exist well below the levels of perception, the aesthetic smell and taste. So, they are present and they are very difficult to recognize.

The sophistication in analytical instrumentation is what, I guess, brought the whole issue to the surface. In the past five years with the augmentation of GC/MS capabilities, they were able to go on into the part per billion range to show that these organics are present. So, this, although it is not a threat to ground water,can help highlight the threats that are there.

Another threat is the problem of sampling the water itself. In a lot of areas, organics could have entered the aquifer and could be slowly moving to the acquifer. The sample of water that is taken either from a household faucet or from a municipal well is only a sample of the water in that area. There is no way to detect from that sample if the organics are five feet away, or five miles away. So, in order to sample, you have to drill the monitoring wells that some people have already talked about. Drilling monitoring wells is expensive, also. So, this poses a threat of trying to sample and trying to put a well where the organic could be present.

Now, with those threats in mind, what I have been hearing, not only here, but in other places in the country is, "Once we have contaminated water, we have a useless situation. We have to abandon it." It seems that there comes a futility that exists among people saying, "I now have contaminated ground water." But, from what we have seen and the work experience that we have in the past twenty-one years, and more specifically in the past five years with contaminated ground water, there is really a hierarchy of events - maybe six types of treatment that are utilized almost subconsciously. Some of them are very, very short term. Some of them are just trying to eliminate the problem for that day.

One of the states of the art is buying bottled water. Anywhere you see a newspaper article that will talk about the possibility or the potentiality of our ground water being contaminated, immediately housewives will start the stream of events buying bottled water.

ASSEMBLYMAN LESNIAK: House husbands, too.

MR. SULICK: Yes. This is very short term. They want to try to alleviate the problem today and tomorrow. That has been practiced. In other areas, municipalities have tried to purchase water from neighboring cities. It has been said that all of Long Island is connected by buying water from one person to the next. There have been situations within the State of New Jersey alone where they have bought

water from a community, but then because of demands, this second community is unable to supply the amount of water that is necessary.

Sometimes, the municipalities might touch on the very fringes and their water distribution system is such that they can't get the volume of water through the very small pipes at the end of the distribution system where it meets the other municipality. Sometimes buying additional water means laying a complete distribution line to that second municipality.

Another prevalent situation also is the decision to drill new wells. They hire a hydrologist to try and find where the source of contamination is, and in trying drill wells upstream of this contamination, or perhaps a second acquifer. Again, when you drill a new well, and you sample the water, you are sampling the water in that vicinity. Drilling the new well gives you no guarantee that five miles or five minutes upstream these contaminants are still in that same aquifer. So, these are the three areas that people try to practice right away. After they do them, and some municipalities are still left with the fact that they have to treat, then we have usually three different types of treatment that we would like to briefly touch.

One is granular carbon absorption, which we have worked with, and which we have 26 systems operating in the United States on contaminated ground water. We feel that this technology is available. It has been practiced for years, and it is not an experimental type technology. And, the most important thing is, all technologies are good, but they have to be cost affordable to the people who use the systems themselves. Our granular carbon system is involved in Rockaway Borough and Rockaway Township, and we do have granular carbon in Atlantic City. If we look for a minute at the Rockaway Borough and Rockaway Township, we hve installed the granular carbon system from calculated numbers, and the actual numbers are what was seen in the towns. They were treating their water from anywhere in the range of 40¢ to $1 per person per month with granular carbon.

So, we feel and it has been demonstrated in many municipalities that this is a technology that is cost affordable. People are willing to pay the 40¢ to $1 per month per person to have these organics removed.

Now, I touched very lightly on granular carbon, but it has the ability, the way it is produced and the way it is made, to remove a wide variety of organics, not only volatile type organics --- It has a high ability to move the 129 priority pollutants - those types of long chain high molecular weight organics also.

There are two other treatments that have been utilized to varying degrees. One is aeration, which consists of taking the ground water and pumping air through it, and taking the organics out of the water by aeration, or putting it in the atmosphere. Another one is using ion exchange material to take the organics out of the water, and then put them on the ion exchange material and activate that, much like a home water softener. So, those are other technologies that have been utilized.

Again, we feel that the granular carbon has certain cost affordable benefits to it. We also feel that whatever the treatment mechanism is - whether it is aeration, granular carbon, or a combination of two or drilling new wells - the important point that has to be pointed out is that there are treatments that are available that can be utilized. It is not a futile situation once a ground water contamination is found.

ASSEMBLYMAN LESNIAK: Is it a viable alternative to those home owners who have private wells?

MR. SULICK: The area that we have worked with in the past five years has been more toward the large municipal or the large industrial type. There are manufacturers who do make the home treatment types of units that use our granular carbon. I think those would be the people to address the application of those in-home uses. The granular carbon may be the same, but the method of utilization of ours is different.

ASSEMBLYMAN LESNIAK: It does involve monitoring that the home owner probably could not do.

MR. SULICK: Yes. Any time you use granular carbon or any type of treatment technique, there is always monitoring. You have to be aware of the influent - what is going into the treatment device or treatment facility - and you have to be aware of what is coming out. So, you can control---

ASSEMBLYMAN LESNIAK: You have to know when to change the carbon?

MR. SULICK: Yes. It does take technical people. The water industry has a sufficient amount of technical people who can utilize granular carbon in municipal applications, which has been demonstrated throughout the State already.

ASSEMBLYMAN LESNIAK: Thank you very much.

MR. SULICK: I just wanted to point out a few recommendations, since the purpose of this meeting was on the legislation. We wanted to offer a few recommendations for the Committee to consider.

First, we do support the idea of testing water supplies for possible organic contamination. Before any type of standards, or before any type of treatment should be implemented, first, people should be made aware, number one, does organic contamination exist, or will I be prone to getting organic fowling or organic contamination in the future. But, the first step in doing anything, in setting levels or in setting any type of treatment objectives, is first to recognize the level of contamination that is there at this time. So, we do support the idea of testing the water supplies.

In the submission that I made, we made some mechanical recommendations on A-280 and how it should be amended. We also feel that additional legislation is needed on a state level, which will provide for funding assistance for municipalities that were affected by these hazardous waste sites. Not only is the recognition that a problem could be present in a municipal water, it must also have some type of funding utilization which they could use.

If I could, I will refer to that drawing very quickly. There is a linkage effect that takes place. If you will notice, some of the chemical dumps like Price's Pit, for instance, it is located maybe five miles or two miles away from the Atlantic City water plant. Or, in many areas, where they are located remote from the city source itself, the chemical contaminants that were found in the dump site have really migrated off site. They are no longer present in what you would call the physical confines, or the physical boundaries,of the landfill itself. The landfills have been earmarked for super fund type of funding.

Now, the contaminants in many cases have migrated off their physical boundaries to a municipal well. There should be some mechanism, we feel, to apply super funding to control these contaminants and to help the municipalities that have been affected by contamination that were at one time within the physical boundaries of these hazardous waste sites themselves.

And, finally, another thing I would encourage is support for the concept of maximum concentration limits. I think Mr. Kauffman spoke about it before I did. There should be specific quantitative limits established for many of these organics. The health risks that these organics pose should be closely studied as well as the maximum concentration limits set, especially on volatile type organics that are known to be carcinogenic in nature.

ASSEMBLYMAN LESNIAK: Thank you very much.

MR. SULICK: Thank you for the opportunity to testify.

ASSEMBLYMAN LESNIAK: James Mc Carthy.

J A M E S M c C A R T H Y: Thank you, Mr. Chairman. For the record, my name is James Mc Carthy, and I am from the Legler Section of Jackson Township, New Jersey, where for two years living life was not a great adventure.

Since the beginning of time, mankind has instinctively recognized the dangers of interfering in the natural order of the environment. The lessons of legion of the evils of altering the natural state, but somehow despite this inherent protective mechanism, modern man cannot see beyond our immediate need. We needed more coal, so we stripped the countryside. Now, the flower and fauna have to be replaced at staggering costs. When atomic power became a reality, we could not wait to have cheaper fuel. We are now paying the price with the problems of nuclear waste disposal.

When Rachael Carson wrote of the silent spring many, many years ago, she was condemned as an alarmist. We are now paying the debt for not heeding the warnings of the dangers of pesticides. Air, water, food, vital to life, there is not one of these life forces left uncontaminated. It is not our ignorance that has caused this pollution, but rather our greed, the greed for the good life, also known as modern day living.

Chemicals are a fact of life. Mankind demanded that we create these modern day miracle products for our every day convenience to make life easier for all of us, so we would not have to live our lives as our forefathers did. The chemical industry was but a tool by which to fulfill these goals. Modern chemical technology satisfied our demands. Toxic and hazardous wastes are a fact of life. They must be treated with respect and reverence. Lack of knowledge and responsibility for toxic waste by-products over the last thirty years has created the potential environmental disaster error we are now experiencing. Hazardous waste disposal is also a fact of life. Properly administered and regulated, and with adequate safeguards to protect the populace, we can learn to live with it. However, they do not belong in drinking water supplies throughout this nation.

I do not come before you as an environmentalist. I come before you as a survivalist, not the type that buries dehydrated food in a cave and stands guard with a gun, but as one who is the victim of the greed of humanity and one who is determined to spare future generations the horror and suffering that my family, as well as 165 other Jackson Township New Jersey families, had faced for over two years and will live with as long as we are on this earth, as a result of improper and illegal disposal of hazardous waste in a municipal landfill in our neighborhood - which, according to the DEP contaminated the potable water supplies in a four-square mile area.

At this hearing, we will hear many experts. There will be chemists, geologist, hydrologists, toxicologists, all people with a message we should heed. My expertise is not in the field of geology, nor in the field of chemistry or

hydrology. My expertise is in the field of death and human suffering. My education in this field was given to me by government, government on all levels who are uncaring, at worst, and unknowledgeable, at best, in dealing with the tragedy of human exposure to hazardous waste. I can truly say that lack of responsive action and regulation of hazardous waste disposal by federal, state and local government have made me an expert in this field. I now possess a B.S. degree in government administration. That is B. S. as in bureaucratic stupidity. Over 38 different toxic and hazardous chemicals have been found in our drinking water supply; 640 men, women and children have suffered severely physically, emotionally, and financially, all as a result of unnecessary exposure of the populace to hazardous waste, because government agencies failed to do the job they were made to - protect the public health.

The cry of the people of Legler is that we are not numbers on a graph; we are not statistics to be pored over by scientists looking for pat answers to a vast and unexplored dilemma, nor are we pawns in over $1 billion in precedent setting lawsuits which involve over 36 different defendants, including the township of Jackson, New Jersey. We are human beings and we vehemently believe the human tragedy of living through this kind of hell should be told publicly to truly depict the horrifying consequence of negligent and criminal toxic waste disposal in America and consequent ground water pollution.

The fear for our children and ourselves, the anxiety of future medical problems and the coping with existing ones, the humiliation, confusion and rage at dealing with uncaring and unknowledgeable government officials at all levels; the daily drudgery of hauling in drums of water to be rationed among family members; the tension ridden side effects sparking confrontations among the residents themselves and the sledge hammer realization that our lives and our future destiny have been unwillingly plotted for us, because of lack of proper regulation and administration of hazardous waste disposal; the consequential result is a four square mile of an underground aquifer is severely contaminated and will be unable to be used as a potable water source for an estimated 200 years, according to the Department of Environmental Protection.

As it happened, we in Jackson, New Jersey, are not alone as victims of this vicious toxic pollution cycle. Towns such as Elizabeth, New Jersey - Chester Township, Dover Township, Logan Township, Rockaway Township, Rockaway Borough, Plumsted Township, Stafford Township, Lacey Township - have all experienced problems with contaminated water supplies. These names read like a litany across the face of New Jersey. The list could go on for volumes. Everyone in this room could probably add the name of some town in New Jersey to it.

Someone once said that pollution is the new industrial frontier. They may have a point. Cleaning up our waste is big business. The cost will be great, but the cost of not doing it will be greater. Our potable water supplies must be protected at all cost.

I am convinced that toxic waste is here to stay. The demand for modern conveniences at a low cost is in too much demand to fight it. But, there is an alternative to killing off the public by slowly poisoning the water supplies around them. Government must be held strictly accountable for their responsibility to protect the health, safety and welfare of the American public, a job that government has failed miserably in the past to do. The government must not be allowed to put a dollar sign in front of the value of a human life as it currently does in

determining toxic waste clean-up priorities. Industry must be held strictly liable in the future for their responsibility for safe and proper disposal of hazardous waste. Industry should enter into a voluntary clean-up program with government to clean up current hot spots across the State of New Jersey.

We, the greedy public, must assist industry in seeking proper legal toxic waste disposal facilities in order to eliminate the incentives for illegal disposal of such waste. Public water purveyors must be more closely regulated with regard to testing procedures.

Recycling, conservation, and old fashioned thrift must become our new code. As the Mormons say, "Use it up; wear it out; eat it up, or do without." Siting an operation of hazardous waste disposal facilities is the most serious political and moral issue facing our world. We cannot allow vested interests and profit motives to overshadow the moral issue of a pollution free society for our children. Government, that is, responsive government, industry and the people must unite to tackle the critical health issue of unnecessary exposure of the populace to hazardous waste. People assume that water is potable if it looks clear, as the gentleman from Calgon explained. That is not true. My water in Legler was crystal clear; it had no odor to it whatsoever, but upon testing by the DEP, it was found to contain approximately 16 different chemical compounds.

We in Jackson, New Jersey have waged a three year battle over this very issue. We have dealt with uncaring and unknowledgeable politicians, incompetent and bureaucratic government agencies, public apathy and non-commital press corps. We have overcome all these obstacles and brought national exposure to our tragedy, and thus responsive action by government agencies. The landfill is now closed by a court order and clean up as ordered by the court is now in the design stage.

You, the members of the Legislature, must ensure that laws that require testing of potable water for chemical contamination are enacted and above all enforced. The siting and operation of the hazardous waste disposal facilities, the most serious political, moral issue, facing our world, we cannot allow vested interests and profit motives to overshadow the moral issue of a pollution-free future. We must recognize that industry is not solely repsonsible for our dilemma. The chemical industry was a tool we used to satisfy our demand.

The education of our citizens to the need of better toxic waste management will also be a major endeavor toward a goal of a clean environment. A little preventive medicine of education will cure a lot of ills from contaminated drinking water supplies. Irving Shapiro, Chairman of Du Pont has managed to put the issues into persepctive. He is quoted as saying, "Let's start with today not worry about who did what in the past. Government and industry should work together rather than get emotional. We have to get going rather than sit around trying to figure out who is wearing the black hat and who is wearing the white hat."

When we leave this hearing today, let us go forward with the thought that America is always best in a crisis. We are at war with contaminated water supplies, but we are at the halfway point of the battle. We know the enemy. All we need now are the weapons of human determination to vanquish the foes.

I would like to make a few recommendations to the Committee. First of all, it should be emphasized, as proven in Rockaway Township and Rockaway Borough, that public water systems are not completely safe, as everyone believes. Mandatory testing for chemicals must be required for both public and private water supplies. Legislation should be enacted to require local township health departments to require wells for brand new homes to be tested for chemicals before a C.O. is

issued to the builder. In Jackson, in our situation, we had 58 homes purchased, moved into those homes and in one instance, one lady was there for an hour when a township truck pulled up and asked her how many buckets of water she wanted.

People spend their lifelong savings to move into these houses and assume that because the township issues a C. O. that everything with that house is okay, including their water supply and that is not true. For the past 40 years, all the health officers have ever tested for are the standard BOD scan, basic bacteria. Nobody has ever required chemical scans. This is something that has to be done right now, not just for public water supplies, but on private wells. You are not going to get away with making it retroactive on everyone's house, because no one will do it, and it will never pass. But, if you do it to protect the financial interests of all these people moving into brand new homes who don't have the money to drill an alternate well, or seek alternate water supplies, the cost would be passed off in the form of a mortgage payment, an increased cost, but it is like health insurance - pay us now to protect your health later in case something does happen. It is a well spent money. You should think of that and consider requiring that private wells, on brand new homes be tested before the buildings are occupied.

As it exists today, federal, state and local government cannot guarantee the integrity of the public and private water supplies in this State, and above all, they cannot be trusted based on past experience, to do so. Any legislation that you may pass to protect the public from exposure to contaminated water supplies must have clout. The Division of Water Resources must have funding and above all the personnel to enforce your protective laws. The gentleman from Calgon mentioned activated carbon units. I believe that activated carbon units should be required for safety reasons on all public water supplies.

Point of use filtration systems must become a household word. This is the individual carbon units that homeowners can buy, such as I have bought myself. And, it must be the final protective step in the potable water transfer process. Everybody thinks new water systems are great. I am on the new Legler water system. I have been on that system for 1 1/2 years. I had wanted to bring down a sample of the cartridges to show you what I am paying over $300 a year to a county to drink and what these filters are catching in this water system and stopping them from going through my drinking water.

ASSEMBLYMAN LESNIAK: And that water isn't tested for hydrocarbons, is it?

MR. MC CARTHY: No, it is not, and the well happens to be three quarters of a mile away from the contaminated landfill, but they say it is deeper. But, looking at these pure white cartridges that I installed two months ago in my home, and I invite anybody who wants to come take a look at this thing. It is under my kitchen sink, and I want to know where it is coming from and why I have to put up with that kind of quality.

ASSEMBLYMAN LESNIAK: There is nothing stopping the municipality from testing, either. There is no statewide requirement. As we saw in Rockaway Township, they certainly can do it.

MR. MC CARTHY: Rockaway Township is a responsive government. There is a difference. There are a lot of instances in the State where either politicians or governments are not responsive - either by choice or by reason of finances. I will not state which it is in Jackson Township. You draw your own conclusions. As I said before, I invite anybody who wants to know about potable water to come to my house. Our new system, seven miles of mains, is built of asbestos concrete

pipe, and we were told that the federal government allows it. They know it is controversial; they know that in five or ten years down the line they may be required to dig up those lines. But, the town was thinking solely of cost factors when they installed them.

There is testimony about trihalomethanes and chlorine in public water mains. Our new Legler water system smells more like a swimming pool than a city water system. This is one of the main reasons that I installed an activated carbon filtration unit in my home to remove all the vast amounts of chlorine and other by-products. I am now finding out that it is removing a lot of other stuff. I don't know what it is, but I am getting it in the filters. So, please, it may be unpopular, and it may be extremely expensive to require all public water systems to use carbon filtration units, but they do work. As far as people on wells, for their own safety, they should have them tested. There must be 100 different manufacturers out there who make filtration systems. Consider it an insurance policy. You may not need it. But, in case you do need, please.

ASSEMBLYMAN LESNIAK: Thank you. I understand why you didn't want me to interrupt you. That was very good testimony. I appreciate that. (Applause)

Elizabeth Otto.

E L I Z A B E T H O T T O: My name is Elizabeth Otto;I am from the Association of New Jersey Environmental Commissions. The Association is a private, non-profit, membership organization. As such our primary charter is to provide education, information and advice to municipal environmental commissioners, other environmental organizations and the public at large.

As part of this activity we were awarded a United States Environmental Protection Agency grant to make information from the federal computerized chemical data-base network available to the public without government or indutrial interpretation. This networking system is called the Chemical Substances Information Network and we have brought the Committee copies of our brochure announcing this service.

In providing this and all our other services we receive inquiries from a large variety of sources. It is of interest that a large percentage of these calls related to concerns ove rthe pollution of drinking water supplies. To say that the public is concerned and that the problem of contamination of New Jersey's ground water supplies is very real is an understatement. The public is concerned and rightly so.

The questions we receive on a daily basis reflect that concern. Local Boards of Health and Planning Boards and governing bodies are at a loss to offer proper protection from future problems, much less find the money to finance remedial programs.

I would like to give you some examples of recent calls for information on the CSIN databases to show you of the range of public concerns. Clearly, the largest percentage of calls deal with contaminants found in drinking water supplies. The effects of pesticides used to control the gypsy moth are next in public concern. The questions on water supply contamination involved chemicals including trichloroethylene, benzene, gasoline, and heavy metals including lead, nickel, and mercury.

In Europe monitoring of water from private and public sources is done on a more frequent basis and the use of high technology activated carbon filters helps to assure a safe, thoroughly treated, water supply. In addition, aquifer recharge areas and watershed areas are protected from toxic spills and from

pollution from urbanization. We in New Jersey must protect our surface and ground water systems and count the costs of such protection on the plus side instead of as a loss of rateable or cost to industry. The research upon which we must base our decisions is insufficient to prove that even the minimums used for establishing existing safe drinking water standards will be safe over the long term and over numerous generations. The ultimate costs of destroying our water supplies will be reflected in the GNP of the future and must be considered in determining our course of action today.

We have a problem for which adequate research, closer monitoring, land use controls, improved technology, and respect for natural systems can offer us some answers. Thank you for the opportunity to testify today.

ASSEMBLYMAN LESNIAK: Thank you. You believe that land use controls are a vital element in terms of dealing with our water supply, not in the quantity but in the quality; is that correct?

MS. OTTO: Yes.

ASSEMBLYMAN LESNIAK: Thank you. Joseph Ritz? Is he still around? If not, Mr. Ritz did hand me some proposed legislation that the State of New York is working on, and we will enter that into the record.

George L. Czurlanis. What's in the bag, George?

G E O R G E L. C Z U R L A N I S: A bottle, non-alcoholic. Mr. Chairman, members of the Committee, my name is George Czurlanis. Thank you for this opportunity to give testimony.

ASSEMBLYMAN LESNIAK: Thank you for your patience. Where are you from, George?

MR. CZURLANIS: I am from Little Egg Harbor Township. We have listened to many expert witnesses, and all are in agreement as to the purity of our drinking water, or the net result is, what comes out of the faucet. We have addressed many problems concerning chemicals and other contaminants and the last young lady who gave testimony brought up asbestos. Now, many of us are not aware that asbestos is a carcinogen, and the majority of the water pipes that transport our water - be it non-contaminant or contaminated or asbestos cement. We in the pinelands region here are in an area where the acidity in our water is of such high content that it is equal to your household vinegar. This bottle here, apple cider vinegar, has a content of four percent acidity. That is what is in the bottle.

ASSEMBLYMAN LESNIAK: That is good salad dressing.

MR. CZURLANIS: Right. I have a newspaper article here---

ASSEMBLYMAN LESNIAK: George, in Little Egg Harbor, where is your source of water from?

MR. CZURLANIS: Our source is a well, and the main transportation, the majority of it,is through asbestos and lead pipes. I have an article here---

ASSEMBLYMAN LESNIAK: I am sorry, do you know if your water is--- What is the water company involved?

MR. CZURLANIS: It is an MUA. It was recently purchased from a private water company, the Mystic Island Water Company. The developer put the pipes in.

ASSEMBLYMAN LESNIAK: Do you know if they test for any of the chemicals voluntarily on their own?

MR. CZURLANIS: Well, just last week, the municipal building, which is supplied by well, their water was contaminated with some type of petroleum product. They discontinued using that.

As far as asbestos in our water, we have some figures from the EPA. In Little Egg Harbor Township, we just built a new regional high school, and to supply water to that, they put in asbestos cement pipe. I pleaded with them not to. Prior to the school opening, they had a luncheon there, and the luncheon was catered. At the luncheon, ten people were made sick. The next day, a woman sixty-four years old died. I was in touch with the EPA and asked that they come and analyze our water as far as asbestos content. I have a letter here from the EPA dated January 16, 1980, and the water sample taken at the well head - and this is asbestos concentration in millions of fibers per liter - was 4.0. A mile away at the Pinelands Regional High School, the custodial room the content was 270 million fibers per liter.

Now, I called this to the attention of the local MUA. As a matter of fact, each time I would bring up the problem of asbestos-cement pipes I was ruled out of order and they had the local police come and station themselves next to me, so I wouldn't speak out on it. But, the MUA itself has such standards as to the acceptability of their sewers and we are talking about the Ph factors in this regard. To read from their booklet, it says, "Resolutions as to waste discharge into sewers. Sewage delivered into the facilities of this authority shall not have a Ph index value lower than 5.5 or higher than 9." The next time the EPA took a sample at one of the kitchen taps, on 42 Revolutionary Road, in Little Egg Harbor Township, the Ph factor was 9.72. It was a higher content of Ph that is acceptable to the sewerage authority.

This is an article that appeared in the Asbury Park Press on November 14, 1979. It is written by a Dr. Arthur Johnson. He says this: "Mc Donald's Branch in Oyster Creek are extremely acid, and the Ph value of less than 4, which were rare before 1970, are quite common at present." Johnson reported a number of other small streams in the region have been sampled since 1975 and those also frequently have a Ph of 4 or less. Your household vinegar---

ASSEMBLYMAN LESNIAK: George, I am sorry. We are requiring in this proposed legislation that the acidity index be periodically monitored for each water purveyer, and as this bill will be amended for anyone who supplies 25 persons or more.

The legislation that we are proposing will require that the agresivity index be determined for each water purveyor serving 25 people or more. The problem is, once we get that number, we are not quite sure what we are going to do with it. Because, as you are aware, the EPA has not established any standards for asbestos contamination in water.

MR. CZURLANIS: Yes. The reason I come before this Committee and give testimony is to ask that asbestos is a known carcinogen.

ASSEMBLYMAN LESNIAK: Absolutely.

MR. CZURLANIS: Tests have been taken. The question has been raised as to--- They know when you inhale asbestos that it causes lung cancer, and the State has spent $75 million removing asbestos ceilings from schools. But, they said there was no proof that when you ingest asbestos that it would cause cancer.

The EPA has conducted a study. They took two newborn baboons from their mother before they---

ASSEMBLYMAN LESNIAK: Can I just ask one question? The asbestos content in the water, what was that?

MR. CZURLANIS: The asbestos was 200.70 at the time.

ASSEMBLYMAN LESNIAK: It is 270 million fibers per liter. The proposed standards that we would develop would be 30,000 fibers per liter - if corrective action would have to be taken if they could not meet that standard. That would no longer be defined as a potable water supply under the legislation we are proposing. I appreciate your bringing that particular matter to our attention, because I don't think it has been highlighted in the past. We will make note of that particular concern that you have in Little Egg Harbor.

MR. CZURLANIS: I would like to bring to the attention of the Committee, a booklet from the Environmental Protection Agency, "Fate of ingesting asbestos fibers in a newborn baboon."

ASSEMBLYMAN LESNIAK: Just the part you have in green there, we will allow you to read. We are running late and we have many other people who would like to testify.

MR. CZURLANIS: I will just touch on it. This report presents the results of a study to determine if ingested, asbestos fibers can penetrate the gastrointestinal tract, and be transported to other tissues of the body and understand how the body handles asbestos. It is important in determining the potential health hazard of asbestos in drinking water. I will read you the conclusion. The finding of this study strongly indicates that oral adminstrated asbestos fibers penetrate through the gut wall of the baboon and then migrate to the kidneys and other organs of the body.

ASSEMBLYMAN LESNIAK: George, I think this is well documented regarding the adverse health effects of asbestos. I think it is horrible that the EPA has not set a standard for toxicity or carcinogenicity of this asbestos in drinking water. That is what we are trying to do today. Again, I appreciate you highlighting it. We do have to move on.

MR. CZURLANIS: I would just like to make a few recommendations, if I may, please. Now, the bill that you mention at the beginning of the meeting was what? A-280? Now, I would ask that this bill be amended to include a moratorium on the installation of the asbestos cement pipes in the State of New Jersey.

ASSEMBLYMAN LESNIAK: I think we are going to deal with that problem in separate legislation. We have that proposed.

MR. CZURLANIS: Also, the Pinelands Region is the known clear water area, that a buffer zone be placed between the pinelands and any industrial zone, any area that may cause contamination, whether it be ---

ASSEMBLYMAN LESNIAK: There are many people in the State Legislature who would want us to weaken the pinelands protections that we already have in place, let alone allow us to strenghthen it.

MR. CZURLANIS: Perhaps, from what I read, your developers could develop residential areas. They are asking that the restrictions be lifted. But, in this turn, what I ask is that in industrial areas near the pinelands be restricted. There are those who may handle contaminants.

MR. CZURLANIS: They are the recommendations that have been put forth in legislative proposals dealt not only with residential areas, but also with the higher concept of the Pinelands Protection Act, and would affect residential, commercial and industrial. What I am trying to say is it would be very difficult to preclude that based on the current mood of the legislature. However, I wouldn't rule that out.

MR. CZURLANIS: Perhaps, Mr. Chairman, you may use an incident. In Little Egg Harbor Township, the pinelands is on the westward side of the Parkway,

and just on the eastern side of the Parkway, just a year or two ago, a mirror manufacturer came before the planning board, and then in the process of manufacturing mirrors, they used silver oxide, which is a contaminant. I tried to bring this to their attention, being the nearness of the pinelands, but they still passed this plan and allowed this mirror manufacturer, although he was small at this time, to move in, and they zone 1,000 acres for industrial just adjacent to the Parkway, which is the line between the pinelands.

ASSEMBLYMAN LESNIAK: I hope you will be available. We have been making that argument in the Legislature ever since the Pinelands Protection Act passed, that in order to protect the preservation area, you also have to preserve the preservation area. And, what happens in the protection area affects the preservation area. Just as you say, what happens outside either area is going to have an effect on it. I am certainly in total agreement with you on that. I must say that I am in the vast minority in the Legislature on that. But with testimony such as you are giving and by what we are doing here in bringing these hearings down here into south Jersey, we are hopefully bringing the message to the people. The pressures to weaken the pineland controls will not be as great as the people - the people, those who are living down there, not the developers; not the land speculators but the people who reside there, raise their families there and have to drink the water there every day and not just make profits there, but work and live there - rise up and are heard because I think they are in the vast majority.

Thank you very much for bringing this testimony to us.

MR. CZURLANIS: If I may, I would like one more second. This is from today's paper.

ASSEMBLYMAN LESNIAK: George, you are doing a great job but we have a lot of other people that we want to hear from.

MR. CZURLANIS: This is from this morning's paper, an article by the local MUA. Ten percent of the local residents have not paid their water bill; be it because of asbestos contamination or what, I don't know. But they are threatened now with a lien being put on their house and foreclosure. In turn, those who have wells are still forced to pay the MUA for the water which has asbestos, in this one particular incidence, in the amount 270 billion parts per liter.

ASSEMBLYMAN LESNIAK: We will do our best to move this legislation through as quickly as possible. Thank you.

MR. CZURLANIS: I thank you and the committee.

ASSEMBLYMAN LESNIAK: Gretchen Shaw from the Silverton Well Committee.

Excuse me, Gretchen. Dennis, does the granulated carbon filtrate out asbestos?

MR. SULICK: If the particle size is large enough that the granuled carbon can be used as a filter medium, yes. In most of the cases, the particles are very, very small. They can be removed by ultrafiltration.

G R E T C H E N S H A W: My name is Gretchen Shaw and I represent the United Silverton Alliance. I thank you for inviting me to attend this gathering today.

Our ordeal began the first week of January when a water sample was taken from a home on Mount Lane and was sent to a laboratory for a volatile scan. For the past several years, many of our residents have been complaining to the Board of Health about the foul taste and smell of the water.

On January 19th, the resident was notified that the results of the scan showed the presence of high levels of tetrachemicals in the water.

ASSEMBLYMAN LESNIAK: Gretchen, I am sorry. Where are you from?

MS. SHAW: Silverton.

ASSEMBLYMAN LESNIAK: Where is Silverton?

MS. SHAW: Right here in Toms River.

ASSEMBLYMAN LESNIAK: Oh, it is a section of Toms River.

MS. SHAW: Yes.

Several of us immediately made arrangements to have our water tested also. The Board of Health and the Mayor were notified that day. Also promptly contacted were the Environmental Protection Agency and the Department of Environmental Protection. We also met with an attorney.

Knowing the gravity of this alarming information, we decided the other well owners in Silverton must also be made aware of the fact that they also might have toxic chemicals in their water. We were able to have the use of our local fire house as a meeting place. We made posters and contacted as many of the residents as we could. The reason we were doing this ourselves was because the Board of Health was not promptly going around and notifying the residents. In fact, they had known quite some time about this.

Our local officials were also asked to attend and explain the possible results of this contamination. The Mayor, Mr. Vicarri; a member of the Board of Health; and the Town Counsel did attend our meeting. At this congregation, petitions were distributed. These petitions demanded the State become involved and that they test our water as quickly as possible. They also served to show that we were united in our concern.

We used the natural resources of our Silverton residents. People volunteered their skills, their knowledge, their contacts and their energy, so that we had a unified and cohesive force. We were faced with a disaster in which we were all involved and we united in our concern. We made daily phone calls to the Bureau of Potable Water, asking them to please understand the urgency of our situation and to take additional water samples from our area.

Finally, late in January, the Department of Environmental Protection did come to Silverton and took six water samples from what has been termed the blue area. On the following day, the DEP also took water samples from six homes outside of the contaminated section and samples were also taken by the county. The rest is history.

We have lived through the nightmare of water contamination. Medically, we do not as yet know what may be the final result of our exposure to these carcinogens. People in our area have experienced skin rashes, numbness in the extremities, headaches, nausea, miscarriages. Psychologically, we all must accept the fact that we have been directly contaminated with our most precious resource, water. Every mother must look at her child and wonder if some day he or she will suffer the consequences of drinking this poisoned substance. That fear can never be resolved. Even though we now have waterlines hooked up to our homes, we will always look at that natural commodity and wonder if it is really pure.

It is not uncommon to read the newspapers or see on TV municipalities throughout our State being faced with the fact that their drinking supplies are contaminated.

Corporations who produce these chemical wastes and have used New Jersey as their dumping ground have created environmental emergencies throughout our State. Lakes, rivers and underground reservoirs are being found to be highly toxic. This pollution was something that I always thought would happen to someone else. I have now become that someone. Unfortunately, residents in my community and in the

surrounding municipalities are also faced with this fact of life.

In Silverton, we still have many residents who are well owners and who have not been officially condemned by the State. The chemicals that we are no longer pumping are going to diffuse at an accelerated rate. The resident who lives just outside of the blue area must have the concern that the pollutants may have reached his water supply. In order to ensure that his water is free of contamination, monitoring must be done on a regular basis. The individual homeowner does not have the monetary resource to continually test his water.

These residents are also confronted with the realization that their property is no longer an asset.

The residents of this State who have lived the nightmare of not having potable water in their homes can attest to the anguish, worry, frustration and anger that they were not protected from the actuality of contamination.

The State's obligation should be remedial in those areas where pollutants have been found and preventive for areas where there might still be some safe, consumable water. Landfills must be kept safe from any further dumping of contaminated waste. Municipal water supplies must be tested frequently during the year. Monitoring is the only way of ensuring a New Jersey resident that he can depend on the safe consumption of this resource.

The State must improve immediately its policing or monitoring of the indiscriminate disposal of the toxic waste by private corporations. It is of paramount importance that the State and local governing powers make a total commitment, particularly the local governing powers, to protect its citizens from being poisoned from consuming its water. The cost for this type of program, although it may be staggering by present standards, will be slight in terms of financial spending in the future. This is a preventable cure and a basic right of all people to drink the water and breathe the air safely.

We, in Silverton, do not have evidence yet as to the direct source of our contamination. We do know that in the years past companies, such as Union Carbide and others, have used Dover Township as a vast unlimited dump site. The role of the State and federal agencies must be to improve their credibility towards citizens. The Department of Environmental Protection and the Environmental Protection Agency have usually reacted only after the fact. It is imperative that these agencies utilize their manpower and resources to deny dumping, clean up waste areas and prevent any further exposure to toxic waste, or New Jersey will no longer have the distinction of being the Garden State. Thank you.

ASSEMBLYMAN LESNIAK: Thank you. And you have really summed up what we have to do.

Marge Peary.

M A R G E P E A R Y: If your ears can still stand it, I have a few things I would like to say.

ASSEMBLYMAN LESNIAK: I presume you are going to summarize those 10 pages that you have.

MS. PEARY: Oh, no, these are just things I would like to present so you know I am not making this up.

For a little background information, I am a life-long resident of Ocean County. I was born and raised here. I live in the Pinelands Region in the Protection Area and I am not a victim of pollution as yet, but the potential is there.

ASSEMBLYMAN LESNIAK: That you know of.

MS. PEARY: That I know of. I live in close proximity to the Southern

Ocean Landfill, which has a record similar to other landfills throughout the State. It is a designated regional dump site by the county. And we have our problems with that.

ASSEMBLYMAN LESNIAK: Are you in favor of additional uncontrolled development in the Pinelands area?

MS. PEARY: No, I am not. I am not in favor of that. I supported the Pinelands Comprehensive Management Plan. But what I do have problems with is that on one hand our bureaucrats say, this is a pristine area, it should be preserved; and, on the other hand, when there is clearly written documentation presented to them showing that it is not a pristine area, that contamination is now going on and it has been going on, little or nothing is done.

When you made comments before to the effect that the more discretion given the DEP, you feel the less is going to get done --- That was something that you commented on earlier.

ASSEMBLYMAN LESNIAK: That is correct.

MS. PEARY: I would totally concur with that. Why we concur is because when we talk about pollution, one of the first things to do is recognize that the pollution is there.

In 1977, I have a document from the DEP from one DEP person to another - it is a memorandum - which updates the ten landfills at that time in the State that could accept liquid wastes.

ASSEMBLYMAN LESNIAK: What year was that?

MS. PEARY: 1977. Our landfill, being the Southern Ocean, is included. And, if you would refer to page 7, it clearly says - and this is frightening for us: "The volume of liquids disposed of at this site has visibly increased since the closing of Kimbuc." Now we all know what Kimbuc is. "Groundwater monitoring since September, 1975, discloses high levels of barium, chromium, selenium, silver and manganese, as well as high BOD's, COD's, phenols." This is DEP saying this in 1977.

We have DEP reports which clearly document the smell of chemicals. This was not a dump licensed to accept chemicals.

ASSEMBLYMAN LESNIAK: What is the name of this again?

MS. PEARY: Southern Ocean Landfill. And I have these documents, which I will be glad to send to your office.

ASSEMBLYMAN LESNIAK: We would like to have them.

MS. PEARY: A DEP inspector recommended sampling at that time in 1980 - to sample the trucks coming in and out of here and to sample the lagoons. There are millions of gallons of liquid waste sitting on top of the poorest sandy pine barrens' soil. Obviously it has no way to go but down. I have aerial photographs of these lagoons. The Ocean County Health Department has beautiful color photographs. When I say "lagoons," I am talking about lagoons big enough to sail a boat in, only it is septic waste and God knows what else.

I am frustrated by this business of "let's save our pines," and yet clear documentation of groundwater contamination is going on and nobody seems to give a damn.

ASSEMBLYMAN LESNIAK: We have to do both. You wouldn't want to dismantle one because the other is important.

MS. PEARY: No, I wouldn't. But I would like to see some constructive things going on in the way of water pollution control.

Now, as far as testing is concerned for these pollutants, I would be very reluctant because of past results to rely on State tests. As an example, I have

a test that was done by the landfill's private laboratory. All landfills are to be tested - their monitor wells are to be tested. The same day that this water was tested ---

ASSEMBLYMAN LESNIAK: May we have that?

MS. PEARY: Certainly, you can have all these things. (Continuing) --- the private lab came down and a man from the State, Richard Popiel - he was from the DEP, Solid Waste Administration. They took the same samples from the same wells and split them. For the first time, volatile organics were checked for. The private lab found volatiles, which that clearly indicates. The State Lab found nothing. Subsequently, there were, I would say, at least three other testing companies that tested the water, all coming up with volatile organics, different degrees, different types of volatiles, but still showing volatiles. I say to you, when three or four labs can all come up with volatile organics and the State comes up with zero, I question their methods and their way of testing.

ASSEMBLYMAN LESNIAK: We don't intend to have the State labs perform these testing requirements. They would be done by licensed laboratories.

MS. PEARY: Well, I would certainly want to steer away from that.

There is another test result, just to show you a follow-up, that volatiles were continued to be found.

Now, we talk about what the DEP's role should be in this. The DEP gets these water test results. This is a compilation of test results from 1975 to 1978. This is a memo from our Mr. Kaufman who testified before. As you look through these test results --- and these are not volatile organics; these are just the heavy metals and your standard parameters that they are required to test for. He also said that the tests have exceeded these standards and, in some cases, significantly. This is our County Health Officer talking about this. Certainly the DEP would have to look at them and see that they exceeded them through the years. Yet, what was done? Basically, little or nothing.

I would concur with Mr. Kaufman when he says, first you have to adopt standards. You have the list there for the priority pollutants which are not adopted. I would concur with his recommendations that the standards that he refers to that you have from the EPA --- that the standards that are imposed should be even stricter than what you have there from the EPA.

I would also say I think you recognize the importance of determining the rate of the groundwater flow. As one of the speakers before me pointed out, in North Jersey, it may flow inches a day. Down where I live, the Pinelands' Comprehensive Plan, after many studies that I know you are familiar with through Maryanne Thompson and people like that ---

ASSEMBLYMAN LESNIAK: She won't let me get away from it.

MS. PEARY: Good for her. In the plan, it is clearly shown that the rate of flow is 4 feet a day. So this flow rate really does play a part in how quickly contaminants can travel.

The nature of the soils play a part. In our area, we are particularly vulnerable. It is sandy. It is porous by nature. But I would say, instead of doing more studies and have such overlapping as occurs in government, you should utilize the resources that you have at hand. And I am referring to the Pinelands Comprehensive Management Plan, to use that to study that part of the State.

I wonder if all this isn't a duplication of efforts because I will present to you Sub-Chapter 6, dealing with groundwater quality standards

ASSEMBLYMAN LESNIAK: Sub-Chapter 6 of what?

MS. PEARY: New Jersey State Laws.

ASSEMBLYMAN LESNIAK: The Administrative Code.

MS. PEARY: That is all I got. I didn't get the title of it.

But in there, it clearly defines the areas of the State, the primary importance being placed on the central pine barrens area because of the problems there -going on up - and they divided it into classes. But, again, it specifically says, if an area is found to have contamination occurring and if they can determine the source, the source will be looked into. And under Chapter 6, Subsection H - and all this business - we will do something to clear it up. I say it is ridiculous; it is not happening.

ASSEMBLYMAN LESNIAK: The question is: If certain standards that are adopted are exceeded, then by definition that water supply is no longer potable. and, by definition, cannot be purveyed to people for drinking purposes. It is as simple as that. That appears to be the only way that we are going to get any action taken on that. It is going to be very controversial and we may hear all kinds of screams from the department and from other bureaucracies. But I think it is an idea the time for which is long overdue and the situation is dangerous and severe enough that we will have to take some action similar to that.

MS. PEARY: Dr. Patel testified earlier that he didn't know the effect of toxics on human beings. They are still studying it, checking into it and what have you.

ASSEMBLYMAN LESNIAK: I don't think he quite said that. He just said that much of the data is insufficient to draw specific conclusions. He was talking about here in the State of New Jersey, that the data bank that they have to draw conclusions from is not sufficient.

MS. PEARY: This is only a suggestion. I would like you to perhaps consider using or questioning out-of-state professionals. The person that comes to mind is Dr. Raymond Harbison. I got his name from the Asbury Park Press. They did an excellent series on the problems associated with Price's Pit. And Dr. Harbison testified on behalf of EPA on the effects of Price's Pit to the humans living in that area. He is from Vanderbilt University, Nashville, Tennessee. He is head of the Toxic Substances Laboratory.

Some states may be ahead of our State in determining what effects these things are having on people.

Why I am very concerned about this is that recently in Southern Ocean County, it was determined that chlordane is present in the drinking water at the Lacey Township Middle School. Now, Jorge Rod is an Assemblyman. He is a new Assemblyman. That would be his district. Maybe you would know him.

After retesting the water and conferring with Dr. Patel, it was determined that the levels of chlordane still exist, supposedly they are lower than the first round of testing, but they are safe. So, in effect, these children are drinking water with chlordane in it.

ASSEMBLYMAN LESNIAK: Do you know what those levels were?

MS. PEARY: I thought the first levels were 0.7, which is still above the EPA standards. I am very concerned about this type of acceptance. Since when is chlordane okay? Just as we are told the amount of benzene that has been found in monitoring wells outside of the dump are trace amounts and,don't worry. Since when is benzene okay? This Dr. Harbison says it is not okay. Benzene is benzene. It is a carcinogen. I don't like this acceptability on the part of our health officials and our public officials. I fear as the pollution problems become more prevalent - we are becoming aware of them at a daily rate - the acceptability of these pollutants

will increase and, instead of lowering the standards, there may be a tendency to raise them because it is so alarming and they don't know how to handle it. So I would urge you, no matter how much pressure would be put upon you with your bill, not to consider raising standards but to hold the line or even make them more stringent.

ASSEMBLYMAN LESNIAK: You don't have to worry about the pressures on me, but you may have to worry about the pressures on my other colleagues that I have to depend upon to get this bill through. I would hope that you will lobby on behalf of this legislation with other members of the Legislature.

But I think over the last year or so and because of hearings like this that we are having that the legislators, themselves, have been coming around, if you will, to our side of the issue. When I originally got my first in a series of bills passed dealing with the spill fund amendments that allowed that fund to be used for clean-up of chemical dumps, there was a severe fight and there were many legislators who got up on the floor and said what a bad bill it was. Now they are clamoring for that money to clean up some sites in their districts. So there has been a heightened awareness. And that is one of the purposes of these hearings, to educate not only ourselves but the entire Legislature who will receive copies of this hearing and others. Believe it or not, many of them do read them and will take everything that is said here into consideration. Because of the record we are developing, we will have a much better chance of success. I appreciate your adding to the record in that regard.

MS. PEARY: There was talk before with one of the representative, I think from the chemical industry. He was saying it is very hard to sample the water because you either make a monitoring well and sample from that or take from somebody's home, but it doesn't give you the overall picture.

ASSEMBLYMAN LESNIAK: What he was saying was: What are you trying to get from the sampling?

MS. PEARY: Okay. But I do know --- I am not an authority; I don't have an extensive background in any of this. I just have a little bit of common sense or maybe more common sense than the average person. I do know that there are other methods that possibly could be used, such as resistivity, where they run electrical impulses into the ground. I understand it can give you a picture of vertical and horizontal pollution to give you an idea of where the pollution is going, the flow of it.

ASSEMBLYMAN LESNIAK: That is used to track a plume. I don't think it gives you what is there and in what concentration.

MS. PEARY: They say in some cases it can tell you what is there, but not, of course, with everything.

ASSEMBLYMAN LESNIAK: That is used, especially in litigations.

MS. PEARY: Right. So in terms of the idea that we have to keep drilling wells, maybe not, maybe these things can be used as well to determine the extent of contamination.

I would think that when a person is selling a home, a test for priority pollutants should be required. People think just because they pass a PH and a bacteria test, they have potable water. That is not so, as Mr. McCarthy referred to the woman in Jackson.

ASSEMBLYMAN LESNIAK: We are working on that right now.

MS. PEARY: And I do feel that the gas stations ---

ASSEMBLYMAN LESNIAK: We are working on that too.

MS. PEARY: --- we need to go through that.

ASSEMBLYMAN LESNIAK: We need your help on that one too.

MS. PEARY: I think cost basically should be the bottom line. Because of the enormity of the problem, we will all have to bear the costs, which may be unjust since in many cases we were not the polluters, but we have become the affected people. In reality, that's the way it goes. And, as the man in the commercial says, you can pay me now or you can pay me later. I would prefer to pay right now and protect because I think the DEP protection is not what is happening there, solution solving is, once the problem is there. We are looking for protection and I see that your bill is a definite means of striving for protection and I would concur.

ASSEMBLYMAN LESNIAK: Thank you. Just some other information: we passed last year the Landfill Closure and Contingency Fund Act, which I believe will give us approximately $9 million additional a year to deal with contamination as a cleanup of pollution from landfills. That is another source of revenue. But I might add the bill was passed over the screams of many mayors who were saying, garbage rates are going to go up - oh, my god. We are going to have to increases the taxes of our people. I am glad to hear what you have been saying because I have been saying that the people want protection, they want their health protected and, if they have to, they are willing to pay for it. But just don't cloud the issue or pull any wool over their eyes because that is when they really get angry, and they have a right to be, against public officials.

MS. PEARY: Oddly enough, in Waretown that bill is almost like adding insult to injury because the town originally owned the dump. They sold the dump but hold the mortgage to the dump. In the mortage agreement, it says that the township will have free dumping rights for a period of 25 years, which they have enjoyed up until now. Now, they have to pay to dump there through this tax.

ASSEMBLYMAN LESNIAK: I think there is a bill in this Committee that provides that if the municipality owns the dump and if it is the sole source of garbage for that dump , they will be exempt from that portion of the tax, because the municipality would be liable for cleanup in any event. I don't know if that would apply because you say they sold it and they are just the mortgagor.

MS. PEARY: Right. But if the landfill owner bails out, then the problems of cleaning it up revert back to the township, I would imagine.

I thank you very much for allowing me to speak and for your coming down here to us in Ocean County.

ASSEMBLYMAN LESNIAK: Neil Goldfein has arrived. Come on up. Neil, in what capacity do you come before us?

N E I L G O L D F E I N: I am the Executive Director of the Atlantic City Municipal Utilities Authority. The Authority's primary responsibility is to deliver water to Atlantic City. We own and operate a municipal Water Department. Our treatment facility, our well field and our surface water supplies are all located in Egg Harbor Township in Pleasantville City in Atlantic County, New Jersey.

ASSEMBLYMAN LESNIAK: Do you have your carbon filtration system in place now?

MR. GOLDFEIN: Well, it is a sort of carbon filtration system. The way the plant was built, it was built as a filtration plant. It had multi-media filters, anthracite, sand and gravel. We took the anthracite and most of the sand out of the filters and replaced them with granular-activated carbon. This is really a patchwork type of approach. It was the least expensive and quickest thing that the Authority could do last August. We felt, as a matter of protection to the industry in Atlantic City and the people of Atlantic City, it was necessary to have that extra measure of protection.

It, by no stretch of the imagination, is a hazardous waste treatment technique.

It is a technique whereby if low quantities of contamination do come to the treatment plant, they will be removed and we will gain some time before the carbon is used up.

ASSEMBLYMAN LESNIAK: How often do you test for organic hydrocarbons?

MR. GOLDFEIN: Well, there is a little bit of difference in terminology. The primary problem of leachate from Price's Landfill is that of volatile organics.

ASSEMBLYMAN LESNIAK: I guess organic hydrocarbons is a redundancy.

MR. GOLDFEIN: There are one hundred and some priority pollutants that EPA has named and there are many different categories - hydrocarbons is one and volatile organics is another category. That appears to be our primary problem.

ASSEMBLYMAN LESNIAK: How often do you test for that?

MR. GOLDFEIN: We test every operating well once a month, but nothing has shown up in our operating wells.

ASSEMBLYMAN LESNIAK: But you know something is out there.

MR. GOLDFEIN: We know it is out there. The status right now is that Price's Landfill is leaching through the groundwater. It is very close to Well Number 13. It is in the hundred-foot sand of the Cohansey Aquifer. Basically, what we have done is shut off all 100-foot wells. A 100-foot well is a fairly expensive resource that we have lost the use of.

What I really wanted to come here today and talk about is that we are an Authority that has had to bear the brunt of indiscriminate dumping, hazardous waste dumping, and really what I consider the failure of the industry, the state government and the federal government to take any appropriate action to stop the problem.

ASSEMBLYMAN LESNIAK: As I said four years ago, it couldn't happen without both local, state, federal and industry neglect and incompetence. I was talking about chemical control in Elizabeth, but it certainly applies to Price's Pit and many other places. I also used another word, but I won't say that here today. Go ahead.

MR. GOLDFEIN: Some of my fears are: Could it happen again today? Could we be developing another Price's Pit in 1982? Really, if you take a look at Price's Landfill, it was a landfill in South Jersey and it was a totally inappropriate location for any liquid waste to be disposed of.

ASSEMBLYMAN LESNIAK: We don't allow landfilling of any hazardous waste now.

MR. GOLDFEIN: On a regulated scale.

ASSEMBLYMAN LESNIAK: Right.

MR. GOLDFEIN: But, of course, according to the records presented in court, the State didn't necessarily allow any hazardous waste dumping in Price's Landfill. They never received a permit. They never had approval from the State. Yet the dumping continued and the State was aware of it.

ASSEMBLYMAN LESNIAK: The Solid Waste Management Act gives the same authority to the local health inspector as it does to DEP inspectors. So, it was not only the State, but it was the local official too who wasn't doing his or her job.

MR. GOLDFEIN: The point I would like to make is that the people of Atlantic City are victims. They are really innocent victims. They don't live out in Pleasantville in Egg Harbor Township. They didn't have that responsibility.

ASSEMBLYMAN LESNIAK: Although it doesn't apply here in the State of New Jersey because our regulations prohibit it, how did you feel when EPA said it is okay to put liquid hazardous waste in landfills? They have rescinded that since.

MR. GOLDFEIN: You mean the recent action?

ASSEMBLYMAN LESNIAK: Right.

MR. GOLDFEIN: Since I have been down in Atlantic City and faced with this problem, just trying to live with it for the past year and a half has changed my

attitude. I have a very harsh attitude.

ASSEMBLYMAN LESNIAK: Did it shock your conscience as it did mine?

MR. GOLDFEIN: Only slightly.

ASSEMBLYMAN LESNIAK: You expected it.

MR. GOLDFEIN: I worked for the Department of Environmental Protection for ten years, for its first decade.

ASSEMBLYMAN LESNIAK: That is supposed to be environmental protection.

MR. GOLDFEIN: Yes. My consciousness had previously been raised and I like to look back on my record there as having been one of environmental protection and in being conscious of the environment. So I think I have just been hardened a little bit more toward dumpers and so forth. I think it is a recognized problem. But I feel the problem of helping victims is one that isn't clear. If you look at the tale of woe, so to speak, of what has happened to the Atlantic City MUA, here we have a major industry, a major financial factor in New Jersey's economic picture. And the Atlantic City area is pouring millions into the State coffers not just from the casino tax but from State income tax from renewed jobs, and related taxes. What help have we gotten? The Authority had to go out last year and made a commitment of almost a million dollars to resolve the problem of Price's Landfill. This is a million dollars spent on items that clearly are eligible under the super fund. They are clearly eligible under other programs.

ASSEMBLYMAN LESNIAK: We have appropriated the money to match the super-fund dollars.

MR. GOLDFEIN: That is correct.

ASSEMBLYMAN LESNIAK: That was my legislation, remember.

MR. GOLDFEIN: Yes.

ASSEMBLYMAN LESNIAK: We are waiting for the Reagan administration to get on with it.

MR. GOLDFEIN: Well, we are waiting for the Reagan administration to get on with it too. One of my questions today is: What happens if they fail to get on with it? Are we going to keep waiting? That is essentially what happened in 1980 or 1981.

ASSEMBLYMAN LESNIAK: There is no procedure for recalling the President. That means we can't do anything like that.

MR. GOLDFEIN: And there is no procedure for recalling Price's Landfill.

ASSEMBLYMAN LESNIAK: That's right.

MR. GOLDFEIN: As I said, we committed almost a million dollars to the problem. That may seem like small dollars in Atlantic City terms. But you have to remember that the Water Department is paid for by the people that live there, the residents.

ASSEMBLYMAN LESNIAK: And not all the people are casino owners.

MR. GOLDFEIN: That is correct. As a matter of fact, a lot of people because of the transition have been hurt by the casinos. While their net worth may have increased, the only way they can realize that net worth is if they sell their homes and leave town, which is a terrible thing to happen. This is, I think, symtomatic of the transition that I really don't want to talk about. I would like to hit Price's Landfill.

ASSEMBLYMAN LESNIAK: Neil, I wish I had the answers for you. As I said, in terms of the cleanup, we did appropriate the money. The super fund in and of itself is vastly insufficient to even scratch the surface of the entire cleanup problem. The delay in what has been termed the most dangerous health hazard in the United States I believe is totally unconscionable. I hope that we will be able to get Ann Gorsuch

down. We intend to have one more hearing, probably in Trenton. But maybe we could even come down to Atlantic County. I would love to come down if we could get the EPA Administrator down to answer our questions on that. We are going to have in Washington, D. C., a panel discussion of the National State Conference of Legislators - and I am on the committee - at which Ann Gorsuch will be present. We are going to present her with that particular problem as to why they are not doing more in that regard. We will certainly report back to you. We will continue to pursue it. I just don't have any more answers on the federal level for you on that.

MR. GOLDFEIN: I don't know that I expected any real answers today. I thought, given that you are having hearings, that it was important Atlantic City sort of lay out what has happened to the city, why the problem hasn't been solved, how inaction by both the state and federal governments has caused this problem to drag on, and what the future looks like. I am looking at it from a victim's point of view. For the victim, there doesn't appear to be any help no matter how bad off the victim is. There are about 30 homes that are near the landfill, the residents of which drank water that had been contaminated by the landfill from anywhere between 5 to 10 years. The landfill essentially was closed to liquid dumping in 1972. Yet it was only in December of 1981 that they received a potable water system.

Now you are talking about people's lives and the quality of their lives; the potable water system all totaled cost less than $400 thousand. That is not a large amount of dollars when you are talking about all of the ensuing problems that these people might have had and how their lives looked for the last couple of years. When you turn on your tap, to have it coming out smelling like turpentine is something rather frightening.

ASSEMBLYMAN LESNIAK: Or having it come out smelling like water and containing turpentine.

MR. GOLDFEIN: That is true. These people were past that point.

ASSEMBLYMAN LESNIAK: Or worse.

MR. GOLDFEIN: Yes, or worse.

ASSEMBLYMAN LESNIAK: Thank you very much. I hope we will be hearing from you with better news sometime in the future.

MR. GOLDFEIN: I hope so.

ASSEMBLYMAN LESNIAK: Thank you.

Do we have a representative from the New Jersey Conservation Foundation? (No response.) How about from the New Jersey Environmental Lobby? (No response.)

Is Lewis Taylor here? Do you have a few words of wisdom for us today?

L E W I S T A Y L O R: I think so.

ASSEMBLYMAN LESNIAK: Where are you from, Lewis?

MR. TAYLOR: I am from Waretown.

ASSEMBLYMAN LESNIAK: I think I heard that name before just recently.

MR. TAYLOR: Down near the famous Ocean County Landfill.

ASSEMBLYMAN LESNIAK: You are the ones who are getting hit twice.

MR. TAYLOR: Yes. You questioned Mrs. Peary about Lacey Township and the chlordane. It was 1.7 parts per million at the Middle School and 7 parts per million at the Municipal Building. That is what they first came up with.

My question is: Why in 1978 when they knew something was leaking from the landfill, nothing has been done up to date?

ASSEMBLYMAN LESNIAK: That's a good question.

MR. TAYLOR: The tests recently show it is progressively greater now.

ASSEMBLYMAN LESNIAK: What's the name of the landfill?

MR. TAYLOR: Southern Ocean County Landfill. To date, I have heard of no corrective measures. The only thing I have heard is "manageable." But nobody is managing the situation. The tests in our local township are kept semi-secret. We have to sort of pry the results from them. In some cases, we found out that the county doesn't even have some of these test results.

Most of the material I have here has been talked about before. But I want to remark on what Assemblyman Doyle said, that the wells should be tested. Well, that is all right. But what should be tested is the monitoring wells to stop the source at the landfills or underground tanks, such as gasoline stations, which you mentioned before.

ASSEMBLYMAN LESNIAK: We will be dealing with the underground tank situation. I would presume that DEP is conducting testing on the monitoring wells.

MR. TAYLOR: In the way of pesticides and termite control, there is nothing in the county that controls this. It is controlled by the Pesticide Division of Environmental Protection. I think they have six or seven inspectors which will come out on call. Otherwise, there is a free use of pesticides in a termite division in Ocean County. They are not monitored as to use and to dumping. They do have to maintain a two-year record. That is all it is.

ASSEMBLYMAN LESNIAK: They are restricted in what they can use and in what quantities and what concentrations.

MR. TAYLOR: Yes, they are restricted. But they still do it in cases I have seen ---

ASSEMBLYMAN LESNIAK: I am sure they do.

MR. TAYLOR: --- where the termite company or the inspectors, if they want to do a job, they inspect it and then there are termites there. That is my concern. As far as the other things I have here, you have heard them before.

ASSEMBLYMAN LESNIAK: It's a great world we live in.

MR. TAYLOR: Yes, it is. Thank you very much for the opportunity to speak.

ASSEMBLYMAN LESNIAK: Thank you.

Walter Hol is next. We will learn something about testing. Walter, are you still around? He went all the way back to his lab and got all kinds of information for us and I made him wait the entire afternoon. Sorry, Walter. You guys are going to make out all right with this bill I am going to pass. So I want you to listen to the people first. Tell us something about testing.

W A L T E R H O L M: Unfortunately, I was just made aware of this conference by the newspaper.

ASSEMBLYMAN LESNIAK: If you want to add to the record any prepared testimony, you are certainly welcome to submit it to the Committee.

My name is Walter Holm, representing Environmental Testing Laboratories.

I guess one of the main concerns was the economic consideration which, of course, several laboratories are faced with when a domestic client calls up and you give them what they feel is an astronomical number to test their water.

ASSEMBLYMAN LESNIAK: Let me ask you one question. If I am a water purveyor and I supply a whole bunch of people and I have to have my water tested for the 129 identified sources of contamination by EPA, what is that going to cost me approximately?

MR. HOLM: Generally, on a one sample basis - there is GC and GC mass spec type tests. The mass spec identifies by ion; and the GC, what they call a flame ionization detector or electron capture detector, is a less sophisticated machine, less costly machine, and the test would cost less on a GC system. GC mass spec is more expensive. It is more complicated. But, generally, units like a Finnegan O unit, which is a particular type of GC mass spec made by Finnegan Mat Corporation generally have a

national standards' storage of about 31,331 compounds, which is capable of scanning approximately 50 different parameters for these different EPA target compounds. And you can do 50 or so of these samples for about 50 different compounds in a period of an 8-hour shift.

ASSEMBLYMAN LESNIAK: You would be fantastic on a witness stand. Can I get a figure?

MR. HOLM: Yes. The figure on a large volume basis - we are prepared and we have capabilities with approximately 26 GC mass specs on line, of which 18 are on line 24 hours a day - and you would be looking at a cost for high volume sampling of approximately $500 a sample.

ASSEMBLYMAN LESNIAK: Okay. So when we are talking about water purveyors and we are talking about serving a fair amount of people, the cost is not a real factor. So when I hear this is going to cost so much money, I am concerned as to what the real motive of people who are putting that forward is in terms of limiting our testing requirements.

MR. HOLM: Cost is a factor because of a recent incident that occurred. As a matter of fact, the last girl who testified here ---

ASSEMBLYMAN LESNIAK: Of course, it is a factor for the individual homeowner, but not for the water company that is serving a thousand people or more, or even twenty-five people or more. Twenty-five into five hundred is --- I don't know --- $20. In order to protect the health of my family, I certainly would be willing to pay that.

MR. HOLM: I suspect I would also.

The other thing that I think is quite important is that --- the expensive cost of monitoring wells was mentioned. Well, that is something almost entirely a science by itself. It is a costly procedure. There are many drilling contractors in the State of New Jersey. I believe there are 1157 different drilling contractors in New Jersey that are licensed as both journeymen and master well drillers. And when you start to drill around these landfills that have toxic organic wastes and problems where they just happen to have what they refer to as a perched aquifer whereby the aquifer is supported maybe by a clay lens and retains water up above so that the lower aquifer tends to retard water infiltrating in an aquifer - in a specific area, it retards the vertical leakage --- when the drilling firms start poking holes through this lenticular clay that exists in an aquifer ---

ASSEMBLYMAN LESNIAK: It is a problem.

MR. HOLM: Yes, it is a big problem. So special drilling methods have to be accomplished from a scientific standpoint: double-cased observation wells, whereby a Haliburton method is used to cement the well from the bottom to the top before piercing the lenticular form of clay before going into maybe the lower testing depth where they are going to monitor the public water supply. What occurs then when you are drilling with a rotary process and you penetrate this clay is the drilling muds from the upper formation become contaminated with the different EPA target compounds and it opens up a greater possibility when this screen is set to monitor the lower aquifer, which was once not polluted and now is, of leaving a conduit straight into the formation for further contamination of the lower aquifer which may not have occurred and had remained perched for a good number of years, to what they call spillage occurs on that lenticular piece of clay lens.

ASSEMBLYMAN LESNIAK: Instead of monitoring they actually increase the incidence or possibility of ---

MR. HOLM: If not done correctly and proper design is not carefully monitored by the county health departments of the State, I have seen some atrocious drilling

operations go on outside of these landfills where all they know is that they want the cheapest and the bottom-line priced hole in the ground. The end result is that they get just what they pay for. Generally, it is a plastic-slotted screen sawed together with hacksaw slots in it instead of a properly designed stainless steel screen with something you can develop the well with and get a representative good yield and a good test.

ASSEMBLYMAN LESNIAK: We are working now on developing a programmatic model for the entire problem of cleanup of any particular site. That is an area where we will be seeking to develop, as I said, a model which would be adopted, I would presume, by regulation so that DEP would have guidelines in terms of what type of procedure they would use in any particular case.

MR. HOLM: We would be happy to share in the design. As a matter of fact, Dr. John Slaughter who works for us did work for DEP and we would be happy to consult with you on that matter.

ASSEMBLYMAN LESNIAK: I would like you to participate in that. My legislative aide, John Holtz, is somewhere here. Before you leave, I would like him to take your name and we can get in touch with you. I would appreciate that help.

MR. HOLM: The other thing that I think is important to A 280 is that the landfill monitoring requirements of a municipality, itself, around the landfill -- the State mandate for testing doesn't even include the priority pollutant list. Again, you get in a situation where the township, municipality or the company or property owner who owns these landfills, specifically relating to municipalities, is caught in a situation such as recently occurred in Lacey Township where we discovered chlordane in some wells, both where the public employees were drinking and a low concentration at the school site. As a result, the township committee was in touch with Mr. Popiel of the State. Mr. Popiel said, we don't have a specific requirement for testing organics. So the township committee gracefully turned around and said, since we don't have it and we didn't need it, we are not paying you for it. That was very kind of them. They split a sample, I believe, with Henderson Labs who testified here earlier today and they also found a concentration of chlordane that exists, whereas the State, again, found nothing. I don't know the particular operation of the State Health labs, but generally you end up splitting with Rutgers or some subsidiary company they may hire as a result.

I think the State Laboratory needs more sophisticated devices instead of running over to EPA or subcontracting with Rutgers, which creates this terrific turnaround problem that you have with the State. In other words, a contract lab will come in, do a job and hand in the results. Then DEP will come in and hand in the results eight weeks to two months later. Mass confusion is involved. Here they have one low concentration; you have another. I question the constant chain of command through DEP. When the sample is picked up on the site. It goes to the Board of Health. It waits to be tested. Another sample moves to Rutgers. It is very important that a chain of custody be established to cover that.

I think it is important that the bill include - if not this particular bill, another bill - the monitoring of landfill wells. So, at least, if we are going to test the potable water wells, that we cut the problem off where it exists - and that is at the landfill. Let's look at the landfill first before we start going to the far outreaches. That is important also. But I think if the organic testing of a lot of these landfills were done much sooner, things like Jackson and Legler possibly - and I say only possibly - could have been avoided or, at least, at a significantly reduced cost as a result.

ASSEMBLYMAN LESNIAK: Thank you for that suggestion.

MR. MILLER: May I ask you one question? You are probably not familiar with the bill if you just heard about the hearing. Would you look over it?

MR. HOLM: 280?

MR. MILLER: Yes.

MR. HOLM. I have a copy and I was just briefly scanning over it.

MR. MILLER: You certainly are not ready to do it today, I am sure. We would appreciate it if you could tell us if you think the periods between tests are sufficient, whether they are too short or too long, or what have you.

MR. HOLM: I think Anna Winkler of Henderson Laboratories indicated --- or some sort of discussion ensued that it can become very costly for a small purveyor of 25 units to start this monitoring thing. I think it would be preferable to have quarterly testing.

MR. MILLER: For all of these?

MR. HOLM: Yes. Then, after a period of a year, if nothing shows up or high concentrations in certain base neutrals or acid extractables or pesticides or herbicides do show above the 10 PPB range, which is the sensitivity of some of the testing equipment of most mass specs like Finnegan, that you target that compound and monitor it and reduce the cost to the client by that number, instead of doing the full scan.

ASSEMBLYMAN LESNIAK: In other words, there would be a quarterly testing requirement for the first year and, based on those test results ---

MR. HOLM: If there are any high compounds - and that goes for municipalities too or the landfill wells --- if target compounds come up high on the scan, on the ion mass ion structure on the mass spectrometer, then you zoom in on those things, concentrate on them, and find out what family of ions exists and more closely quantify what you have.

MR. MARK SMITH: Every year after that, do you do the full range?

MR. HOLM: I don't know where you would want to move from that point on, whether it be a yearly thing ---

ASSEMBLYMAN LESNIAK: Or semi-annually, which is in the bill.

MR. HOLM: Yes.

ASSEMBLYMAN LESNIAK: Anything else?

MR. HOLM: That is about the only thing I had to add. Thank you.

ASSEMBLYMAN LESNIAK: Does anyone else wish to say something?

MR. DE LORME: I was on the speaker's list.

ASSEMBLYMAN LESNIAK: I am sorry. You are right. Charles DeLorme, a representative of the LEAK-X. I believe I have heard from you. Why do you guys pop up as the last people to testify at every hearing we have had.

MR. DE LORME: I have been here since 10:30.

ASSEMBLYMAN LESNIAK: I am sorry. You have one of these systems you put in the ground and, if there is any contamination, it rings a bell or flashes a light or plays Dixie.

C H A R L E S D E L O R M E: That is basically the technology, but it goes a lot further than that.

You have heard testimony on the technology and that is not why I am here. I am not here to sell equipment. First of all, we are one company out of an industry of about 15 that make this type of equipment for testing.

My name is Charles DeLorme. The company affiliation happens to be LEAK-X Corporation. But I am not here just for that.

We, originally, read like everyone else about all the horror stories that took place in Jersey in the press. We contacted the Governor's office, the then Governor Byrne, to get some direction as to letting the proper officials know the type of equipment that existed. The first letter to the Governor was July 7th, of 1980. I would just like to briefly summarize some of the correspondence that went back and forth.

The first letter, as I said, was just to let him know what existed and the fact that the technology that was out there was quite reasonable and could be afforded and, if the burden came on industry, it could be afforded by even me, the smallest of industry. The Governor answered through a fellow by the name of Jack Stanton, who is Director of the Division of Environmental Quality for the New Jersey State Department of Environmental Protection. Mr. Stanton advised us that a Dr. Ralph Pasceri, Bureau Chief of the Hazardous Waste, would be in touch with us and would set up an appointment so that we could discuss it. Dr. Pasceri never contacted us. We eventually contacted him after a couple of phone calls. We got in touch with him. He was quite resistant to any type of a meeting. But he sort of did give in on it and we did set something up in November of that year.

ASSEMBLYMAN LESNIAK: What year was that?

MR. DE LORME: That was 1980. He stated a Bob Reed who was his Assistant Chief would be there, a Tom Sherman from Engineering, and there would be some people there from Spill Control, a Larry Muzyka from Water Resources would be there. The meeting, as I say, was set up for November 12, 1980.

Three of us went down to Trenton. None of the people, including Dr. Pasceri, attended. There were three gentlemen there who were quite junior in the department and quite young. When we finished telling them about the technology that was available, there wasn't a single question asked - nothing - as to what they felt this type of equipment could do for the problems within the State.

I then wrote a letter to the Governor, explaining to him again the fact that I thought it really required more in-depth evaluation than it had received. Again, he asked Dr. Pasceri to get back to us. Dr. Pasceri in his letter mentioned the fact of the four people that were there, who weren't there, and he mentioned the fact that it wasn't made clear to them what substances we could monitor at landfills, etc. And he mentioned the fact that we were just developing this technology and he would like to know about it when it finally came about.

It was obvious from all of that that he hadn't been at the meeting. So I answered him again, telling him that he had a list, it was in the literature, and we included additional copies of the literature to let him know what compounds could be monitored. I also brought out to him that we weren't attempting to develop it, that it had been developed, it was in production, it was in use, and he could have any of this ---

ASSEMBLYMAN LESNIAK: Do you have a card?

MR. LE LORME: Yes.

ASSEMBLYMAN LESNIAK: Would you be willing to join with us? As I mentioned to Walter, we are working on a model for containment and for cleanup. We are working on it in conjunction with the chemical industry and Rutgers University. We would like some input regarding this technique and would hope you would be able to work with us on it? Would you be willing to do that?

MR. LE LORME: Definitely.

ASSEMBLYMAN LESNIAK: We will be calling on you.

MR. LE LORME: We would be pleased to help.

ASSEMBLYMAN LESNIAK: As I said, I have heard about this system at the last two hearings

that we have had. I know you have been very patient waiting here all day and listening to testimony all day. If you could just briefly outline for the people here what you are talking about and what the capabilities of the system are, it would be helpful. I appreciate your frustration in not getting any response in the past. But we have problems that we have to solve now and we can't dwell too long on the past. I don't want to give you too much of a time constraint. But it has been a long day. And we will be working with you in the future on this. But just briefly outline what you are all about.

MR. LE LORME: Okay. One last point I want to point out about the correspondence was that equipment had been offered to the State free for testing. We had offered to do on-site inspections at landfill areas free of charge for the State. The last letter to the Governor basically stated that, perhaps, our equipment was not the right equipment - it definitely isn't the right equipment for every application - but find out where it is and where it isn't, put that aside and get out and find somebody else who does have the proper equipment for a particlar problem.

Basically, ours, as with many other people's, is an electronic, constant monitoring, leak detection equipment. It works rather than at testing what is in the water table or the type of contamination that is getting into the soil, to monitor the fact that a leak has taken place. Its initial application has been in the petroleum industry primarily for underground storage tanks. This is where it got started. As a matter of fact, it was people in New York State who approached us and said, "If it works on petroleum, will it work on other things?" The same technology will. It is just a matter of different sensors to make the equipment sensitive to whatever it is you want to detect that is leaking. It does not measure it. It doesn't tell you how many parts per million or anything of that type. It tells you that you have a contamination.

Briefly, the technology was that landfill areas already have monitoring wells, these types of sensors can be put into the monitoring wells, and you will know immediately upon a contaminant coming in contact with the sensors.

ASSEMBLYMAN LESNIAK: So you wouldn't have to continually test.

MR. LE LORME: You wouldn't have to continually test. There could be a trade-off in the time frame. You could be testing every quarter and this equipment would be telling you in between whether or not you had a problem.

ASSEMBLYMAN LESNIAK: The testing would give you more sophisticated results.

MR. LE LORME: Yes. It could be used to supplement and to make the testing a little bit more cost effective from the point of view of reasonable budgets that you would have to operate with.

The technology can be used with pipelines, it can be used with storage tanks, and it can be used with basically any --- and a landfill area is nothing more than a storage tank for toxic waste. So when you want to know that the material you are monitoring is no longer in the vessel that you had it in and that it has seeped out into an area where you don't want it, that basically is the reason for it. It is electronic. It is self-operating around the clock. It doesn't involve any inventory controls or any human input to it.

As I said, I believe there are as many as 15 manufacturers in the marketplace today. This will not only detect liquid; it will also detect hazardous gasses.

ASSEMBLYMAN LESNIAK: What sets off the sensor - electricity?

MR. LE LORME: Well, you have a combination of sensors; there are infra-red and ultraviolet sensors. It depends on how sensitive you have to be and what you want to detect. In the hazardous gas area, of course, if it goes indoors, it is

sewage treatment plants or if it goes into chemical processing plants, then they go into explosion-proof housings and all of that.

ASSEMBLYMAN LESNIAK: Thank you very much.

MR. HOLN: Could I have a copy of the bill?

ASSEMBLYMAN LESNIAK: The bill is going to be modified to a great extent.

MR. HOLN: I think Senator Russo sponsored a bill, or did last year, in reference to those monitoring devices at gas stations. There was a requirement set forth. I don't know whether it has been passed or not.

ASSEMBLYMAN LESNIAK: It hasn't been passed. I will guarantee that. These guys would know about that.

MR. LE LORME: It has been passed in many communities. There are many communities where electronic monitoring at gas stations is mandatory.

ASSEMBLYMAN LESNIAK: Not in the State of New Jersey though.

MR. LE LORME: No. There are many communities in New York. New York City has a similar law in that regard. Rochester has legislation pending. The whole theory behind it, where it would fit into your bill and from a recommendation from the legislation as I understand the hearing today, is that it would be really in addition to the type of testing that you want to require, to prevent the contamination, to get it at its source.

ASSEMBLYMAN LESNIAK: You haven't submitted to us copies of legislation?

MR. LE LORME: Yes, at the last hearing in Rockaway.

ASSEMBLYMAN LESNIAK: We haven't gotten the public record yet.

MR. WILLIAM H. GELLES, JR.: May I ask a question? Isn't part of their proposed legislation for periodic testing of gasoline tanks?

ASSEMBLYMAN LESNIAK: Not this bill - a bill that is in the drafting process now.

MR. LE LORME: One quick comment in that regard ---

ASSEMBLYMAN LESNIAK: It may include testing and monitoring. It is now just in rough outline form.

MR. LE LORME: In order for periodic testing to be effective, once you have increased the frequency, you make the cost of testing more expensive than constant monitoring. And some of the testing procedures have actually led to leaks of older equipment.

ASSEMBLYMAN LESNIAK: The subject of today's hearing is testing of water contamination in water supplies and not leaking, although that is ancillary to the problem and oftentimes a major cause of the contamination. We are working on an entire legislative package in that regard.

If no one else has anything to say, thank you very much for your attendance and your input.

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