379 Thornall Street, Fifth Floor
Edison, New Jersey
08837-0001

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MEMORANDUM

To: Trevor Anderson
From: Julie Winfield
Date: June 20, 1990
Subject: Copies of Transcripts of the Cinnaminson Public Meeting

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As per your request, I'm sending you (2) copies of the Cinnaminson Public Meeting Transcript. I will be forwarding the original transcripts to Ann.

If you have any questions, don't hesitate to call me at (201) 603-3728.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

IN RE: CINNAMINSON GROUND WATER CONTAMINATION SUPERFUND SITE:

Transcript of proceedings taken at East Riverton Community Center, Manor Road, Cinnaminson, New Jersey, on 5-31-90, commencing at 7:30 p.m.

B E F O R E :

ANN RYCHLENSKI, Public Affairs Specialist, U.S. EPA
CHARLES TENERELLA, Chief, Central N.J. Remedial Action Section, Region II
TREVOR ANDERSON, Project Manager, U.S. EPA, Region II
WILLIAM MORAN, ICF Engineering

MAYOR ELEUTERI: good evening ladies and gentlemen. Tonight we have representatives from the federal EPA to give us a report on the ground water contamination superfund site on Taylor Lane. You will hear representatives from the EPA speak on various areas tonight. I am going to turn the meeting over to Ann Rychlenski, who is the public affairs specialist for the EPA region II and Ann will introduce the speakers. I would like to remind you that tomorrow there will be an availbility session between ten a.m. and one p.m. for anyone here, anyone else who is not here who would like to meet members of this team to discuss what's discussed here tonight and to ask any other pertinent questions which you may have. With that, I will turn the meeting over to Ann Rychlenski and she can proceed from there.

MS. RYCHLENSKI: Thank you Mr. Mayor and good evening ladies and gentlemen and thank you all for coming out here this evening to this important meeting on the Cinnaminson Ground Water Superfund Site here in Cinnaminson Township, New Jersey. My name is

Ann Rychlenski and I am a public affairs specialist and community relations liason from U.S. EPA region II to this superfund site. I would like to introduce the people who are sharing the dais with me tonight and give you an idea what it is they'll be speaking about. To my left is Mr. Charles Tenerella. He's the chief of the central New Jersey remedial action section in region II. To his left is Mr. Trevor Anderson and Trevor is the project manager on this site, also from EPA region II, and to Trevor's left is Mr. William Moran, who is with ICF Engineering and they are EPA's consultants on the Cinnaminson site. I would also like to acknowledge some people who are here this evening. Mr. David Marino of New Jersey American water Company. Mr. Marino, would you let us know where you are please? Also Laurie Perch with New Jersey Department of Health, and Mark Hershberg, New Jersey DEP, Community Relations. Thank you Mark.

Just to say a few words about community relations, I am the community relations coordinator for this site. I am basically your contact to EPA region II regarding this

site should you have any questions or you want to talk about community needs or sensitivities and how we can be more sensitive to the needs of your community. Please, please come up to me. Feel free to speak to me. I have my cards out here on the table, take one and you can feel free to call me anytime. I am usually around in my office ready to serve. That's what I do. I also want to let you know that there are information repositories here in town that contain all of the documents that are pertinent to this site. Now, we are required by law under superfund to provide these information repositories so the public can come and review them and certainly if you have any questions about how this site is being handled or contaminants that may be found or anything you feel affects your environment or your community, that can be found in those documents and we are required, as I said, by law to have them so you can review them and question us on them. Those repositories are located in town. One is right here at the community center. The other is over at the Cinnaminson Municipal Building

and the other is at the East Riverton Civic Center. So you can go there and avail yourselves of the documents, should you wish to.

One other thing is that this evening we do have a court reporter here. The reporter is here to provide an accurate record of this meeting and from the record of this meeting we will put together something called a responsiveness summary, which again we are required to do by law, so that we have community input on exactly how it is we are handling this site and what the remedies are. You are free to comment and we certainly hope you will comment on the plan that's going to be put before you tonight. Those comments should be addressed in writing to Mr. Trevor Anderson, the project manager and the comment period is open through the 15th of June. So make sure that everything you send out is postmarked by June 15th. With that and no further ado, I just want one other thing, since we do have a reporter here, please hold your questions to the end. We will have a question and answer period. When you ask your

questions please stand, state your name and place of residence, meaning the town you live in. Please state that clearly so the reporter can get all the information down. We also have sign in sheets over there at the table and if you all please make sure that you do sign in so there is a record of your attendance here and that's how we keep our mailing list so we can keep you updated on what we send out on this site and there are also copies of the proposed plan and a fact sheet on the Cinnaminson site for your perusal and your information. With that, I am going to turn this over to Mr. Charles Tenerella. He will be giving you a general overview of the superfund process, what it is and how it works and also the purpose of this meeting. I thank you again.

MR. TENERELLA: Some of you might be familiar with the superfund process and what it is and some may not. So, I would like to go over it in a little bit of an overview of the total superfund program that EPA runs and we will discuss it in the context of this particular site. Superfund was created in

1980 as a federal response to what was happening at Love Canal, a very famous hazardous waste site in Niagra Falls. The government did not have any kind of enabling legislation, any kind of funding that could be used to clean up hazardous waste sites prior to what became known as superfund. It is kind of a strange title for a piece of legislation. But that's what it is known as. Starting in, after the law was enacted in '80, we started to develop procedures for identifying sites on a national basis that may need to be cleaned up with federal assistance. That can be out of the superfund itself, which is a government funding program to use tax dollars to clean up sites, or to look at responsible parties that we may be able to identify who may have been responsible for the site and have them do the clean up under our oversight and guidance. So, the program was structured that way. Another thing that happened in the early days, again as an outgrowth of Love Canal, was a recognition by EPA of the importantance of local public input to the kinds of work that we are doing at the hazardous waste sites,

because of the kind of impacts it might have on people in the area, both in terms of health concerns people might have and logistical concerns, administrative concerns when we get to a construction program for a site in the future. So that started from very early in the program. We created something called a national priority list, which was to identify sites and put them on a list and, in some sense of order, provide our support services from EPA and from the site, in this case, the State of New Jersey to go out and study some of these sites and go ahead for clean up. The national priority list is somewhat misleading to some people. They think, depending on the order of sites, where your site ranks in the total list, is how bad the site is and that's not necessarily so. We have a matrix that we use, a system where we identify key areas that might trigger further concern at given sites and when those key areas of concern, one of the major ones is that there is ground water in the area and it is contaminated. Nationally, it is a major trigger to put that site on the national superfund list. So it

sometimes skews a site in terms of where it shows on the priority list. It doesn't relate directly to any kind of direct risks to peoples health today. There is a difference between those two and people have that misconception. However, the Cinnaminson site was identified as one certainly that had some potential ground water problems and therefore was one of the sites that was put on the list, in fact, in 1984. When a site is put on the list, we start doing preliminary investigations to get a better sense and a characterization of what we are dealing with as a site. Once that happens we do intensive investigations at the site. We use contractors to do that for us and in fact that's what's been going on here for a number of years and a few of you may have been at previous meetings where EPA came down here and spoke about the kinds of studies we were going to do and how we were going to look at the Cinnaminson site and they haven't seen anybody back here since. It takes a long time to do the kinds of intensive investigations that we do on the front end, so we know what we are

going to be doing to remediate the site. What we found with the program through its history in the early days, we thought we had the answers, that pretty quickly we would be able to go out, see another Love Canal, we would know how to deal with it. That's turned out not to be the case. We found a lot of very difficult scientific and technical issues at a variety of sites that don't have such easy answers to deal with overnight. It takes a lot of study before we even get to the place where we can come out, as we are tonight, to provide you with what our proposed plan for clean up is at the site. So remedial investigation does take quite a bit of time. Some people are misled about the amount of years it takes. It just seems we are delaying inordinately. It is the nature of our program. After the remedial investigation we do something called a feasibility study. That's where our consultants and EPA look at what are the viable alternatives for cleaning up the issues we have identified at the given site and we have also done that here at Cinnaminson. The study documents and the

feasibility study documents that say what are the alternatives that are looked at are in the repositories if you want to look at them in detail. They are quite extensive and detailed but they are there for you to look at. After that we get to a stage where we get to the proposed plan. That's where we are at at the moment. The proposed plan is the document we distributed tonight that lays out the basic alternatives that we looked at and the alternative we have elected and proposed for consideration. It is the one we think is the most technically viable, given the conditions we have seen here. That's our proposed plan. It's not our final decision and it is very important for you to understand that. This is where the public process is quite activated by EPA. We feel this is the best alternative. If people can come up with suggestions that that alternative is not the best and one of the other alternatives we should be looking at instead, we want to hear that before we make our final decision. That's why we have the thirty day comment period and the documents for your perusal there and we do need, also,

formal written comment during the comment period and why we transcribe the meeting tonight is so we have that well documented in the record before we make our final decision. The final decision is called a record of decision and it is quite a formal legal document and it is the time when EPA makes its decision on how we exactly are going to clean up the site. At least conceptually this is the decision. Maybe it is the decision in the proposed plan or some modification of this. This is what the agency says it is going to do and what we are saying there--and it is both us and New Jersey. We work coopeatively with the State and, in this case, with the DEP in coming up with both the proposed plan and then the final record of decision. Once that decision is made and our regional administrator signs the record of decision, we are legally bound to clean up the site by that record of decision. If we change our mind drastically from that in the future we would have to reopen it. The record of decision says that the EPA will pay and clean up the site according to what we have outlined or

perhaps we will look for potentially responsible parties who we feel might have had something to do with the site and ask them to clean it up and they may do it under our guidance. So it is sort of a two pronged approach as to how we would approach the actual clean up. Following that, we go to a design phase. In the design phase we do very detailed plans and specifications, engineering plans and specifications. In fact, it is at that time that a lot of the questions from the public that we will probably hear tonight will get answered. What we are offering right now is our conceptual plan for clean up of the site and we don't have every detail locked down. We wait until we have our final plan, our final conceptual plan at the final decision stage. When we go to the design stage we start asking ourselves the very detailed questions, and an example in this case is exactly where we are going to put our wells in describing our ground water alternatives and what kind of timing we will have, what kind of routes do we need for heavy construction equipment, what construction

times do we need. It is a major construction project and this is what we are doing during design. During design we also hope to continue our community relations program with you because that's a time when you are impacted as you would by any major construction in a area, where you might have heavy truck traffic, construction equipment in this case. You will have piping and wells being installed in the area. So we want to keep a close relationship with the community during the design phase so that when we go to the final phase, which is construction or the remediation of the site, we do so in a way that's as less disruptive than it might otherwise be if we don't ask for your opinions as we go through design. So, there is a phase of community relations that really starts with the proposal tonight and goes through design. So that as we move through the process we try to keep it as livable as possible in terms of impacting the community in terms of heavy construction later.

With that, we will get into the details of the Cinnaminson site and I will introduce

Trevor Anderson, who is our project manager for the site and he will go over the history and specific remedial investigation results we found over the past years.

MR. ANDERSON: Thank you. The Cinnaminson ground water contamination study area is bounded by Union Landing Road, Route 130, Taylor's Lane, and River Road. It covers approximately four hundred acres in Cinnaminson Township. This is basically a history of what has happened at the site so far. In 1983 the ground water contamination problem was discovered in the area. In 1984 the site was placed on the national priorities list. In 1986 EPA initiated a remedial investigation and in 1989 the remedial investigation report was completed and the feasibility study was completed. I will now go through a detailed description of the various remedial investigation activities.

First of all, we conducted a field study to develop site plans. We initiated hydrologic investigation first to characterize the ground water on the site, to characterize the ground water flow direction. Secondly we

conducted ground water sampling by wells installed by the previous owner and also by wells installed by EPA. We conducted sampling of potable private wells. These are wells that are in the study area and these are wells that are not serviced by the New Jersey American Water Company. The reports found the following organic compounds. First of all we found arsenic, benzene, ethylbenzene, chlorobenzene, tetrachloride, trichloroethane, vinyl chloride and xylene. A total of forty nine wells were installed in and around the site at two hundred and four locations. The wells were placed in order for EPA to totally characterize the site. As you can see from the map, from the diagram, the ground water flow is in a southeasterly direction. Our report also indicated that there were two acquifers that were contaminated, first of all the perched acquifer and the regional acquifer. From the diagram itself you can see what we call clay lenses which are these areas over here. These areas were called perched. What happened, from the sources it leeched out into the perched water zone. It was allowed

to flow horizontally until it found a crack in the clay lenses and flowed downward into the regional acquifer. First of all, the remedial investigation report concluded there were several sources of ground water contamination in the area. First of all, we have the two unlined landfills owned by Sanitary Landfill, Inc. We have unlined soil pits. We have cooling ponds, and also an area septic system. The report concluded that two acquifers were contaminated. The perched water table and the regional acquifer. The report also indicated that ground water from the sources migrated down to the perched water zone from where it migrated further down into the regional acquifer. Chemicals I would also include, as I previously mentioned, arsenic, benzene, tetrachloride, trichlorethane and vinyl chloride. A public health evaluation was conducted. The report concluded that since the residents in the study area is now being serviced by the New Jersey American Water Company that there's no potential exposure to carcinogenic contaminants.

I will now introduce Bill Moran to talk

about the feasibility study.

MR. MORAN: As Trevor said, there are sources of contamination which are contributing to ground water contamination in both the perched acquifer and regional acquifer. Because of that, we have done a feasibility study to determine the best method for our source control and for ground water treatment.

As far as source control, there are two ways to approach this. There are non-superfund controls and superfund controls. As I said, there are two ways to approach source control, number one is non-superfund controls. The sources have been identified as landfills, underground storage tanks and slurry pits. The landfill has been capped by the owner by the order of the State of New Jersey. Underground storage tanks are handled by New Jersey DEP and their Division of Water Resources and slurry pits are also handled by New Jersey DEP by the Division of Solid Waste Management.

As far as superfund controls, we are looking at, in terms of ground water

contamination, and managing the migration of contamination, we have developed five alternatives. Alternative one is no further action. EPA is required to include no action as an alternative. It is used as a base of comparison. Alternative two is monitoring and administrative controls. This is ground water monitoring to track the plume and administrative controls to restrict use of contaminated plume. The next three alternatives, three, four and five, deal with extraction and treatment of the ground water. They differ in the area the ground water is extracted from. Alternative three is treatment of ground water from only the shallow acquifer, from the perched zone. Alternative four is treatment of ground water from the deep acquifer or regional acquifer and alternative five is basically a combination of three and four. It extracts water from the shallow and deep acquifer. In each of the three ground water extraction alternatives there are different ways to treat the ground water or three options. Option A was chemical precipitation. This is a

technology to control inorganics and air stripping is used. Option B also uses chemical precipitation but for organics uses ultra-violet oxidation and option C uses chemical precipitation and biological granulated carbon. This figure gives you an idea of alternative three.

Ground water extraction zones are used to pull the ground water out. It is pumped through treatment plants and then is treated. As you can see here in this alternative contaminated ground water still reaches the regional acquifer. This is a map showing the proposed perched zone extraction system. There are four zones of perched zone ground water which have to be extracted, a very large zone along Taylor's Lane right here, and three smaller zones along other parts of the landfill and other sources. Extraction is used to pull the ground water from these areas and pumped to a treatment plant and is cleaned up. This is a figure showing alternative MM-4, which shows extraction from only the deep acquifer. It is pumped to a treatment plant and cleaned. As you can see here in

this alternative, all the contamination in the perched zone will eventually flow down and into the lower acquifer and get treated. This is a proposed plan for the alternative AM-4 or the extraction and treatment of ground water from only the deep acquifer. There is a line of extraction wells right here which we have located at the further extent of contamination. They trap all the ground water flowing from this direction. All the ground water is put into the treatment plant and reinjected. This is alternative five which again is a combination of three and four. Here we have extraction from both the perched acquifer and regional acquifer. Again, a map of alternative five, which is extraction from the perched zone. Again you have four perched zones and the line of extraction wells capturing all the contamination which is pumped to a treatment plant and clean water is reinjected. Those are the five ground water alternatives and now Charley will talk about the proposed plan.

MR. TENERELLA: I should have done this before. It is more comfortable than standing

on my toes. The preferred alternative, as you can see in the proposed plan that we gave you this evening, was alternative MM-5. That designation MM-5 came from the feasibility study where we use codes to refer to the various alternatives we looked at. That's treatment of the ground water from both the shallow and the deep acquifers. It is a pretty extensive treatment system which will require extraction wells for thirty years, a few extraction wells for thirty years in the deeper acquifer. So that treatment system will have to be in place and operating for thirty years and up to about hundred and thirty wells in the shallow perched areas to sort of take hot spots out and then we estimate approximately a hundred and thirty wells in the conceptual plan. We are hoping to get that down lower so we don't have to punch a lot of holes in the various areas. But where we put those wells, those will be lower in terms of the amount of production per well and they will only be operating for about five years in the shallow acquifer. For both we will be using the chemical precipitation

and biological granular activated carbon treatment system and that was just a selection of the treatment system for technology for treating the contaminants and then reinjecting the water that is treated back into the ground. The object at the end of the thirty year process is to provide an acquifer that has basically safe drinking water as they exist today.

Another option that we looked at or another phase of the project that we looked at while we looked at the ground water concerns here was the SLI Landfill and the potential that has for contaminating the acquifer. Since the time we were first here initiating our remedial investigation in '85-'86, a solid waste cap has been installed on the SLI Landfill and has gone through what's called a closure procedure under New Jersey's hazardous waste regulations. We have to now look at that solid waste cap that's been installed to see if that's sufficient to protect the ground water from further migration of contaminants or whether further capping of some type might be needed in the future. In our assessments

to date in the feasibility study where we looked at that, we determined we would have to wait until we start the ground water treatment systems to get a better determination of how that cap is working, how efficient it is before we do anything further. So there is a potential for us now to come back and re-examine the caps, particularly the SLI Landfill and the contribution that landfill might be making to the ground water. The suspicion is that the existing cap might be okay but we are not sure enough to say that's it. So we are leaving that for another day. That's why you don't see it discussed. It is discussed in the feasibility study but not in the plan.

Another thing that's important to know at the present time is that no municipal drinking water wells are impacted by the ground water. The municipal drinking water in the area is quite safe to drink. It's not contaminated. It is nowhere near any of the municipal wells. That's checked regularly. The importantance of doing the ground water clean up here is to prevent potential future migration of the

contaminants into those wells, to stop the problem in its tracks now before we have a problem in the future that would be that much more difficult to treat because we would have to start shutting down wells and that's the important thing and that's the significance of having Cinnaminson on the national priority list and going through these studies and doing this kind of remedial action at this particular site.

I think we have covered all the bases in terms of the alternatives. We can go to a question and answer period. Before we start that, what I would like to have you all recognize is, the proceedings are being transcribed and in order for the transcriber to hear everything, would you please clearly state your name and if you represent a company or something to that effect if you let us know that, and also ask your question as clearly and loudly as you can so the stenographer can pick it up. On this end we will try to use the microphone and have people shuttle back and forth.

MR. AUGUSTINE: My name is Joe Augustine

from Riverton, New Jersey. I don't know if you mentioned it but in your statement that you submitted you mentioned that the movement of ground water from the acquifer was moving to the south or southeast direction. My question is, do you know the limits of contamination now at the landfill site? Do you know the speed at which it is moving and which wells will be affected first?

MR. TENERELLA: I will ask the panel, for ease, to sit up here and we can get to the microphone easier.

MR. MORAN: If you can see that, this figure shows the extent of contamination in the ground water acquifer. To the furthest extent is west of Route 130. There's a big change in the levels of contamination near the sources. This is just barely contaminated here. We are not sure how fast the contaminants are moving. The landfill, which is probably the primary source here, has been in operation since the '50's and really hasn't moved that far.

MR. AUGUSTINE: Which municipal wells will be affected first, given the present

direction of movement?

MR. MORAN: The New Jersey American Water company has municipal supply wells east of Route 130 approximately a mile, a mile east.

MR. AUGUSTINE: Say if you have to shut that well down, they have other wells, is that correct?

MR. MORAN: That's correct.

MR. MARINO: I am Dave Marino representing New Jersey American Water Company. In response to your question, at the last meeting that we had regarding the landfill and the exposure of our wells to the possible contamination plume, we have prepared a sketch and it is from information that was provided essentially showing the flow of the ground water in relationship to our wells. The wells at New Albany Road and Pomona Road, these two locations right here, as you can see, the green location is the landfill. These two would be the ones that would be first impacted. As far as the answer to your question, how fast is it moving and how fast will it get to our wells, a lot depends on how we use and operate our wells. The harder we

pump our wells the faster that water will move. Knowing that and that is our resource, we have altered our operating pattern, that these wells are our last ones on. So, we use everything else and use these wells last. So we are doing everything we can to slow the speed of the water going through the acquifer. If we do get some contamination at New Albany Road station we have the ability to shut that well down and rely on our other wells since our system is totally interconnected, comprising of sixteen wells. We can move water around pretty easily.

MR. TENERELLA: I would add, when we go to design, it is information from the water company we will use as we start implementing that ground water pump. We will be influencing their wells to a degree and we will be in coordination with them throughout both our design and construction period. So if something happens, we will be quite aware of it as it is happening.

MR. BETZ: My name is Betz from Delran. My property is adjacent to Swedes Lake. I am wondering if there was any studies done on the

water in Swedes Lake because I think it has both acquifers in that lake.

MR. TENERELLA: No studies have been done.

MR. BETZ: In the past two years I have seen no baby ducks in the lake and ducks have been trying but there hasn't been any baby ducks at all and people are eating the fish out of the lake. There's been members of my family tried to swim in there and they have come down with a rash. So I have just wondered if anything has been looked into as far as that water goes at Swedes Lake.

MR. MORAN: Swedes Lake is right here.

MR. BETZ: It is, I would say, within several hundred yards of Taylor's Lane. Swedes Run is in between Taylor's Lane and the--

MR. MORAN: The only thing that is really affected by the source in this area right in the immediate area of Taylor's Lane and Union Landing Road where this plume is right here.

MR. BETZ: This is east of Taylor's Lane. Now some of the lake is thirty feet deep. It is probably the two acquifers.

MR. MORAN: As we said, ground water is flowing south/southeast, the lake is here. It couldn't be affected by these sources.

MR. BETZ: I just wondered if it was ever checked.

MR. TENERELLA: We are limited in our studies when we do a site study to defining in a given site that that is the site and there's contaminants entering various sectors from that site. What happens if you really start spreading out, you start getting cross contamination from minor sources but they are not part of the superfund activity and superfund site and they are not remediated through the superfund process. There might be something happening but we wouldn't be aware of it as that source related.

MR. BETZ: I just wondered if the migration from the landfill went over to the lake.

THE SPEAKER: The gentlemen wants to know what the water quality is in Swedes Lake. Is there existing analysis or present data available? That's what he wants to know.

MR. TENERELLA: There might be from the

State of New Jersey and you might want to contact the New Jersey DEP, but the water resources people down there, not the superfund or hazardous waste people. Talk to the water resources people in Trenton and see if analysis has been done in the past and you can get some data that way. You might also check with the county health department. They might have some of that information also.

MR. OSALSKI: Ray Osalski from the Township Committee here in Cinnaminson. This slide, it kind of makes me wonder. The upper landfill is at least, just glancing at it, about 50 percent larger than the one you have the concentration of wells around and you show a perimeter of this plume and there doesn't seem to be any evidence drawn from sampling wells to establish that perimeter and I would like to know how you came up with that idea. It seems like you should have at least have one or two wells at the corner.

MR. MORAN: This figure only shows EPA wells. There are several wells already installed by the property owner along this edge and all the way up here.

MR. OSALSKI: There are additional wells providing information?

MR. MORAN: Yes.

MR. OSALSKI:

MR. LECEY: My name is George Lecey and I would like to point out less than thirty days ago there was no information regarding any of the EPA studies to date at either of the top two locations listed nor is Katherine Deboner with the Township at this time. So I know it all sounds good but I know it took me several weeks to get my hands on information before we could work on one of several deals in the area. So I would like to see if we can get more cooperation to make sure there's a current contact and that the information does, in fact, make it down to the local offices where it is promised through Trevor's office and a few of the other offices.

MR. TENERELLA: That's really important to us that we go through that again and make sure we have the repositories, knowing where those things are and being made available easily.

MR. LECEY: We have this report. You

sent us two copies. It's been in the clerk's office since I would say January or February.

THE SPEAKER: I came to both locations and I talked to the new contact. They gave me the whole files with plenty of letters from the mayor. No reports, just a lot of correspondence.

MAYOR ELEUTERI: Did you come to the clerk's office?

MR. LECEY: Yes. I had more people laughing at me because I was asking for information.

MR. TENERELLA: That sounded weird to them?

MR. LECEY: They pulled out every file they had for me. They were very nice and they had a bunch of old correspondence with the landfill itself.

MR. TENERELLA: I would say this. If you need information and you are having trouble with your local repositories, get in touch with us. You can get in touch with us.

MS. RYCHLENSKI: I wanted to let you know, we did send out three boxes of very voluminous documents to each repository. If

you have a problem like that please get in touch with me. That's my job, to get the stuff out there. I know the stuff has been in the repositories a good three or four weeks because there were huge amounts of documents and if there's a problem, let me know because I check with them to see if they arrived and they are sent by overnight mail and I was told, yes indeed, they did arrive. If there's a problem there we need to know about it and rectify it.

MR. LECEY: Thank you.

MR. BEARD: My name is Bob Beard, one of the Township Committee. Could you take your slide that said source control and put it back up there? Non-superfund controls, landfill cap, and slurry pits, would those things, the upper crust, the cap you said you are going to postpone or put a moratorium on checking it would seem that that doesn't make any sense to me. You would check the closure in conjunction with the entire atmosphere that you are checking now. If you let the cap go there's got to be migration later on. It doesn't make sense. Can you explain that

please?

MR. TENERELLA: I am not sure I understand the question. There's an existing cap.

MR. BEARD: You said you weren't going to look at that.

THE SPEAKER: We are saying, when we started our studies in 1985 the cap did not exist. So we started our investigation.

MR. BEARD: I understand that.

THE SPEAKER: Subsequently New Jersey asked that that the landfill be closed. So a State Solid Waste, by definition, a regulatory State Solid Waste cap was placed on the landfill. That cap and the efficiency of that cap theoretically should be sufficient in terms of its sufficiency to prevent the continued migration of water contamination.

MR. BEARD: But you said you weren't going to measure that efficiency rate now.

MR. TENREELLA: I am saying rather than--initially the options we were looking at was to decide what to do with the cap in this, what we call operable units. When we sub-divide a superfund site down into

different phases of activity, this particular site was looked at initially as doing it once and doing all decisions under one record of decision and part of that record of decision was to decide what to do about the cap, whether you could nothing further, relook at the solid waste cap or require that an additional capping material might be required for some reason. In our assessments through the remedial investigation we determined that we couldn't make that decision now, it would be unfair to make a decision now, what would be a binding decision. For example, say do nothing, don't do anything further, it would be better to hold off on that, not make the decision, even though we did some early work, and hold that off to a second, what we call an operable unit, a second phase of the project, if needed, and then do another determination, whether the existing cap is fine or not. That would be another study and further work

MR. BEARD: Let me just stop you. This other study that you just referred to, it's not part of what goes up for signing of approval, right?

MR. TENERELLA: Right.

MR. BEARD: That means you have to reopen again for this additional study?

MR. TENERELLA: It is a separate record of decision.

MR. BEARD: Altogether separate?

MR. TENERELLA: Correct.

MR. BEARD: Don't you have to go through all this public hearing again for it?

MR. TENERELLA: Correct.

MR. BEARD: It doesn't make sense. Why don't you do it all at one time and get the okay now and then, if you so desire, your engineers so determine, and down the road one of your phases is to check the capping.

MR. TENERELLA: Our regulations won't allow us to write a record of decision in such an open ended fashion when it is a major decision like that. We are allowed the flexibility of making conceptual decisions now and then getting into detail during the design but when it comes to a major portion of what you are going to do, the way we do it, if we don't think we can do it in one shot, we sub-divide a project into operable units and

do it in phases. Most sites in fact are done in a staged approach. There are few sites that are done on one shot. The relatively simple sites are.

MR. BEARD: So you are going to spend X number of dollars in your first phase to put in a filter system and put in your five year shallow testing areas and your thirty year regional acquifer testing areas before you start the second phase of making sure the cap is adequate so that nothing migrates down again. Do I understand this right?

MR. TENERELLA: If you mean, are we going to wait thirty years to do this, no.

MR. BEARD: I mean all these other things to remediate this problem.

MR. TENERELLA: We are going to start ground water remediation.

MR. BEARD: And then after the second phase of checking the capping?

MR. TENERELLA: That's right.

MR. BEARD: In the interim, if the capping is inadequate, you are going to have migration down from there.

MR. TENERELLA: But we will have the

wells controlling that and then we will decide if we need additional capping requirements on the site.

MR. BEARD: How do we get a commitment from you all that this second phase will be done in a timely fashion in proximity to the completion or the operation that you are going to do in the first phase? In other words, I don't want to wait thirty years either. I will be dead by then.

MR. TENERELLA: All superfund sites that are still active in one way or another, in construction phases, and haven't gone through what we call total closure, we have a term for it, which is the deletion of the site from the national priority list and that's another process in itself when we are through with construction, we are comfortable that everything has been done as we wanted it to be, we have the de-listing process, which we haven't gotten into in any sites in the country yet. Before that occurs all this would have to be examined. As part of that process we do what we call a five year review of all superfund sites that are still active

and things are happening. So even if we did nothing, five years from the start of construction we would do a review. We would probably in this case, maybe we will go through the first five year period, maybe we will need that time to get a sense of what's going on. It is going to take at least a year to design the project. Then it will be a year at least before we complete our design and specifications and everything is comfortable with them and then we go to construction. That's a couple years down the road ever then. By that time we are getting close to a five year cycle and sometime in this period of time when we start the pumps going and we see exactly what's happening with regard to the ground water and we think the cap is settled properly in terms of normal site closure, we can make a better determination. There's been debate about it, do we do it now, should we go and put another cap on now or do we walk away, say no action, and there was a reluctance in terms of making a decision now and reopening a ROD. It's easier to hold off and do another operable unit and define this thing in terms

of the technical language we use as an interim step and as I said, that's very common in most sites. This is not our final ROD. When we do your final ROD you actually define it that way in terms of how we structure our paperwork and this is not know a final ROD. We don't want to belabor that point in writing a simple proposed plan that people can understand but that's the kind of detail we would go into in terms of making those commitments.

MR. BEARD: I have one other question. You mentioned something about five years for the shallow checking and thirty years for the regional. What do you expect to happen in the five year? It is always going to go down but why do you only test the shallow for five?

MR. MORAN: There's less water in the perched zone. It can be removed in five years.

MR. BEARD: There is less water in the perched zone and can be removed in five years. Would any residual continue to hit that perched?

MR. TENERELLA: You mean hitting the lower acquifer?

MR. BEARD: Hit the perched and then lower, if I understand what he's saying.

MR. MORAN: First of all this is a much smaller volume of water. So it can be treated much quicker.

MR. BEARD: I understand that, but you are going to do five years on the upper and then thirty, you are going to keep your monitoring thirty years on the lower.

MR. TENERELLA: Those aren't monitoring wells. Those are extraction wells.

MR. BEARD: One other question. I think my associate's comment was well taken. I would like to see, I guess we have to put this in writing, on that plume area, the periphery, his point was well taken. We want to know, at least I want to know and I am sure he does, all those other locations of the wells on that outside, what was it, Union Landing Road area. Can we write to you and you give us this information?

MR. TENERELLA: You want the wells that we looked at that didn't show tonight. Those are in the remedial investigation, the feasibility study documents. That should

answer your question. If that doesn't, get in touch with us.

MR. BEARD: We had to hire our engineer to read it.

MR. COMBS: My name is Jack Combs an environmental consultant. I have several questions if you don't mind. I want to double check the ground water flow. It is to the southeast?

MR. MORAN: South/southeast.

MR. COMBS: Is that both acquifers

MR. ANDERSON: The regional acquifer is south/southeast. The perched zone may go whichever way it dips.

MR. COMBS: So it could go towards the southwest, towards the Delaware?

MR. MORAN: The Delaware is actually north. They are very small perched zones. Any ground water that flows off of them eventually winds up in the regional acquifer and starts moving south/southeast.

MR. COMBS: What's the depth of your perched zone, your shallow low acquifer?

MR. MORAN: The depth of the perched zone I would have to look it up.

MR. COMBS: I have six ground water wells on a site on Taylors Lane in Cinnaminson and I am picking up small traces of methylchloride. Is it possible we have what we call sinking contaminants, sinkers to the bottom of the acquifer and backtracking to the north?

MR. MORAN: What do you mean by backtracking?

MR. COMBS: Instead of floaters floating on the surface of the acquifer, is it possible you have substances sinking to the bottom of the acquifer?

MR. MORAN: Most of these are heavier than water.

MR. COMBS: So it is possible they are sinking and backtracking?

MR. MORAN: We don't have evidence that they are backtracking.

MR. COMBS: Thank you very much.

MS. RYCHLENSKI: Yes, ma'am?

MAYOR ELEUTERI: I have a question. On page three of your plan you list four potential sources of contamination, the landfill and three other companies. Are they in fact contaminating? Without reading them

all, there's an unlined landfill, solid underground storage tank, cooling ponds and slurry pits and septic systems. If that's true has anything been done to correct that, are they actually in fact contaminating?

MR. ANDERSON: At this moment in time our investigation and study indicates Salvage Auto auto underground storage tanks are sources of contamination. At this moment in time EPA hasn't conducted an analysis yet in the sense right now the landfill is capped with eighteen inches of clay. They have monitoring wells. They provide quarterly ground water sampling results to DEP. The other sources of contamination will be taken care of as was explained by Bill Moran.

MAYOR ELEUTERI: When you say EPA you mean the federal EPA.

MR. ANDERSON: Federal EPA.

MAYOR ELEUTERI: Are you investigating these to determine whether or not--

MR. ANDERSON: There's an ongoing investigation that we are conducting. That investigation is not completed as yet.

MAYOR ELEUTERI: On these areas, these

companies?

MR. ANDERSON: These companies and other companies too.

MR. TENERELLA: There are some things that we don't have direct control over. Even though there might be federal laws we have designated responsibilities to the State of New Jersey. There are some things we would be working with DEP on in terms of the exact regulatory strategies and specific regulatory action we would take in a given facility. It might come under state law.

MAYOR ELEUTERI: When will these studies be complete? Mr. Anderson said you are conducting studies now. Is there an estimated time when they'll be completed and we receive a report?

MR. TENERELLA: As we define a regulatory violation by a given company under a given federal or state law then we will take action under that law and that's the kind of strategy we use.

MAYOR ELEUTERI: Do you inform us on that as you do make a determination?

MR. TENERELLA: I would say that early on

in our investigation we wouldn't be able to. Later on, yes.

MR. HAMEL: I have two comments, one for the Mayor. Let me identify myself. I am Frank Hamel, President of DelVal Ink. As you can see from the map we are surrounded by the landfill. I am very disturbed about the landfill. We have been their neighbors for thirty years and had nothing but trouble. We have had dust, dirt, bad odors and now we have got contamination. I wanted to ask but before I do that let me go through a little scenario which might help the rest of you. We are one of the companies which is identified. In fact if you look at your brochure it talks about DelVal being one of the potential contaminators. When that came across my desk about nine months ago, I didn't exactly have a great morning but I did, being a chemical engineer, evaluate the data. We plotted our positions, our wells, we indicated the degree of contamination, we determined the exact contaminants in the wells which were surrounding us and then the wells which were downstream and you can see we are downstream

and in every case the contaminants which were mentioned to you before, ethylbenzene, xylene, all those were found in the landfill at much higher concentrations than they were found in DelVal. The compounds from the emissions from the vents were about a thousand times greater. I wrote up that up and sent it to people like Trevor but said let me just run this by someone else. So I ran it by someone else and they said, Frank, you're not a bad engineer, but what do you have after your name? I said I have President. Well, what do you know about hydrology? I said, well, I went to school. Can you sign your name hydrologist and I said, no, I can't do that. They said get one. So I did. In fact I spent five thousand dollars for that piece of paper. That piece of paper says to me that I am clean and faultless and the reason I mention this to you, you might have the same problem. These guys do a great job but remember they are very casual, they said, maybe DelVal but it could also put me in your eyes as a poor citizen. We have been in this community for thirty years. We enjoy it. We employ twenty-five

people. You can ride by Taylor's Lane and look at us and we are proud to be in Cinnaminson. We don't want to be dubbed as contaminators. I have just written Trevor today, special delivery, which says no way are we contaminating. But I will say this, I am getting tired of that landfill. That has been at my back for thirty years and we want that baby cleaned up and whatever technique it takes to clean it up, I applaud that. The question I have to ask after all that routine is, how are we going to prevent the water which is under the landfill from coming down and continuing to infiltrate my land, deprecciate the value of my company and do all those things which make me very unhappy? That's my question.

MR. TENERELLA: Starting with the landfill and its contribution or other sources and their contribution, as I said before, there are two ways in which we clean up a hazardous waste site. One is we use the superfund, the money that Congress gives us through various tax programs including a taxz on petrol-chemical products nationally which

is in a pot of money, which in 1986 was something like five billion dollars, for site cleaning and we clean sites up with it. The second option is we look for what we call, to start with, potentially responsible parties because we don't want to talk about people who are guilty. It is you, it is you, it is you and that's that. But we have suspicions, we have people who may be contributors to a particular contaminant plume and we use that term "potentially responsible parties" until we can come to a determination more definitively whether they are indeed a contributor and about how much. It might be minor or it might be significant. That doesn't prevent us from doing, in an area wide study like this, things like ground water clean ups while we still define more carefully who we think is doing exactly what and that is an imprecise science at best even then. Then again, precise enough under the superfund law to cause us to have what we call joint and several liability. I am not a lawyer but basically what it means is, if we can find one person, we might miss ten, but if we can find

one we can nail him for everything.

MR. HAMEL: My other question is, you are going to put these pumps downstream from [illegible] therefore you will put that across my property.

MR. COMBS: We recognize once we [illegible] actions we will be impacting the ground water flow before we started and we're certainly taking that into consideration. Comments like yours are important also, the comments. When we say a community, we do not just include the public who lives in the area. We also include elected officials and companies and we want to know during the comment period if you have those kinds of concerns so we can take that into account when we go back into design. It doesn't change what we want to do in terms of the clean up option but certainly changes the kind of direction we take for full control in the area and that's where we get into the specifics the Mayor was talking about before.

MR. HAMEL: Then what you are saying is during this thirty year period you would continue to have contamination flowing across my property for thirty years until you [illegible]

all the leechae from underneath the landfill across my property.

MR. TENERELLA: In the deeper [illegible] for thirty years. In the shallow [illegible] for five. That's getting hot spots [illegible] perched areas and it will take that [illegible] period of time when you start treating ground water. It is troublesome to get it down to levels that are sufficient for draining water again later and it is a very time consuming purging operation but it doesn't also necessarily mean that you have got these terrible solutions of contamination that will boil to the surface either. After awhile you will have lower levels of contamination, not fit for drinking water so we don't want them to remain there, but not the kind of contaminants where you have red and green bubbling ooze coming out of the ground either.

MR. HAMEL: When do you exspect to get all that leechae from under the landfill. It will be there forever.

MR. TENERELLA: That's what we are saying, landfill closure, which is not necessarily part of the superfund process [illegible]

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is a separate process that states usually [illegible] and it is a whole other process of running [illegible] monitoring wells around the landfill [illegible] putting caps on landfills and checking [illegible] the monitoring wells whether the cap [illegible] sufficiently retarded leechae so you [illegible] have outward migration any longer. That [illegible] happens through the solid waste authority [illegible] the State of New Jersey and or under [illegible] superfund. We are going to have that [illegible] happening because the SLI Landfill was closed under State guidance and there is monitoring [illegible] to go along with that separate from but we use them in correlation with our superfund [illegible] program. We will have that plus purging the ground water and that should stabilize the situation. Are there absolute guarantees, guaranteed that is going to work and we are set? No. We have never done this. Superfund started in 1980. The first site was Love Canal and it turned out to be a relatively easy site to remediate. What we did at Love Canal, we moved people out of the homes, capped the landfill, and it was the first [illegible] hazardous waste landfill cap, and we put a

leechae collection system and that's holding it in. The ground water up there is not used for drinking. If the ground water is [illegible] impacted, that's how it is running up [illegible]. That seemed like a relatively simple solution to use at other sites but as [illegible] gone along we have gotten much more sophisticated and it is a much more troublesome program to project. What will happen in thirty years is not known.

MR. HAMEL: Can you surround the landfill with leechae pumps?

MR. TENERELLA: The monitoring wells that are put in, if that's necessary to do that, to put in a leechae collection system around the landfill, if they have a monitoring system that shows they have contained their contaminants, fine. The monitoring system says that to you and you don't do anything further.

MR. HAMEL: So you have checked the results of the monitoring wells?

MR. TENERELLA: We certainly use that information directly to see what kind of impact we think we are getting from the

landfill and it is that kind of information that led us to the lack of a decision right away, whether we need needed further capping material on the landfill or whether it is doing its job. We need more monitoring data from those wells.

MR. HAMEL: Didn't your engineers say that it had broken through the clay in the perched area? Did he mention about the clay, that had nothing to do with the landfill?

MR. MORAN: No.

MS. FISHER: Carma Fisher. Next year Congress will vote again on whether they'll continue superfund. My question is, is the money going to be dedicated for this? Will it get done whether they vote yes or no to continue the superfund?

MR. TENERELLA: That's a good question. Someone somehow always asks it at the superfund site. The simple answer is no, no guarantees. In 1980 superfund was established. It was called, I can't even recall the full title of the act. Comprehensive environmental recovery liability. I don't even use it. But that's

CIRCLA, that's superfund's formal title. That's the title of the law in 1980. In 1986 we ran out of money. In 1986 we were reauthorized and it took a year of congressional debate to reauthorize superfund in '86. That was called, that act is formally called SARA, superfund amendments and reauthorization act. That act provided additional money until 1991 and no further and it also changed drastically how we ran the superfund program because we had learned between 1980 and '85 that the program was becoming more complicated, it was a more of a long term program than the government had envisioned when it was started. So the '86 amendments took quite awhile to get reauthorized because we changed superfund quite a bit. In fact Cinnaminson as a site fell into the lull created by that reauthorization debate because we could no longer fund anything for awhile. About a year the agency was fairly dormant. We were trying to keep staff on board and we couldn't pay them. There was quite a lull in the superfund activity because we didn't have heavy funding

available any longer for that year. We had minimal funding. In 1991 the same thing could occur again. The reality is that the [illegible] of hazardous waste sites is a national priority, is very high on everyone's [illegible] and it suggests, particularly in the year of the environment, we just went through the twentieth year of earth day, as a practical matter, something will be done to reauthorize superfund, everyone suspects, because it is on everyone's agenda as something important to do, both by elected officials in Congress and by the public at large. How much money we get is to some degree impacted on how much Congress wants to give us based on other budgetary considerations and what the superfund program will look like as of 1991 may also change again as we learn more about the program. From a money side, yes, it is always an issue and in 1991 it will come up again. By the time this project is in construction we will be in that next cycle of authorization and there's no guarantees other than the practical, again, that superfund is considered a priority nationally.

MR. ROGERS: George Rogers, a resident of Cinnaminson and I have property on Taylors Lane. I am getting more and more confused as I sit here and listen to this. I received this thing in the mail on May 22. I really haven't had a lot of time to digest it. I have a lot of thoughts that come to my mind as I read it and a few of them I have jotted down here as I was waiting for this program to start. One thing comes to mind, on page four of this little pamphlet it says in the average lifetime the cancer risk caused by ingestion of ground water from the perched water table is one, whatever it is, and from the lower levels of the acquifer, one per thousand. I am just wondering, in a worst case scenario, if all the wells were shut down wouldn't we be adequately supplied by water by this sixty two inch aquaduct which is taking water from the Delaware River. I know the New Jersey Water Company is planning on spending quite a few million dollars to provide water for Mount Laurel and Moorestown and I understand from one of the meetings that that water will be available to Cinnaminson also. So under the

worst set of circumstances, all the private wells and your local wells could be theoretically shut down and there would be adequate water if this new pumping station right behind Taylor's Lane there was in operation. That's the first thing that came to my mind.

The second thing that came to my attention here this afternoon I happened to get a copy, purely by coincidence, of the American Cancer Society's publication which I recommend everybody get a copy of it, it's quite interesting, and they mention in here a lot of very fascinating facts about cancer and I think that's one of the reasons why we want this thing cleaned up and why we are concerned about it. They say, at any rate, as I recall, in a community of a population twenty-five thousand, and I think Cinnaminson has a population somewhere in that neighborhood, sixteen, seventeen thousand, you can expect in the year 1990 for a community of twenty-five thousand that fifty people could contact cancer and in a ten thousand community it will be twenty people. That's not the lifetime

but just in one year, 1990. So you are talking over here in your publication about one additional person per hundred thousand, or one additional person per thousand will be getting cancer if this situation is not kept under control. Meanwhile we have got somewhere between twenty and fifty people in this year alone, in this area, who can be expected to contact cancer from such things as smoking, from such things as eating a high fat diet, from such things as perhaps water that's getting contaminants coming from these Lawn Doctors spraying chemicals all over our lawns and so forth and so on. It almost sounds a little bit like this is a pork barrel, a thirty year pork barrel program. There are so many much more important things I can think of in just a few minutes that this money can be better spent on. We have homeless people in Cinnaminson. Money can be spent on educating people not to smoke. We have a severe problem in this country of fetal alcoholism. Probably ten percent of the population were born to mothers who drank and smoked and took drugs during pregnancy. We have a terrific problem

of people who have problems with drugs. Don't you think some of this money that's being spent, you have done a wonderful thing, you have capped this horrendous, hideous eyesore in this township which stunk and did nothing but cause problems. You have capped it. Theoretically, the capping should prevent some of this migration. You don't even know how far it's progressed. You seem to have a thirty, thirty-five year site. Don't you think you must have a million dollars worth of intellect in this room alone to take care of one additional cancer case in a thousand, in a lifetime situation?

MR. TENERELLA: Let's try and put this in perspective.

MR. ROGERS: Why don't you go back to Congress and ask them? We are talking about a piece, fall out. Why don't we have a fall out from some of these things and put some of these funds to work helping people?

MR. TENERELLA: Let me further clarify what this means in the proposed plan. In order for us to clean up a superfund site we have to determine that there's some sort of

risk of some sort to the health or the environment. Either--

MR. ROGERS: There are many other risks that are more severe.

MR. TENERELLA: We have to determine that there's a risk, either an actual risk, which is not the case here, or a potential risk, which is the case as I explained before. The idea here is to clean it up before you have a problem. But we have to define those potential risks. The numbers you see here, which could be explained to you in more detail today or in the availbility session tomorrow, we can explain how those numbers come in more carefully. That's what gives us our authority to clean up the site. If there's no risk, we don't spend superfund money.

MR. ROGERS: What about the risk from children who are being killed in automobile accidents from drunken drivers?

MR. TENERELLA: The decision on where money gets spent is not ours. We just work for the agency.

MR. ROGERS: Have your agency go back to the people

MR. TENERELLA: That's your job as citizens, to go back to your elected officials and register with them what you think national priorities should be. My job is to implement the superfund law as given to us by Congress. Congress tells us how superfund will operate as a whole. Congress told us in '80, during the reauthorization in '86 how to change and operate a different way and told us how much money we are going to get to spend. Congress reacts to public concern and over those years there's been an outcry of public concern for protecting people from hazardous chemicals.

MR. ROGERS: Drummed up by the media.

MR. TENERELLA: Including from hazardous waste sites. That's the decision that Congress has made and that's what we operate under.

MR. ROGERS: Spend your money capping these sites and lining new sites if you must have sites.

MR. TENERELLA: Once those decisions are made then we are here to implement them.

MR. MARINO: The scenario you laid out is considered a worst case scenario, but the key

treatment plant that's being designed currently will have the ability to supply water to Cinnaminson and the balance of our distribution system if in, fact, all our wells did get contaminated.

MR. ROGERS: What happens when the salt line moves up?

MR. MARINO: That's being addressed with the Delaware River Basin Commission and the release programs and the reservoir modifications.

MR. SHAVITZ: Les Shavitz. We own the property within the study area and I have a couple of questions. Question number one is, what's the status of the land within the study area? Is there any danger to people who live in houses that are on the study area? Is there any reason not to build new structures on the study area? That's question number one. Question number two is, as far as the well system is concerned and the treatment plant and so forth, if the EPA, if everything is approved to go ahead and fund this thing and do it and so forth, is there a condemnation procedure too, an exercise of

eminent domain or anything like that to gain the well sites and the treatment plant sites and what are the rights of the property owner as far as taking of land and so forth? Question number three is, how deep is the deep acquifer?

MR. TENERELLA: I understand it is about two hundred ninety one feet to the bottom. That's question three. The first two, the land issue, the issue here is potential contamination of a ground water source. In fact, the intensity of the clean up is a factor of the importantance that the State of New Jersey places on protecting ground water resources in the State, and in making sure if there's contamination there that contamination is fully remediated but it is in the ground water and rather deep down. So you don't have a surface contact kind of a problem at this particular site. It is strictly ground water plume type contamination that cause the risks here that causes us to do this type of work. No problem on the surface.

MR. SHAVITZ: A further question, if you grow things--

MR. TENERELLA: Right, no problem. There are sites where there is certain types of contamination that migrated off site by rain and such and people may have contaminated gardens. Now that's not the kind of [illegible] have here. The second question, on the [illegible] issue, when we, in design, find exactly where we think we need to place wells, we will be asking people who own those properties to provide us something called an access agreement to construct those facilities, both the wells and the piping of the water to the treatment facility that's going to treat this ground water when we take it out. What you have to envision here, do we have the diagram of the wells? See that piping Bill is pointing to? As we get those wells and we pick up the ground water it has to be piped to that treatment plant. So what we will have to do is construct a variety of wells on people's properties. Some will be those thirty years major extraction wells to purge the deeper acquifer, the main ground water acquifer, and some will be for five years and they'll be smaller sized wells but we are still going to

have to pipe that ground water to the treatment plant for treatment prior to reinjection. That's a rather extensive network of piping and wells that are going to have to be constructed for awhile and we will need access agreements to get in there, some for construction and some to get a well on somebody's property for awhile.

MR. SHAVITZ: What does a well look like? Is it all underground?

MR. TENERELLA: It can be in a variety of ways. I have seen architectural diagrams of wells in what looks like a small utility building. We need access to the well for maintenance purposes, for the actual pumps and it needs electricity. Other than that, the piping and the well itself is underground. So you may get a little structure of some type, a little building or some can be flush, it depends on the size of the wells. As we get into design we will get into the nuances of that so there won't be blatant large sized buildings that are one story tall. They'll be small sheds with a well in it. So they won't be massive facilities in that regard. It is

disruptive though. It is in your back yard and close in, and you might not like it there. We took a look around the area where we will be putting in especially the major wells. Most of the wells will be drilled in either undeveloped land which will be fine, out in the woods someplace, on industrial facilities and a few on residential properties where they seem to have enough space that they can probably handle a well without it being in the barbeque grill or something like that. It doesn't look like we will have too much of a problem being invasive on someone's property where it will be disruptive to them. That was our first look. When we get into the really detailed design, the shallow acquifer requires a hundred and thirty wells. We would hope we can reduce that number down so we can still pick up the hot spots without having to drill a hundred and thirty wells hopefully. That's still a lot of wells to pump in for five years and it is a concern we have.

(At which time a recess was taken)

MR. TENERELLA: I would like to say before we start the next cycle of questions

and answers, first, that we are willing to stay here as long as you have questions. So don't water worry about not getting your question in. We will stick it out as long as you feel we need to be here. Secondly, we will have a public availbility session tomorrow between ten and one and that's listed, I am sorry, ten and two o'clock and that's another opportunity for you to come in on a one to one basis. It is between ten o'clock and one o'clock tomorrow. So if you have individual questions you want answered that you feel you didn't get answered tonight, please do and thirdly, we are sometime available in the offices in New York if you have questions in the future and you need a response please contact us, either Trevor or Ann will be happy to help you with that. If you want to get on our mailing list be sure you signed in tonight. We use that to mail out further information in the future to keep you informed. Those of you who need something specifically please get in touch with us. We're not trying to shy away from you.

THE SPEAKER: I have one last question.

Can someone show me on the map where they believe--I would assume there are two plumes in the shallow and deeper acquifer. Will someone show me where they believe the plumes to be at the present time.

MR. MORAN: The perched zones are very small, very localized and there are four areas identified. The regional acquifer, underlining the entire study area again, this boundary shows the extent of the contamination.

THE SPEAKER: Will you please go back to the other map? Are the shaded areas the plumes?

MR. MORAN: The extent of the perched zone there, that area, right.

THE SPEAKER: Isn't that larger area, isn't that to the northeast? I see Taylor's Lane and Haganaise Corporation and Taylors Lane, if I am correct, runs ease to west.

MR. MORAN: Due north.

THE SPEAKER: Okay, thank you.

MR. TENERELLA: Keep that up for a second. I have some questions during the break and maybe this will help those of you

who are asking me during the break where the perched zones areas are. There is one sausage shape and a few circles here. Those are the perched zone areas where we will have [illegible] in the smaller wells for five years. Particularly in the sausage area there are a hundred wells going in there. That's the area where we have the most concern for in terms of designing a lot of wells in a given area. So maybe that'll help some of you who asked those questions before.

THE SPEAKER: It seems to me that you are taking the water out of the ground, you are going to clean it up and put it back into the ground. Am I correct in that?

MR. TENERELLA: Yes, sir.

THE SPEAKER: Well, it seems to me you are not removing the source that contaminated the water in the first place. If you clean up this water and put it back into the ground you are going to get the contaminated again because you are not going after the source. You are not going after the source that contaminated the water in the first place. It seems to me you are running around in circles

The source that contaminated it in the beginning is going to do it all over again.

MR. TENERELLA: There's a number of ways we can remediate various sources. Either they have to be dug up or they have to be encapsulated in some way. They have to be removed as a source of contamination through to the ground water.

THE SPEAKER: Are you going to do that?

MR. TENERELLA: The biggest example is the SLI Landfill and the cap at the landfill plus its monitoring well system which is part of its State solid waste closure plan will define that for that landfill. The monitoring wells around that landfill define whether you have leechae coming back out again. If it is not, it is incapsulated and you are okay, the ground water won't be further contaminated.

MR. BEARD: Bob Beard, Cinnaminson Township. I have a question for Mr. Marino. Mr. Marino, they are going to put some very large piping from the area on River road and running water up to Mount Laurel, right?

MR. MARINO: Right.

MR. BEARD: Quite honestly we were told

that none of that water was for use by Cinnaminson, it was necessary for Mount Laurel and those outlying towns. So the response you gave earlier to this gentlemen here where you said if all the wells or he said if all the wells were closed would Cinnaminson have water from your new piping and you gave him the answer yes, we have been told quite to the contrary as a Township Committee. I mean you don't have to address that. You can write us a letter.

MR. MARINO: Like I said, that would be a worst case scenario. We are not planning for all our wells to go sour or get contaminated and we will continue to use those wells as long as we can and for many more years to come. That plant's due to go on line in 1995. Initially none of the water will be needed in Cinnaminson and will continue on to Moorestown, Mount Laurel and so forth. However if we have a contaminated well, we will evaluate whether or not the water from this treatment plant being fed to Cinnaminson is more economical and more beneficious than trying to put a treatment plant in a

residential neighborhood where our existing wells are located right now. That poses a problem, a logistics problem of how we are going to get our treatment into our well sites right now, which are in residential areas. But you have may have been misled before. This water can be used for Cinnaminson, for Delran, for the rest of our service area and connections will be made so that if water is needed it can be used by the local residents, wherever it is needed. It is one company.

MR. BEARD: I understand it is one company but very specifically we were told, and I think the two committee men will attest to that, they said, that's going for Mount Laurel and is not for Cinnaminson, and our problem is, what are you running the pipes up through our town for?

MR. MARINO: I am sorry you were misled or misinformed. The source of water is there and if those local wells are contaminated, believe me, we will take water from the new system to supply water to our customers in Cinnaminson.

MR. BEARD: I have another question. If

you are going to do yours in '95 and EPA is going to do their's in the next couple years hopefully, there's going to be sort of building against each other. You will be doing construction, they'll be doing construction in the same area. Have you worked out a cohesive plan for this, Charley? Are you aware of what Mr. Marino's water company is going to do, so we don't, you know, it is going to be total chaos in Cinnaminson.

MR. TENERELLA: That's one of the reasons the design plans and specifications take a year or more, during our design period after we say this is what we are going to do. Right now we have a proposed plan. We are not ready to go any further than that until we sign a record of decision and say that is what we are going to do. Once we do that and we go to design then we start operating very specifically with property owners in the area that might be impacted, with the Water Company in this case very particularly and we have talked to Dave already about it to be sure, so we will work together. The priority here is humane drinking water, quality drinking water

for the population and you work around that. That's what we would do in our construction and we will have to work around that.

MR. BEARD: May I suggest something? I suggest that you work also with the Pennsauken Solid Waste facility down here that's going to put this incinerator right in Pennsauken not more than a couple tenths of a mile from our town and it will dip the hazardous waste to dump hazardous waste, to come up to our acquifer and it is going to be a couple million dollar project. I hope you are not all working against each other. You are aware of the solid waste facility that's going to be built down here and they'll have a hazardous landfill supposedly and dumping it into the landfill and leechae through and go into our acquifer.

MR. TENERELLA: If they are doing a hazardous waste landfill now they have to design that on a far, far more restrictive guidelines than any landfill was done especially for hazardous waste in the past. Are the landfill barriers absolutely impermeable? They are required to do

monitoring, required to put liners in people didn't do years ago. Years ago you opened up the ground, you dumped stuff and threw soil back on. If you have a hazardous waste landfill that's not what you do. That's what was done and that's why superfund is in existence, to fix those up, but a new facility has to be constructed under very strict guidelines particularly in the State of New Jersey. If that facility gets sited and constructed in that area the chances of some kind of leechae interfering with us, I don't think you will see a leechae. I am not going to guarantee it. That's not what we are dealing with.

MR. BEARD: I am just raising the question. Are you aware of what's going on down there, are you aware of the potentials that's going to affect our town and this project? You're going to fund for X number of millions of dollars.

MR. TENERELLA: I am aware of its existence for now.

MR. BEARD: I think we out to make the proposal available to you because it is going

to have an impact on us and I hope it doesn't impact on your vast expenditure that [illegible] you are going to do to remediate this. One other question. You know, down in this area if you put that chart up again, where you have your plume, this really isn't an engineering question but I guess maybe you or Charlby can answer it. Take that landfill down in Hoganaise. I don't know how many years, twenty years, our kids played in this area and they must have been ingesting, breathing all this stuff. They had water pumped in down there. What do we do with our kids? I know it is retro, it is past tense but I don't know whether anybody can answer the question, but it is a concern I have with all the children for twenty years have played down there, hundreds of kids on Saturdays and weeknights that breathe all the nonsense that was down there and now you come out here and say inorganic, organic contaminants.

MR. TENERELLA: Those are in the acquifer.

MR. BEARD: You also say in here the fumes that are coming up, you see it right?

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MR. TENERELLA: What we are talking about there is potential risk if you upset the applecart. If you are drilling a well [illegible] the deep acquifer you may get a rush of [illegible] volatiles coming out of the wells from [illegible] deep acquifer. If you hit a hot spot you may get something more concentrated and you will get an organic smell coming out of the well. So there is a risk of volatile exposure at that time. When we do our remedial design what we do is develop a health and safety plan. That has two main purposes. One is to protect the workers onsite. A lot of the workers do this kind of work regularly and they have to always be suited up in respirators because every day of their working life they are exposing themselves somewhat arbitrarily to various chemicals. So to protect them from even low levels of chemicals a very rigid site specific health and safety plan is constructed for them. Secondly, another phase of the health and safety plan is any kind of concerns to the public at large in the area during construction. If we think there might be some impact on the public we

will do various kinds of air monitoring, for example, to make sure we are not getting anything volatile coming out of the well. That health and safety plan, the construction of it or the design of that, is a factor of the given site, the kind of chemicals we are dealing with, how toxic the chemicals are and what kind of concentrations and whether we think we will get any in the ground water, surface water, soils or air. A health and safety plan would be developed as part of the design.

MR. BEARD: Who does your construction work? It's not the DEP obviously.

MR. COMBS: EPA staff oversees work by, in this case, ICF as our contractor on preparing the feasibility study and getting to this point.

MR. BEARD: They are your engineers.

MR. TENERELLA: They are multi-disciplined, hydrologists, chemists, toxologists, risk assessment type people. They are a multi-disciplined consulting firm. When we go to design, normally, in a site of this size we would probably go to the U.S.

Army Corps of Engineers who does a lot of our design and construction contract work and they do the oversight for us on major construction projects and they'll go out to bid to specialized design firms who will actually design the plan. That's when we will get into the specifics of where the wells will be and what exactly they'll look like and what the well houses will look like. There will be a design contractor whose work will be monitored by the Army Corps of Engineers and us. We will then all certify that design along with the State of New Jersey and then we go to construction and once again we use the Corpls of Engineers also. We go to construction companies to do the actual construction activities. But for those two stages we will have a lot of involvement with the U.S. Army Corps of Engineers. If we don't use the Corps we have other consultants we use directly.

MR. FISHER: Fisher. I live in Cinnaminson. The general flow of the water is, from what you have told us so far, from River Road down to Route 130?

MR. MORAN: That's correct.

MR. FISHER: Now you have two of those perched zones, one above the SLI Landfill in the corner, a round one and then the [illegible] shaped one above the SLI Landfill. [illegible] have another smaller one there, two other small ones. Now is there different types of contaminants in these areas? If these things are coming from the landfill they are going in the wrong direction, aren't they?

MR. MORAN: The ground water flow in the perched zones is depending on which way the perched zone is sloped and it will flow down into the regional acquifer. It is a different flow.

MR. FISHER: In those areas it could be backing up in the other direction.

MR. MORAN: But then flowing, falling into the regional acquifer. They are the same, arsenic and several other compounds.

MR. TENERELLA: Yes, sir?

THE SPEAKER: I have another question. I am not sure whether it is a technical or literary question. In your sheet here, page four, you list under the summary of site risks, you list the inorganic things as

arsenic, Cadmium and cyanide as potential risk items, I guess the contaminants. I am sure most people are familiar with arsenic and cynaide as significant poisons and I know that cadmium and even beryliums. Then in the second column it says arsenic and vinyl chloride accounted for most of the estimated carcinogin risks for ingestion from ground water from the acquifer. So this stuff is pretty bad stuff is what I am getting at. What I really would like about your MM-5 C and it gets to a literary question rather than a technical one, if you look on page one under your option C description and option C essentially holds true for all the alternatives, it says option C uses biological granular to extract the organic then all the things I mentioned before are the inorganic ones and if you move down it doesn't say anything about organics and biological contaminants and I would like to be reassured that little word up at the top there, chemical precipitation, is included and perhaps in future things you might say, in addition to the removal of. Is that what it really means?

MR. MORAN: Yes.

MR. TENERELLA: One difficulty we have in putting one of these things together is to try and make it readable and try and make a rather technical discussion into a readable document most people could read in a vacuum and if they want further detail they can go to the thicker documentation and sometimes that's tough to really define it carefully. Thank you. Yes, ma'am?

MS. MYERS: Nancy Myers. What's your target date for your RFP for the next stage?

MR. TENERELLA: Public comment period ends on June 15th. We would figure our record of decision being signed by our regional administrator sometime in the summer. We would then turn around, after the ROD is signed, and issue orders to the Corps of Engineers probably, I couldn't guarantee who'll get it, it either goes to the Corps of Engineers or direct contractors that we have and we have sort of pre-placed contracts or we have contractors that are ready to go that have been pre-certified to EPA and the Corps operates in a similar fashion who would be

ready to do the design and nationally it is a problem in terms of work distribution in terms of getting contractors who have the stuff available because there is a lot of this going on but we put it into a design queue and usually again on a project of this size probably the Corps of Engineers will get it. They'll issue an RFP probably, they'll probably go to one of their pre-awarded contractors and start design. That usually happens a few months later. We have preliminary meetings with the Corps, we have to get them very familiar with the site. In fact what we do even during this part of our process is they get the feasibility study and the remedial investigation now so they can start getting a sense of it, start putting some of their project people on it so they get a sense of the scale themselves. It is competitive at the point and it depends on the project, on the project size and it depends on the technologies we use whether they have to go out with a contract bid award for this contract or whether they can use a pre-placement contract. I am really not sure

on the details, on the bidding process, when one triggers the other.

MS. MYERS: I have another question. I think there's a New Jersey DEP guy here.

MR. TENERELLA: Yes.

MS. MYERS: Maybe this question is for him. If I have an applicable ECRA site and there's acknowledged ground water contamination from this landfill and I am going to sell an industrial property, can I get a negative declaration even though there's ground water contamination

DEP REPRESENTATIVE: The ECRA program is really a different program. You would have to contact the ECRA program directly.

MR. TENERELLA: You probably have to talk to the hazardous waste people in DEP, the ECRA part of their program. Do you have a number or something to give him later?

DEP REPRESENTATIVE: Yes.

MR. TENERELLA: Yes, sir?

THE SPEAKER: A little comment this time. Have you given any thought to buyer remediation at all. Apparently some of the latest thinking is it is a very effective

means of cleaning up heavy metals. There is a big article in Business Week. You should certainly investigate it.

MR. TENERELLA: The things I have done with buyer remediation have been mostly surface soil removal, not ground water. We haven't really looked at it here.

THE SPEAKER: Maybe you should look at it. Maybe some of those techniques could be utilized to clean up this.

MR. TENERELLA: The kind of things we are talking about with buyer remediation, there's a certain sort of analogy to be made how we are treating the ground water and treatment plant as to opposed to how we are treating soils with a biological agent. It is sort of a rough analogy. But in terms of what you really mean when you say buyer remediation, it is usually with soils and surface sludges, things like that.

THE SPEAKER: If you read the article in Business Week, there might be some thought to this.

MR. TENERELLA: In use in ground water, for use in ground water remediation?

THE SPEAKER: Different things.

MR. TENERELLA: We will take a look. We do have a program.

THE SPEAKER: June 4 issue of Business Week. There may be something in there.

MR. TENERELLA: We have a special staff that works on innovative technologies, so as we do each site remediation--

THE SPEAKER: You may discover after you put in all these wells and all these papers and dig up the neighborhood and destroyed the values of all the land on there, there is a simpler way.

MR. TENERELLA: That's why we are out for public comment now. If you feel there's an option we haven't looked at properly you should comment that way.

THE SPEAKER: There are three land owners right over here and I can just see more thousands of trucks running up Taylor's Lane.

MR. TENERELLA: That's why we have a public comment period. We want to hear from people if they feel there's something we haven't really looked at that would be a seriously useful technology that's useful at

this particular site. Our experiences in those sites is most people locally don't have the kind of expertise needed to make that kind of judgment but we are open to any suggestion that might work.

THE SPEAKER: Early on when you put on your outlines you talked about the slurry pits and the underground storage tanks and listed, I guess, other agencies that are involved in those. Do you know anything though about what those agencies might be doing and whether or not they'll be doing work while you are doing this? I would like to know what will be going on in the site to address those.

MR. TENERELLA: Just some examples would be underground storage tanks are regulated under a program called the CUST program and are regulated in New Jersey by DEP. Tanks that are found to be leaking have to be removed and replaced statewide whether it is a hazardous waste site or not. That's separate from the superfund legislation and because it is superfund, does not supercede any other federal or state regulation or legislation unless it has to. So other legislation is how

you work, you work with that. If there are sludge issues that relate to say the federal or state clean water acts, those regulations under the clean water act legislation might be used as our regulatory tool to control [illegible] discharge and that's what we mean in the [illegible] simplistic language we use about using other authorities from other regulatory entities. Most likely most of that would be in this case through the New Jersey DEP. There might be some local regulations at times that might also come into play just circumstantially and as we see a given source, specific source and we define it and we define how it is impacting the problem, we can define which act triggers. When we don't have a specific act to trigger we can fall back on superfund and use the superfund authorities to take action against given owners.

THE SPEAKER: I thought you had mentioned in the brief report, and I don't have it with me, that those, where there are problem areas at the site and I was wondering if they are being addressed then by New Jersey DEP and do you know anything about it?

MR. TENERELLA: We work coopeatively with DEP. In fact, in some cases DEP in other sites takes the lead for us to do superfund clean up work but they do the oversight for us. So we have a very interactive relationship with the Department and its personnel who work with us and through the hazardous waste people in DEP we network into the rest of DEP for other regulatory controls. That is how we work that process. Also another side of superfund is its regulatory side. It is certainly a clean up through funding mechanism. Superfund also has options. Superfund is also used to clean up spills on an emergency basis as we have authority to do that and that can be triggered when we need to. We also have authorities to take legal action when needed. Those are the kinds of things I mentioned before, when we are developing a particular enforcement strategy on what we consider to be potential polluters we may not be as public initially as to what our plans are until we go through the legal process and you would know about it later. Those are the kind of strategies we

use to capture everything.

THE SPEAKER: Since you are concerned with underground water contamination what would be your druthers, to have tanks under the ground or have tanks above the ground tight and contained? This is an unofficial gut reaction.

MR. TENERELLA: I am not really familiar with the CUST program but I think that's their preference that tanks to be above ground where they can be examined and expected and, where possible, diked so if you have a spill it is contained again as opposed to underground where if the tank rots out you don't know what's happening and one gasoline station can contaminate an entire acquifer.

THE SPEAKER: My name is Walt Drommel public health coordinator with the Burlington County Health Department. I would like to touch on several items if I may. Earlier one gentleman spoke of Swedes Lake and a question was raised by the mayor hoping we would be able to assist him with some questioning he had about his water. I think you addressed you felt it was no tie in with regard to the

sanitary landfill or the ground water situation and the problem he addressed. We will be happy to follow up on that with the Division of Water Resources. As soon as the meeting is over I will get the gentleman's name and turn it over to our specialist in this area. We will be able to check with Division of Water Resources if we have any further question and then perhaps do some sampling as well. Now, back to the ground water contamination study per se, since we are in a recharge zone and since a number of us are aware of the very preciousness of the acquifer as the major water supply in this and much of south Jersey, it is absolutely essential, and I would like this to be on the record, from our opinion locally, that any particular point source of contamination that is identified, such as this particular ground water site in Cinnaminson, should have the highest priority even though we recognize that it's not contaminating any water sources that we use for drinking purposes currently. There is that potential in the future that given enough years and given enough drawdown on this

very precious water supply by as much of South Jersey that utilizes it, we can't have complacency now. I just want to touch on that as I think a major point. By all means continue with your great task. We look forward to a good and effective clean [illegible] because we want to have this as a water supply fifty and a hundred years from now long after we are all gone for those in the future. In connection with the grand pipe scheme, the sixty inch pipe and drawdown on water from a surface source such as the Delaware River as an alternative because our ground water source is not plentiful enough for future years, I really see it that much more important that we do not only that but address all particular point sources of it. We will need the ground sources as well as that river for a potable water supply for many years to come. My next point is a question. It is somewhat of a technical nature. It has to do with the sanitary landfill property itself, the central area of concern, and the steps that are taken in order to mimimize that source of further contamination getting into the ground water

even though the plume is fairly well contained in immediate proximity to the site and even though we are intending to spend many millions of dollars and should do that still. We want to be satisfied that we are doing it as efficient and effective a job as possible by doing as much control on the site with the leechae as a companion operation in connection with whatever else you are doing through the extraction wells and clean up of the contamination of the ground water in that general area. I would like to hear a little more about that. I am a little confused too about how the particular aspect of the initial focus, the site itself, and how that clean up will be handled to minimize the amount of contamination getting into the plume that you are dealing with in your clean up.

MR. TENERELLA: In terms of your first comments, yes, thank you and we want to make it clear to people we don't want to have people misconstrue that what we are dealing with here is potential problems not actual problems. In some sites we are dealing with actual problems, surface contamination

contact, things of that nature. We are dealing with a potential problem and the acquifers are important in New Jersey and that's why we are here. In terms of issues like SLI Landfill and how that integrates to our program, as I said before, where there's another piece of enabling legislation either state or federal that allows us to remediate something, stop pollution, we use that as our legal mechanism to stop the pollution. In the case of SLI Landfill that's a closed landfill. That's already been closed since the time of the initiation of our investigation with a solid waste cap under the direction of the State DEP and which as part of that closure has a variety of monitoring wells and reporting that data back to DEP. It isn't that they can just monitor and let them know if you have a problem. The data that we got during our investigation then we used that monitoring data as part of our data package and since the landfill cap just went on fairly recently, only a couple years ago, during our feasibility study assessments we made that determination that we shouldn't close off

completely for now what kind of options we may want to have on further activity on the cap. The solid waste cap may be just fine and the efficiency is fine in terms of what we want to do with the ground water and if we are comfortable with that in a couple years, fine, that's what it would say, no further action. If we are uncomfortable with that we have left an option here if we feel the need for further work at the landfill.

THE SPEAKER: Which could include initiation of an extensive leechae treatment operation because there are juices underneath that clay and cap.

MR. TENERELLA: I suppose so. Two things. If in this case structurally or strategically, since we know the landfill is there and we know it's a principle potential problem, we know it's a principle problem in the area, and it's the largest in scale, we want to take a pause and instead of making that decision in one ROD, one record of decision, now and hold off and do another operable unit just to make sure. It is just a strategy we took. Another option we could

have taken was sign a ROD with a no decision and then in three years if we found we had great difficulty with the landfill, it was screwing up our ground water systems, we could the ROD because that's something the agency can do also.

THE SPEAKER: I don't know if there's infiltration there. I think it is constant to the depth.

MR. TENERELLA: Into the landfill or exfiltration?

THE SPEAKER: It is in the water.

MR. TENERELLA: And that's the purpose of the pump and treat scheme, to get that to a point where you have flushed the acquifer, that's clean, and you are not getting the mobility, you are not getting the kind of mobility of the contaminants you are getting today.

THE SPEAKER: I just wonder how many of the contaminants can get out.

MR. TENERELLA: There's a concern that the kind of technologies we are proposing, while they are the best we have to offer today, may not be the best solutions tomorrow.

twenty years from now. What we are doing at hazardous waste sites today in 1990 and what we did in the early '80's is already ninth hand day. Just as technology develops further and we have better solutions for problems that we don't have today. Unfortunately we can't wait twenty years. We have to go with what we have today. It will be easy to Monday morning quarterback us in 15 years. We have to do something now.

THE SPEAKER: I think what the gentleman was trying to say and it kind of concerns me is he feels that the quarry operation penetrated the acquifer.

MR. COMBS: It did.

THE SPEAKER: You said it was two hundred ninety one feet to the bottom of the acquifer, I don't know where the top is. The top is somewhat higher.

MR. MARINO: That's a depth of our well at New Albany Road. It slopes upwards as it goes towards the river and outcrops in Pennsylvania. On Taylors farm down there you may hit bedrock at fifty, fifty-five feet. So it is sloping upwards.

THE SPEAKER: I think the concern, what the gentleman was saying is you have water flowing through the trash that was dumped in there, not just seepage.

MR. TENERELLA: Ken Willis is one of our specialists in EPA. In fact he used to be the site manager here. He's a ground water expert for us.

MR. WILLIS: The levels of contamination that were detected in the older part of the landfill where they did put it below the water table were lower than the newer parts of the landfill. So in effect over the last thirty or forty years, however long it's been, this trash has been sitting there, it has been flushed and much of the contamination has been removed already. As when the extraction system is in place, the water will also because you are going to be drawing the water out which will bring the level of the garbage that was then dumped down in there below the water table. So it will take it out of that system. It is pumped in down grade.

THE SPEAKER: Richard Strobel, Cinnaminson. I was wondering if you can

modify and adapt to keep in line with the new technologies as they develop. This is a thirty year project and as we get the new technology, state of the art changes, can you modify and adapt or are you fixed once you give your ROD with the cost and the plan that you are going to implement?

MR. TENERELLA: I sort of have two reactions to that. Just based on personal observation of how we are operating superfund to date. Any ROD that was signed, any record of decision in the early days, the early '80's before the 1986 revision to superfund which massively changed the program, any ROD prior to that date has not been changed. We are sticking with the ROD's as the agency decided. That's it. That's the decision that was made. Pre-existing '86 we are sticking with them. Technology has changed in that period of time but the early ROD's have not been changed. Since '86, again now technology, in 1991 as we get into another reauthorization cycle we may have some new mechanisms that we use because of congressional mandate at that time with the new superfund in 1991 to do things differently

based on public pressure to Congress that maybe they feel there's a change that is needed to keep up with technology. The one thing that would trigger a change in a ROD would be something is not working over the course of the years that we would reopen a ROD. We haven't known that to happen yet but we are relatively new in the process. The sites that are being actually in construction now are sites we were studying in the early '80's. It is early, relatively early in the process to make a determination as to whether there will be a lot of ROD's that perhaps might need reopening. It is really early to tell whether we will have some structural ability to do that.

THE SPEAKER: Did I understand your comment correctly, this is the first kind of contamination of this sort you have been dealing with, this kind of ground water contamination, you haven't dealt with this particular type before?

MR. TENERELLA: No. I don't remember saying something like that.

THE SPEAKER: You indicated that [illegible]

Canal and things you have done before were easy, this is tough.

MR. TENERELLA: In the early days of superfund the projects that we had to work with, the sites that we saw in the early were major landfills mostly or they were dump sites, abandoned dump sites that perhaps somebody wasn't in and opened up the dump and just dumped drums and drums of material loose in the middle of no place, covered it over and walked away. Love Canal was that kind of situation. In fact if you look at it in a different perspective, the company involved there thought maybe they were being environmentally sensitive by dumping their waste in Niagra Falls. It was an open pit that was never used as a canal. They bought it, they dumped waste in it and covered it over and then sold it to the city. That was sort of the choice. It turned out to be a big mistake to do that. When Love Canal triggered superfund everyone was looking at that kind of situation initially, I bet we have other landfills like that. In fact, right in Niagra Falls right away we found three other

landfills that were similarly designed, dump the chemicals, cover it over and walk away. So that became the center of our activity in the early days. That's where we invented community relations as we do it in superfund because the community up there needed to be involved with us and that's where the early technologies started to develop where we talked about caps and leechae collection systems and ground water monitoring systems. In fact, at that time, we weren't even talking about ground water flush and treat systems. In the early days that's what we were looking at in terms of what a superfund site was to a lot of people. As we looked at sites nationally after we opened up the superfund and said, let's go look, we found sites with a variety of contaminants and variety of situations and suddenly we needed a variety of technologies and a whole different set of systems to deal with these sites, many of which turned out to be these ground water flush systems. We have a lot of those in Jersey now, a number of them in the pinelands that will be operating again for thirty years

to try and purge the pinelands and get that back to a pristine condition. In New Jersey that's a relatively common technology. What I am saying was that's now new here but new compared to the early days of superfund when that was not the kind of technology we were looking at for any site.

THE SPEAKER: How much of the acquifer is going to be treated? It's a big acquifer isn't it?

MR. TENERELLA: In area you mean?

THE SPEAKER: Area, volume.

MR. MORAN: Again, this deep extraction system here will catch all the ground water flowing from this area here, all the contaminated ground water was captured.

THE SPEAKER: He's asking what's the estimated volume at that point of the acquifer that your going to be recycling.

MR. MARINO: You are looking at about a million and a half gallons a day that's going to be recycled and put back into the ground, three hundred sixty five days a year for thirty years. If someone wants to run that out on a calendar--

THE SPEAKER: How many wells for the thirty year acquifer?

MR. MORAN: Seven wells.

THE SPEAKER: Are we only talking about that one treatment plant at the bottom of your chart?

MR. MORAN: Right.

THE SPEAKER: That will cover both the perched zone and regional acquifer?

MR. MARINO: That's the total combined for all wells into one plant.

THE SPEAKER: The other question I have is the information on cancer deaths on page four, how was that information derived?

MR. MORAN: Very conservative estimate based on a person living there for seven years drinking a certain amount of water every day and it is calculated against the cancer risk from a certain level of compounds.

THE SPEAKER: You don't anticipate this actually happening?

MR. MORAN: The water has not been used to drink.

THE SPEAKER: None of that water is in a water supply?

MR. TENERELLA: It is a potential risk that we have to establish before we spend superfund money. If we can't establish a health risk or risk to the environment, the natural environment, we can't spend money, but the risks here are associated with people, I say, drinking from the perched zones which they don't but if they did, that would be the risk.

THE SPEAKER: So there is no risk.

MR. TENERELLA: At the moment there is a potential risk so we want to take the action.

THE SPEAKER: If you know there's a potential risk and they're putting these aquaducts along from the Delaware River, that takes care of the problem. I don't understand the logic. The whole thing is beyond my ability to comprehend.

MR. TENERELLA: Perhaps unlike government which usually deals in a short term as opposed to a long term view of things, these superfund things are looking at generations.

THE SPEAKER: He has a long term solution?

MR. MARINO: The sizing of the plant is

crucial here. We are looking at starting off this treatment plant at thirty million gallons a day and that's with the assumption that all the wells in Cinnaminson remain free of contamination. If those wells get contaminated, and Bob this may be where the confusion comes in, at thirty MGD, if no water, if the water in Cinnaminson, the wells, get contaminated and like the two wells we have in New Albany Road you are looking at two million gallons out of there, Pomona Road station there is another two million gallons there. We have to take all those amounts and add them up and then I have to increase the capacity of your plant. It's not like there's a capacity of that plant automatically goes up from thirty to fifty MGD with no expense. It is either we will incur an expense to increase the size of our plant to cover these contaminated wells or they spend federal dollars to remediate this area. So we build a thirty MGD plant and continue using our wells. You have to look at the economics of it as well.

THE SPEAKER: But there's two aqueducts

The contingency is already there for two aquaducts. The easements I gave you that's what it indicated.

MR. MARINO: One's taking water from the river and one's pumping it away. The whole concept is the amount of water the plant will produce and that's based on where the completed water is going. If there's more completion in Cinnaminson then there's a dollar amount fixed to it.

THE SPEAKER: The taxpayer will pay for it one way or another. Either way it's going to be on our backs.

MR. MARINO: The customers of New Jersey American Water Company can consider going to pay for the increase in the plant or everybody in the United States is going to help pay for the clean up of this landfill. There's a bigger tax base there with the people of the United States.

MAYOR ELEUTERI: I have a question for you. How often does the water company test the wells?

MR. MARINO: We have a routine monitoring program that exceeds what's required -- For

ground water sources it is required the samples be collected once every three years because of the protected nature of ground water sources. However, because of the location of the landfill and the impending problems, we have a monthly monitoring program that we sample all our wells in this vicinity to maintain a close tight net on any contamination that could possibly enter our wells and at very extreme levels, point five parts per billion is our detection limits. So we have a fine tight net on it looking for any contamination of our wells. That's over and above what's required.

MAYOR ELEUTRI: Do you file your reports with any State agency?

MR. MARINO: We are required under the Safe Drinking Water Act, especially with the A280 parameters, the hazardous compounds, a lot of the ones you see here, we are required to submit reports to the DEP.

MAYOR ELEUTRI: You do this on a monthly basis?

MR. MARINO: Those reports are only required twice a year. We do all this

monitoring on our own so that I can stand here at meetings like this and tell our customers that they don't have anything to worry about. Without doing that monitoring you can't do that.

MR. TENERELLA: Any other questions? Yes, ma'am?

THE SPEAKER: The budget to pay for all this, it is worked out and you know where the money is coming from? Are you going to be waiting for reallocation? Where does the money come from?

MR. TENERELLA: It is two ways we fund a superfund project. One is through the superfund where we have a fund on petrol-chemical product and tax revenues that Congress gives us in these appropriations a certain amount of money in every cycle. By the time you go to construction at Cinnaminson here we will be in the next appropriations cycle. Congress does an interesting thing. First they approve money, they appropriate money but then they only authorize so much per year after that. We have to work under those guidelines every year. It is Congress that

tells us how much money we are going to spend. It is Congress that tells us how we are going to run the superfund program and it is the public that tells Congress this is what they want. If the public didn't want superfund at this rate we wouldn't have it. But Congress seems to be reacting to strong public opinion that superfund sites should be cleaned up at the expense, whatever that might be, and other people would say something else is more important, whether it is homeless problems or dealing with restricting smoking or defense projects or whatever but all that aside, Congress tells us, here's how much we want you to spend and/or here is the structure, the legal structure we want you to use to get other people to pay and the other people who we would look to to pay would be those who we feel are liable for the clean up because of past actions, whether they were an owner of the facility or someone who dumped there or whatever and those are what we call potentially responsible parties and we have a series of those people who we feel might be involved at the site and we would work with

them to to see what kind of participation they might have in the clean up and there are various ways in which we would oversee a clean up using those mechanisms.

THE SPEAKER: Do you have an estimate what you will spend thus far?

MR. TENERELLA: About two million so far which is about average, a little high maybe. The clean up projected right now is about twenty million dollars and that's about the national average. To give you some other perspective, we had another ground water clean up in the pinelands with a record of decision signed a couple of weeks ago that's going to cost a hundred and forty-two million dollars for the clean up. So these ground water pump and treat can get very expensive.

THE SPEAKER: I think you ought to realize the Delaware River is not an unexhaustable supply of water and maybe somebody out to describe to them the size of the Raritan Formation and how much is used for the Raritan water supply.

MR. TENERELLA: I think you just said it all for us but the State of New Jersey when

we do some of these criteria are listed in a proposed plan. How we determine which of the alternatives are the most available in terms of things like compliance with something called ARARS which is another acronym for all kinds of other regulations either federal or state. One of the primary regulations in the State of New Jersey that's of concern to the State that must be complied with at the superfund site with ground water problems, if you have an acquifer and it is a large acquifer you better turn that back into drinking water as close as you can get to it technically and that's a mandate that Jersey has and we then deal with that and we design our superfund clean ups with that in mind.

THE SPEAKER: Another question occurred. You say you go until '91, you are funded until then and then you will get funded for another period of time until maybe '96 or something. You have a thirty year project. Let's say you get funded in '91 to '96 and forevermore, never again, they pull the plug on the pumps what?

MR. TENERELLA: What a great question.

with no answer. If you project out the number of sites that we have nationally and if you estimate, which is something on the order of almost two thousand I think now, and if you suggested that the average clean up runs twenty million, and every once in a while you get a wierdo that goes for a hundred and forty, and you break that fund out, you are talking about billions and billions and billions of dollars present worth. What is the reality of commitment over the thirty year period of time? It's not there in the legislation. It is there every five years with a Congressional appropriation.

THE SPEAKER: You don't put the twenty billion in a trust fund or something like that?

MR. TENERELLA: It doesn't work real well when you do that in terms of national budget consideration. Superfund is an expensive program. Millions and millions of dollars and in terms of other social programs it is quite overwhelming in terms of the amount of money involved. On the other hand, in terms of defense allocations nationally, it balances

out a little bit in terms of protecting the environment. It is another Congressional call. They feel that's the amount they want to give us in a given five year period. If the public screams we should get more, we will get more and if the public screams you're crazy, that's too much, the program will shift in that direction.

THE SPEAKER: Have you cleaned any of them up at all? Has anything really been cleaned up to the point where you can say you have done a good job?

MR. TENERELLA: Going back to the Love Canal experience again, the citizens of that area have been under the gun on superfund since 1980 and have been under a lot of stress. Love Canal as a site is stablized. The cap has been on for a number of years. This is a clay and plastic cover on both the canal area and a variety of homes around the canal that were demolished and incorporated into this big cap. There were streams going into the area that had contaminants in them. The streams were remediated. It's canal has a permanent leechae collection system around it.

and that leechae is collected and treated at the treatment facility just off site at Love Canal and the leechae from the plant is sent off to the City's treatment plant at Niagra Falls. That's all been done and in fact recently, after many years of study and restudy, the decisions were made by EPA that the area surrounding the canal is habitable. People were concerned about houses in the surrounding area and I was involved in that. It took about five years just to determine, is that really so. That is now going to take place. So the areas now has been revitalized back as a neighborhood. Is that a clean up? I think the answer there would be yes. However legally, the agency doesn't consider that as being a final clean up yet and they have not delisted the site yet. We have these five year reviews to make sure things are working properly and the de-listing procedure is more complicated than just saying, okay it is finished, walk away. We want to certify that the site is environmentally safe and certainly safe to the public before we walk.

THE SPEAKER: You feel in thirty years

you will have cleaned up this potential hazard to the point there will be no further hazard here?

MR. TENERELLA: We would certainly [illegible] so and I always have to caveat on the fact that ground water pump and treat schemes, in terms of the nuances, the very low concentrations of chemicals hopefully will be reached but we can't prove it yet because we have never done it. We just have to live with that because that's the limit on our technology right now and our knowledge.

THE SPEAKER: Joe Lobiski, Cinnaminson. You say twenty million dollars, estimated. That's the thirty year?

MR. TENERELLA: Everything, present worth.

THE SPEAKER: Once that is applied for, once it is approved and once it is funded, the entire twenty million dollars is appropriated and budgted? It comes out of the funds?

MR. TENERELLA: Yes.

THE SPEAKER: I think you are deceiving people here about pulling the plug. Once it is funded, the funds are there to complete the

entire thirty years capital construction operation and maintenance, correct, for a thirty year cycle?

MR. TENERELLA: Right.

THE SPEAKER: There's no pulling the thing after ten years? It is encumbered? In a construction project, it is encumbered, correct?

MR. TENERELLA: I am trying to think of the exact language.

THE SPEAKER: And if the program includes operation and maintenance for a certain period of time, so when you go in for the appropriation--

MR. TENERELLA: Let me add something to that. The capital construction costs are born by EPA.

THE SPEAKER: How many dollars is that? Whatever, but it is less than twenty?

MR. TENERELLA: Yes. The first year O&M costs, EPA is charged with. The State of New Jersey has a commitment too for ten precent match on that. So in terms of that inter-relationship between EPA and the State there's a financial match that's involved if

it is funded by the superfund and not by private parties.

THE SPEAKER: But they also would [illegible] the same way.

MR. TENERELLA: Yes. First for the design. The design is the next thing that gets funded and after the design, the construction. When the construction is funded, the construction money is normally in a block of funds for construction, not O&M. See capital construction is funded but the O&M is not.

THE SPEAKER: The O&M, if you are estimating thirty years, when the O&M portion is funded will it be for the thirty years or has it been like the ones that are started?

MR. TENERELLA: O&M costs consider covered overtime and become a State funded issue for O&M.

THE SPEAKER: You said the State only matches ten percent?

MR. TENERELLA: On construction.

THE SPEAKER: If this is eight million we give you ten percent?

MR. TENERELLA: In fact they give it to

us on the design. They'll do a ten percent match on design, ten percent match on construction capital cost and first year O&M and then it goes to a cycle of operation and maintenance where the State takes over the cost which is another reason that all costs for superfund, it is normally in most sites, the O&M costs are not the big expense. It is capital construction costs. In every ROD, every record of decision we sign we cannot sign the record of decision until the State concurs with it. The Commissioner of the State has to concur with the record of decision document before it is even signed by our regional administrator. So there's a totally integrated relationship between the State and the federal government.

THE SPEAKER: That's fine.

MR. TENERELLA: At that time we will have the '91 appropriation settlement. The money would be allocated off that block. That would probably be the appropriation which would get you your immediate capital construction costs in a block sum committed off that appropriation.

THE SPEAKER: Now we are going back to Ray's question about pulling the plug [illegible] State aspect. So when they signed on [illegible] initial before the ROD, they didn't sign [illegible] for after the preliminary?

MR. TENERELLA: I would assume that [illegible] reality would be they would have the same kind of appropriations issues over the long term.

THE SPEAKER: I am confused. I was going to say it doesn't matter. Maybe you can explain one thing to me. Estimated present worth, I kind of thought that was the total of what it was going to cost. The numbers kind of confuse me. If you take seven hundred fifty one thousand times thirty it comes out to twenty-two five, twenty two and a half and you throw in the eight point three that comes out to thirty point eight and you are saying it is twenty-two.

MR. MORAN: With the five percent discount over thirty years.

MR. TENERELLA: I am afraid I don't know it either and I had to have it explained to me because when you start discounting overtime the costs start really dropping and I forget

the rates they used. I forget the percentages they used to project. I don't know the details of how you get to that in terms of -- There's a formula in which you discount -- You have things in the back. Another thing to be aware of, when you see these costs, these costs are not used for projecting specific costs when we get to say a design. These are used only generally for the decision process. Cost is not a principle variable in which decision we make. We don't go for the low cost because that's what we get. We do these estimates because a lot of times, as you see here, you might get technological issues where you can go with this technology or another one and you will see some savings and I have to give you another example. It is Woodlands, which is this hundred and forty-two million dollar clean up. It had a technology based option that saved twenty million dollars. It was sort of splitting hairs a little bit but there was one where there was a bit of a cost savings and still get the technology. You can choose those options. We use these cost estimates for those kind of decision making.

But they're not the absolute drop dead cost. What happens is we go to design and we get the contractors award bids and all of that kind and the Corps comes back with an exact cost figure and we go back to headquarters and we get that money and with a ten percent match from the State. We go to construction, we get an exact figure at construction time, ten percent match from the State and then we go to O&M and we haven't gotten into big O&M cost, we haven't gotten into the experience of it, either us or the State, in terms of big bucks. What I have heard under discussion just generally, because again it is something that hasn't happened in the program long term yet, is if it is fund related O&M costs and O&M procedurally is how do you do that, chances are we will see companies start being formed to provide that kind of service and that's the kind of contract relationships that will have to be incurred as an O&M cost overtime. Now that all recombines into newer technologies and different ways of doing things to the point where after awhile the discussion could get rather theoretical and it almost becomes

other than theoretical discussion at this level at the local level. That's the kind of thing they deal with in Washington.

THE SPEAKER: In reality if your estimates are right as to capital and all of that it is a thirty million dollar project not a twenty million dollar project. Thirty times three quarters of a million is twenty-two five approximately, throw on another eight for the capital.

MR. TENERELLA: No. Discounting really throws the figures out. I need to say this to this group in particular. I want to thank you for staying and the questions you have asked. I have been to a lot of site meetings before under the program and this audience was, the questions were just very intelligent and well phrased and the people just very knowledgable in this area. It was almost fun to be here and answer the questions relative to some other site meetings we go to. You were a very interesting audience and you people had some great questions. I am sorry I don't have great answers for some of them. Thank you.

(At which time the hearing was adjourned.)

I, GARY LONG, Notary Public of the State of New Jersey, do hereby certify that the foregoing is a true and accurate transcript of the above proceedings.

GARY LONG, NOTARY PUBLIC

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RICHARD A. MERLINO & ASSOCIATES
Certified Shorthand Reporters
7 Montague Avenue
Trenton, New Jersey 08628