RR/SF/BETTER BRITE COMBINED SUPERFUND/405011090 RPTS

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

BETTER BRITE CHROME AND ZINC SUPERFUND

PROPOSED CLEANUP PLAN

PUBLIC MEETING

THURSDAY, AUGUST 8, 1996

7:00 p.m.

DE PERE CITY HALL

DE PERE, WISCONSIN

PRESENT:

MARY YOUNG, Wisconsin Division of Health

TERRY EVANSON, DNR Project Manager

BOB STROUS, Environmental Repair Program

PAUL KOZOL, Engineering Resource Technical Advisor

MS. YOUNG: I think we will go ahead and get started. It sounds like the tape recorder is going. I want to welcome you tonight. It's a beautiful night outside, and I think the fact that you are here speaks to the fact that this is an important issue for you. And so we will try and give you the information that you need.

This meeting is being held for two reasons. One is that the DNR needs to satisfy certain requirements. They have to have a meeting before they undertake a cleanup, and they have to get your approval, essentially, for that cleanup. And tonight they are going to be presenting a cleanup plan that they think will work at the two sites and they will be asking for your comments, as well as -- how long will the comment period go?

MS. EVANSON: Well, as long as -- oh, you mean the end of the comment period. As long as August 26.

MS. YOUNG: So through August 26 they will be accepting public comments. As I mentioned that we also want to answer your questions, make sure that we are answering your questions tonight as well.

The questions that we will be prepared to

answer is what does the DNR believe is the best method for cleaning up the two sites. They will answer the question why they believe this is going to be the best method. They will also be -- or we will be discussing how we can assure that these methods will be protective for public health; we will be answering that question as well.

And I hope that they will be able to answer what happens if it doesn't or how will they know if it's not working and then what do you do.

Are there any questions that you came to have answered tonight that are on your -- that you can think of right now so we can make sure that we answer those?

MS. KONRATH: If they dig a ditch, where are they going to dig it.

MS. YOUNG: I'm sure that when you came here tonight you had expectations. Are there other questions that you wanted answered?

UNIDENTIFIED AUDIENCE MEMBER: The DePere well, is there any concern as far as the contaminants migrating any closer than they are to the DePere well or is that a non-issue?

UNIDENTIFIED AUDIENCE MEMBER: If you turn the whole place into concrete, what happens to the

surface runoff water.

MS. YOUNG: This is a little different from a normal public meeting in that this is a legal process and there is a court reporter here tonight. And so, after we have given presentations and we are at the point of accepting additional questions and concerns and comments, we would like for you to tell your name, or a name. If you don't want to tell your name you could make one up, I suppose. We want to be sure we have a name with a comment and so when it comes to that we will ask you to give a name.

And then, finally, I want to make sure that the people who want information get information, and I know as well as you do that there are some people who are not here tonight. If you know of people who have described concerns and they are not here because they -- maybe it's not convenient or maybe they didn't know about it or maybe they are not physically able to come to a meeting, I would really like to know who those people are so that we can make sure we make phone contact or call them and give them the information they need.

So, with that, I'm going to ask the people who are here to do presentations to introduce

themselves. And since I didn't introduce myself I'll start there. My name is Mary Young, and I'm not with the DNR, I'm with the Wisconsin Division of Health. We have been following this site, reviewing information and communicating with citizens for as long as the State has been involved with the Superfund process.

And, then, also on the agenda is Terry Evanson.

MS. EVANSON: I'm Terry Evanson, and I'm a hydrogeologist with the Department of Natural Resources, and I'm the project manager for the Better Brite site, and I'll be giving the presentation and the proposal for the cleanup tonight.

MS. YOUNG: Thank you. Bob?

MR. STROUS: My name is Bob Strous of the Environmental Repair Program of the State of Wisconsin associated with the Superfund Program. I'm not giving a presentation tonight, but if you have any questions of me I'll be happy to answer them.

MS. YOUNG: Paul?

MS. KOZOL: Good evening. I'm Paul Kozol. I'm the Engineering Resource Technical Advisor for

the project.

MS. YOUNG: There are other people here that might want to introduce themselves.

MS. ERDMANN: I'm Kathy Erdmann, and I'm with the Department here in Green Bay. I'm a hydrogeologist and I have been involved on the local level in working with transporting contaminants from one site to another where it's being treated.

MS. FASSBENDER: I'm Judy Fassbender. I'm also a hydrogeologist with Hydro-Search. I've been contacted by the Department of Natural Resources to help evaluate the alternatives for cleaning up the Better Brite site.

MS. YOUNG: Are there any representatives from DePere Health here tonight? Yes, sir.

MR. HOOYMAN: Jim Hooyman, Alderman District 3, and I'm just here to see -- stay on top of what's going on.

MS. YOUNG: Always good to know that the alderman is here.

Mr. COWLES: I'm state senator Bob Cowles. I'm simply monitoring things today.

MS. YOUNG: With that, Terry, would you like to describe what's going on here.

MS. EVANSON: As Mary said, we are happy

to be here tonight to present this recommendation really for the cleanup of the groundwater at the Better Brite zinc and chrome shops. And, as many of you know, in 1993 there was a major soil removal action that took place at both the Better Brite chrome and zinc shops. And I know I talked to people on the phone that said well, I thought that site was all finished. And what I am going to talk to you tonight about is that the chrome, which is the chrome-contaminated soil, the contamination was indeed, has indeed been removed, that there was still residual contamination in the groundwater surrounding both of those sites.

And that's what the focus of our discussion tonight is going to be about and the recommendations for the cleanup.

So the first thing I thought most of you are probably aware of is, but for those who aren't I thought we might just show you a map. We will see where our projector is projecting. The chrome and -- the zinc shop is located on South Sixth Street, while the chrome shop is located, actually, about a half mile south on Lande Street just off of Sixth Street here in DePere.

On both of those properties chrome-plating

was conducted at the zinc shop for almost twenty years, according to our records from the late 1960's until about 1989 and at the chrome shop from the mid-1970's until 1985.

There is a very long history associated with both of these locations, and I'm not going to actually review all of that history tonight, but the short version of it is that, while there was a significant amount of contamination both of surface soils and the deeper soils at these sites and there's been a number of soil removals where the soil was actually dug up and hauled away, and the main removal, as I said, in 1993 when -- these are at the chrome shop, which is the one south here on Lande Street.

When surficial excavation -- this is a close-up of the shop, there is a fence now around the chrome shop. But surficial soil was removed not only on the property but in surrounding properties, and then this blue sort of footprint I've drawn here, there was actual excavation.

MS. KONRATH: You said surrounding properties. I didn't see them take any out of my property. On any of the properties.

MS. EVANSON: I was going to say this may

not have all -- I know that there was surficial soil removal early in the '90's. That's what the records indicated, that garden soils and the like that was removed around the chrome shop.

MS. KONRATH: They were samples.

MS. EVANSON: There were samples. Okay.

MS. KONRATH: Little samples.

MS. EVANSON: But was there not -- according to our records, there was actually soil removed in gardens and places around the shop.

MS. KONRATH: They did do that once. They did that in '82 or something like that.

MR. KONRATH: He took the soil that he did and brought it over on his property and dumped it.

MS. KONRATH: But they did not take any soil when they were there in '93.

MR. KONRATH: There was nothing really removed. It was put over on the other property.

MS. EVANSON: Well, at any rate, like I said, according to the records that we have, the surficial soils were excavated in the area outlined here by this black line and then there was an excavation where the treatment building had been down to twenty feet where the soils were removed and a large excavation was placed in the ground and

backfilled -- pipes were laid at the bottom, backfilled with pea gravel, and essentially water -- and I'm going to show you a map of that in a minute -- now flows into that excavation and is removed.

And, similarly, at the zinc shop, at the zinc shop, here, the only soil removal was, in fact, on -- directly on the -- essentially under the footprint of the building that had been in place, so that the immediate soil down to twenty feet again was removed, plastic was placed in the very bottom, pipes were laid, pea gravel was filled up and a sump pump essentially, a very large one, was created in the excavation that was left.

Now, I wanted to talk a little bit about the question about the municipal well. The municipal well number two for DePere is located about twelve hundred feet or so from the zinc shop. And the investigation that we have done shows us that there is no deeper contamination of the soils. I'm going to get into in just a moment what our investigation shows as far as the depth of contamination.

But what we have found with the wells, and we've got a number of wells, there's little circles here placed around here (indicating), those

monitoring wells show that the contamination is really limited to about twenty feet beneath the surface in the groundwater and that the deeper water, that is, the water that's down in the bedrock and below that, does not show any chrome contamination.

And so we are not concerned about contamination moving toward the municipal well, because we don't see any contamination beneath the twenty-foot layer. And there is additional clay beneath that twenty feet. There is significant levels of about 170 feet from that, about thirty feet below ground to 170 feet below ground there is dolomite bedrock and then sandstone beneath that.

The municipal well here draws its water from about 760 feet beneath the ground, and I'm going to show you a cross-section in a moment of the geology. My main point in showing this picture right now is to show you the area where the excavation was performed in 1993.

The sump pumps -- and this is just sort of a little drawing I made here, so it's -- this is not to scale or anything like that. It's meant to help you understand how the sump pumps work.

So after the excavation at both sites

after soil was removed to twenty feet below ground, what happened was plastic was placed along the bottom and pipes were placed at intervals in the excavation. And then there was little pea gravel put in, a clay cap was placed over the entire excavation, and then a stand pipe, essentially it's like a big manhole, was placed in at both the chrome shop and the zinc shop.

And, by doing this, what happens is the water table -- and the water table we find to be about six to ten feet below the surface. The water table, naturally the water just naturally moves into what is now essentially an empty excavation. It's got all this pea gravel, but there is not any water in it.

And the water slowly fills up in this excavation, and about every two weeks a pumper truck, it's just a vacuum truck, they stick like a big hose down into this sump and it literally sucks the water out of this excavation, and that water is treated at a treatment plant. And I'm going to show you the pictures of that in a minute. At a treatment plant that's right now located on the chrome shop.

The water is treated, the chrome is

changed into a non-toxic form, the chrome itself ends up being sort of what we call a filter cake that's removed and disposed of. The water itself flows into the city sewer where it goes through the wastewater treatment plant in DePere. So essentially the water is treated twice.

I wanted you to understand sort of how this sump works, because we are going to talk in a little bit about how this controls the groundwater movement around the locations of both the zinc and the chrome shops. And after this I'm going to turn the slides on here.

Now, this looks kind of complicated, but it's meant to just give a little bit of information on how the treatment system works. And we're going to show you a couple of pictures.

Essentially, in our treatment building there are two very large tanks. One is a tank that simply stores the water that's collected out of the sumps, both at the zinc and the chrome shops. Now, at the zinc shop it's half a mile north, so that water has -- the water from the zinc shop is put into a tanker truck and hauled by tanker truck down to the treatment building, pumped into this tank.

When it's time to treat the water, the

water is pumped from the tank into the mixing tank, and a series of reagents or chemicals is added that treats the chrome and the water, pulls the chrome out of the water and then allows the water to be discharged to the sanitary sewer for additional treatment.

And I'm just going to show you some of the -- I'm going to show you what the inside looks like so you get an idea of the scale of this.

This is simply a picture of the treatment building from the outside, and it's about two stories high because of the large tanks inside. And here what you are looking at is actually what we call the filter press. After the treatment is done, we have really sort of a thick sludge that contains the chrome, and that -- the filter press squishes the sludge down so that we essentially get a very dry material and the water then, like I say, goes off to the sewer treatment plant.

Now, here, if I go back, you can just see in the back this large tank, and that's going to be the treatment tank.

And this is a little bit closer up view of the treatment tank, and I think the next one has, yeah, a person here for scale so you can see these

are very large tanks. They hold oh, six thousand gallons of liquid at a time, so they are quite large.

And this is simply a close-up of the filter press, and you can see down here there is little dry -- that's why it's called a filter thing, it's just the dry pressings that actually contains now the chrome-contaminated sludge in a dry form that can be disposed of, and that's disposed of as hazardous waste. It's removed and treated again.

Now, I wanted to talk just a little bit about the remedial investigation. The Better Brite Zinc and Chrome Shops were placed on what we call the National Priority List; that is, they officially became Superfund sites in August of 1990. This overhead just gives a little bit of the idea of the geology at both of these sites, and essentially to approximately thirty feet beneath both sites we have clay soils. Now, the clay soils is what we would say impermeable. That means that they admit water through them quite slowly. The water movement in the clay soils is fairly slow.

Beneath that for about 140 feet we have dolomite bedrock. Now, the dolomite really doesn't produce a lot of water; and in this area it's really

the deeper sandstone that produces most of the water for the municipal systems. And in DePere, that DePere well that we pointed out previously, actually draws its water from about 765 feet beneath the ground, which is on the scale of this map is this lower green line here.

We have wells that are at the bottom of the clay, at that thirty-foot deep level, and then we've got wells that we have nested, that means that we have put in several at different depths in the dolomite. And what we've found is that there is no chrome contamination in the dolomite, and even in the deeper clay soils there is no chrome contamination. We find it only in our shallow wells, which is above the twenty-foot mark in the clay soils.

So that's very good news, because what that means is the contamination really is contained to just the surficial sediments, the surficial clays, and we have not seen deeper migration such that it would threaten the local water supply, for instance.

Now, the primary contaminants that we see, the primary contaminant that we see at both sites, both the chrome and the zinc shop, is chromium. And

I know a lot of people say well, the zinc shop should have zinc, and while we do find some zinc the main contaminant that we have to be worried about and concerned with from a public health standpoint is chromium contamination.

What I am going to show you now is the groundwater flow in the immediate vicinity of the chrome shop and then I'm going to talk about the extent of contamination at the chrome shop. So here we are again.

Now, this area, this most innerlying, is that same area I showed you before where the excavation was done to twenty feet and where the sump pump exists. And what these very narrow space lines indicate is actually what we call a water table map; in other words, what does the water inside the ground look like, what's its height. And it turns out that, just as you know on surface water, groundwater tends to flow down to the lowest point, water flows downhill; and it's true for groundwater, in general, also.

So what this shows is that water moves from the outer areas and moves in toward the sump. Just as we had showed you on that cross-section area, the water flows toward the sump, because,

essentially, there is very little water in a sump, we just keep pumping it out, and the higher water on the outside moves into it.

At the chrome shop, the water through all of this area is actually moving into the sump, but what we find is pretty much right about the property line and where we have this green line drawn, that this is what we call a divide, which means that the water beyond that point, particularly to the west and in this corner down here in this southwest, the water there is actually continuing to move to the west rather than being -- than actually moving toward the sump this water is actually moving still toward the west.

The reason that's important is the extent of groundwater contamination. I'm going to move this, I'm going to overlay these in a minute here. The extent of groundwater contamination that we see at the chrome site is indicated by this dark line here (indicating).

So we've placed wells throughout the area, and all of these little round circles indicate where the wells are. And so the groundwater contamination, where we find chromium in those shallow soils to twenty feet, is indicated by this

black line. And it turns out that it's about a half acre, three-quarters of an acre area.

When I overlay this -- and we are going to see if we can do this without making your eyes go buggy here. That's pretty close. What this shows is that, while most of the groundwater contamination is flowing into the sump, this area to the west where we see groundwater contamination is not actually being captured by the sump; that is, it's still moving to the west rather than we want it to go east into the sump.

So at the chrome shop our investigation has told us that this western area of groundwater contamination is not being controlled by the existing sump. And so that this is one of the issues that we have to address in our remediation, is we want to make sure that we can control that western edge of the groundwater flow.

And what may make sense here is I'll talk to you about a couple of -- what we've done is we've looked at various options for controlling the groundwater flow, and one of the options that we've looked at would be the placement of the trench. So we want to know where would the hundred-foot trench be placed.

Well, that trench -- I didn't mean to -- we've got another map of this, and I didn't make it, I didn't make an overhead of it, but that trench would be placed right about in this area (indicating). Is that right, Judy? That's about where it would be placed. The trench would be placed out here to control this western area of groundwater that's not being captured at this time. That's one of the options that we have considered, and that would be a possible option for dealing with the groundwater contamination here.

I'm going to come back in a minute and talk about the option that we are going to recommend. And the option we are recommending is not to place this trench here but to come and actually treat this groundwater down in the ground where it is now. So that it would be treated in essentially the clean-up that we would no longer have hexavalent chromium moving within the aquifer at all. And we are going to come back to that in a few minutes.

At the zinc shop, and this is the same concept, what we've got here now is the groundwater flow, where is the groundwater moving around the zinc shop. And at the zinc shop what we see is the

groundwater, this groundwater divide that we saw that was very close at the chromium shop, very close to the property. At the zinc shop it's actually out here (indicating), across -- this is South Sixth Street. It's actually out here west of South Sixth Street.

And so all of the water essentially from South Sixth Street from the north, the east and south we find is all flowing in toward this groundwater sump. And instead of groundwater contamination at the zinc shop, it's actually considerably larger, a considerably larger area than what we see at the chrome shop. And probably the reason for this is that, first, they operated for a longer period of time; and, secondly, that the soils themselves may essentially allow more flow of water through them than we see at the chrome shop.

The important -- so what we see is, like I say, a more extensive groundwater contamination, but it turns out that -- and this doesn't overlay quite as well because they are not quite at the same -- these aren't quite at the same scale. But it turns out that the area of groundwater contamination, which is here (indicating), is, in fact, all being captured by the sump; that is, we don't see at the

chrome shop where we saw an area of groundwater contamination that's not being captured here.

In fact, all of the area of groundwater contamination is flowing into the sump and being captured. And what that means is -- I wanted to explain a little bit about the concept of this -- keep your eyes kind of buggy with that overlay.

If you think about soils filled with water, they are a little bit like a sponge. Now, you know, it would be a very incompressible sponge, you can't wring them out; but if you think about a sponge that's full of water and you could pour water into the sponge and water would drip out of the bottom, in other words, all the same water you poured in the top would drip out the bottom, that's one of the ways you can think about the way the groundwater moves here at the zinc shop or even at the chrome shop.

As water enters at the ege, as water is flowing into the sump, and we are pumping the water out of the sump and water continues to flow in at the edge, at the edges of the site, as that water flows in it's flushing the chrome, just like you have soap suds in your sponge and you put water

through to get some of the soap suds out. Well, as the water flushes through these soils, the chrome is also being carried along with it and brought back into the sump area and it's being collected.

It's estimated, our consultant estimates that it takes about fifty years, and I think that's correct, takes about fifty years for the groundwater to flow from the far edges here into the sump at the zinc shop, takes about that long because the water flows through these soils so slowly. And so that's what we call flushing, and that normal flushing action is cleaning slowly the chrome out of the soils.

Now, one of the questions or one of the things I wanted to answer was how we go about -- when we actually go into what we call a feasibility study, what we do is we -- is our consultant considers all of the options that she might use for fixing the problem of contaminated groundwater, and they essentially do an evaluation of many options and settle on a handful, in this case about six, to look at our contaminated groundwater. And then those six options were evaluated through a process that EPA has set out for Superfunds, and essentially there are three levels of analysis.

The first one is called our threshhold criteria, and that means that all of the options must be protective to go on through the process. To be considered, the option must be protective of public health and the environment, it has to comply with state laws.

And then we have these balancing criteria that says okay, we are going to compare all the options for how well they perform in the long-term, how well do they reduce toxicity and mobility of our contaminants, are they effective in the short-term, can we implement the option, and then we compare the cost of the options that we have looked at.

And, finally, we have to ask, because the State has been in charge of this investigation, is this acceptable to EPA. And then the community acceptance is the last criteria, and that's one of the reasons we hold this meeting is to get input from the community to find out how they feel about the selected options.

And so we ran through -- and most of you have -- if you don't have, hopefully you will pick it up outside. This proposed plan contains a summary of the options that we looked at, and there is a summary table in the plan that talks about the

six options. And, primarily, tonight I'm going to focus on the option that we are here -- that we selected.

But I want you to know that we did, in fact, look at six options, from no action, that's part of it, we looked at what if we just didn't do anything, if we didn't pump anymore, and how would that compare with everything else in those nine criteria.

We considered the option of putting in -- because we know that the western side at the chrome site, the groundwater is being controlled on the western side, and we looked at putting a trench in there and collecting that water and treating it. And what we have ultimately settled on is a recommendation that at the chrome site, because of the limited extent of groundwater contamination and because there really are no significant above-ground structures, we don't have any houses right over this area or something like that, there aren't any roads over it, that we are going to propose what really is an innovative technology, which is this in-situ treatment.

And what I am going to do is I'm going to show a couple of slides of the in-situ treatment

that we are proposing at the chrome shop. What I want to do, maybe just before I begin that, is talk for just a moment about chromium and a little bit about chromium -- the chemistry of chromium.

Chrome is usually written like this (indicating). Chrome comes in -- in environmental -- in other words, if we are looking at soils and groundwater, chrome is found essentially in two forms:

The first form, what we call Chrome VI or Hexavalent Chromium, is considered toxic and it's also mobile. That means it moves in the environment. And the main concern from a toxicity standpoint for Chrome VI is for inhalation. If you inhale the dust particles, the fine air particles from chrome, it irritates the lining of your lungs.

And the second main health problem with chromium is for dermal contact; that is, some people have a sensitivity to chrome and they are actually allergic to it and they will have a surface response in their skin.

Chromium, hexavalent chromium, is considered a Class A carcinogen because of its impact on the lungs. There is some ingestion impact from Chrome VI or the hexavalent chromium, but at

fairly low levels Chrome VI is actually changed in your stomach to the Chrome III form.

What's interesting is that Chrome III is quite different in its environmental characteristics. Chrome III is nonmobile. That means it doesn't move through the soils and groundwater, and it is nontoxic. And, in fact, Chrome III, trivalent chromium, is considered an essential nutrient in your diet and it's important in things like metabolism of glucose and how effective insulin works in your body.

So what we are proposing to do at the chrome shop is to essentially change the form of the Chrome VI that's now in the groundwater to a Chrome III form. By doing that, the chrome will be -- we are going to be changing it from a toxic mobile contaminant to a nontoxic, immobile contaminant. So we are going to be taking essentially the toxicity out of the groundwater by changing the form.

And we are going to show you -- we are going to turn on the slides here again. Here are some slides sent to us by a company called Geo-Con, and they do this kind of what's called stabilization and solidification work. And essentially a large rig, so this looks rather like a crane, comes in

with a large diameter, ten- to twelve-foot diameter augers, and these augers can, in fact, drill down to the twenty feet we need. They can, in fact, go thirty feet or more into the soils. And as these drill into the soils they are mixing the soil and the groundwater and can inject through the auger chemicals or what we call reagents into the soil that will change the Chrome VI into Chrome III.

And, essentially, a series of these augers, these augers just drill a hole, move over, drill another hole, move over, drill another hole, and so a whole series of these are drilled until all of the area where the groundwater is contaminated would entirely be treated with these chemicals that would change the Chrome VI into the Chrome III.

And this is a closeup of the augers actually mixing in the soil. So you can see how the soil is being mixed, and it's fairly liquid here with the reagent or the chemical that's been injected.

This is a picture above ground of these augers, and you have the people here for scale, and so it gives you an idea of how large in diameter this equipment is.

This is a site where once this

stabilization and solidification was done they actually came back in and did an excavation around the area where -- in this case where the sort of cement-like material was injected, so you can see what it looks like down in the ground after it's hardened. And so this whole thing is actually -- it's like a very large pillar down in the ground after it's been treated.

This is a site, and I've put these so you can have an idea, this is an area where treatment was going on throughout this entire -- along this entire riverfront. And this whole area, this particular site had what we call PAH contaminants, but this was contaminated soil being treated through this process.

And then this is the same site when it was finished. So that after this treatment is done the land can be redeveloped, you can construct things on it, it can be relandscaped. So we are done with that.

So, essentially, the proposal that we are making for the chrome shop is to come in with this kind of equipment and to treat the contaminated groundwater within the footprint of this contamination. Clearly, the soil would also be

treated as well, but the main concern that we have is to actually treat the chrome in the groundwater and stabilize it.

What that means is when this is finished the site is clean, the groundwater is treated, the Chrome VI now is immobilized as Chrome III, and there is no more Chrome VI to migrate away from the site. And the property would be considered clean for reuse and could be reused. That's our hope. That's one of the reasons why we have seen this option in such a positive light is it allows this property then to be reused by the city and to essentially be put back into a beneficial use.

We would continue to monitor groundwater around all of the area, of course, within this; all of those wells would all -- those would be gone because that would all be part of the treatment area, but we would monitor the groundwater around that area to make sure that, in fact, we didn't in the future get any kind of leaching of contamination out while the testing, while the drilling is going on, testing is done, where once the chemicals are injected, samples are actually removed from the area where the injection is taking place and then those can be tested to see how well, as you are going

along with the treatment, how well the treatment process is working.

For the zinc shop --

UNIDENTIFIED AUDIENCE MEMBER: You have two kinds of treatments going on within that sphere? Or are you alternating? Are you shifting to a new kind of treatment for the whole thing?

MS. EVANSON: No. There would be -- you mean right now we pump the sump pump?

UNIDENTIFIED AUDIENCE MEMBER: I know the sump from a separate site on the right, but on the left side you had used that new technology.

MS. EVANSON: No. That would be the entire process.

UNIDENTIFIED AUDIENCE MEMBER: You are going to abandon the sump?

MS. EVANSON: That's right. There would be no pump. There would be no pumping the groundwater anymore. The whole area would be solidified and would have this stabilization and solidification process, and we would no longer pump because there wouldn't be any sump left. I mean the sump would be gone. And there would be no removal of the groundwater going on anymore because there is no contaminated groundwater to remove anymore.

UNIDENTIFIED AUDIENCE MEMBER: To what degree does the soil solidify? To what hardness does it solidify?

MS. EVANSON: Well, that issue is dealt with in what we call the treatability study. And before this process can actually be used we have to come out, take some samples of the soil, and the treatment that's actually applied is dependent on what's determined in the laboratory; in other words, what is most effective to the soil.

UNIDENTIFIED AUDIENCE MEMBER: Does it turn hard like concrete?

MS. EVANSON: Well, if they, in fact, inject a cement mix, a cement into the soils, yes, then it really becomes like concrete, yeah. Then it's just like one solid block throughout that area.

UNIDENTIFIED AUDIENCE MEMBER: And so at what depth below the surface would that process start?

MS. EVANSON: Well, the whole -- essentially, as I understand it, the whole area would be treated and then what you would have to do is come and grade it; in other words, you would have to have -- it would have to be formed such that you put a certain amount of soil --

UNIDENTIFIED AUDIENCE MEMBER: So, in other words, use it for a garden or something.

MS. EVANSON: -- over the top. Right. We would have to determine the amount of soil to put over the top so that you could, of course, grow plants and things like that in it, and that's part of the design work.

UNIDENTIFIED AUDIENCE MEMBER: Could you dig a basement of some sort in that area then?

MS. EVANSON: Well, I was going to say we would not recommend that you do excavation in the area after this treatment is done, because I mean what you have done is you have immobilized that chrome and you would like to make sure it stays that way. So we are not going to recommend that there be any excavation particularly done, but it would be landscaped so that there would be soil over the top and, in fact, plants could be grown and gardens could be grown and all of that sort of thing, right.

MS. YOUNG: Terry, do you want people to say their names at this point with questions or should we wait on comments?

MS. EVANSON: Well, the main -- I think the main area where we probably need names is with the comments. I'm going to finish up so that we can

answer the questions here.

At the zinc shop, the extent of the groundwater contamination and the fact that there is -- that above the groundwater, this area of groundwater contamination, we have buildings, we have roads and things like that, it doesn't really make this in-situ solidification process very feasible to implement. And I told you one of the things we have to assess is how implementable is our technology.

So it makes it much more difficult to implement this in-situ treatment process at the zinc shop, simply because of the physical setting of the site. And so at the zinc shop we are proposing to continue pumping the sump, just as we are doing right now.

As I showed you before, we know that the sump is, in fact, controlling the groundwater, which means that we are not getting any spread of contamination in this area. We will take the treatment equipment that I showed you earlier on the slides, that is not located at the chrome shop and it will be moved and placed in a new building at the zinc shop.

So that will -- the advantage of that is

obviously that's where we are pumping the water. We are no longer going to be pumping water at the chrome shop. But it will eliminate the trucking of the water that now occurs. Right now water is trucked from the zinc shop to the chrome shop. That will no longer happen.

So at the chrome shop there will be no building. The groundwater will be treated in-situ, and essentially the land is going to be able to be reused. The site, except for the monitoring that will occasionally occur, will be closed. It will be considered clean.

At the zinc shop we are going to continue pumping water, and what you will find in our proposed plan is it tells you that we are estimating that it will take in excess of two hundred years, I mean that's a long time to pump water, to actually be able to move the chrome through those tight soils back to the sump.

The other thing that I want to mention before we open up for questions is the other aspect of our remediation or recommendations in the proposed plan has to do with basement contamination at the zinc shop.

There is a home here, 401 South Sixth

Street, and over here at 548, this is a business at 548 Butler Street that has had some impact to the basement, having chrome actually migrate into the foundation of the basement walls. And what we are proposing, we considered a number of options for dealing with the basement contamination, just as we considered options for the groundwater contamination, and what we are recommending in these basements is that we seal -- we put a sealing material on the inside and the outside of the basement walls, that we build a drain around the basement to lower the water that -- the water table, essentially, around the basement so we don't get water flowing in towards the basement any longer.

And we believe by doing this that we will be able to reduce any risk of direct contact that the users and -- that the residents of the home and the users of the building may have.

This looks at the cost of the remedy. The in-situ stabilization and solidification, we ought to put in there and continued pumping at the zinc shop, costs a little more than one million three hundred thousand dollars. The basement isolation and drain costs approximately forty-five thousand dollars, for a total cost in the capital cost of

about one million three hundred and sixty-three thousand dollars.

We will have to continue to operate the sump pump and the treatment facility at the zinc shop, and that's what this operation of maintenance cost represents is the operation of that system at the zinc shop.

And, finally, our total cost, what we call present worth cost for thirty years, how much does this cost, because it's not just the hundred and three thousand dollars it cost us this year to operate it, but for every year into the future that -- the EPA requires that we consider costs for over a thirty-year period. For thirty years the selected remedy for the basement and the groundwater treatment is about two million six hundred thousand dollars.

What I want to make clear is the main part of this remedy that's going to be operating for thirty years in the pumping at the zinc shop and the treatment plant. The chrome shop will be -- once that solidification and stabilization step is done, the chrome shop will be finished, that that doesn't need to go on for thirty years. That will be finished once that remedy is actually complete.

And the basement, of course, will be finished once we've finished doing the sealing of the basement and putting the drain in.

Now, did I answer the questions that were originally asked?

MS. YOUNG: I guess what happens if it doesn't work? I kind of threw that one in. Sorry about that.

MS. EVANSON: Well, the first thing, and I think that's an important thing to address is what happens if it doesn't work. And I think the first indication of how well this is going to work is going to be when we do the treatability studies. And what we need is a laboratory study of the soil at the site and the -- the soil and groundwater.

We have to actually go in and take samples, send that to a laboratory, and they will test the different kinds of chemicals that need to be added to actually cause this change in the chrome to occur.

I was talking to a gentleman just yesterday about this, and he said at some sites they can simply come in and just inject cement and that alone, at some sites, has been enough to cause this reduction from Chrome VI to Chrome III.

At other sites it's a little more complicated. They have to inject a material called ferrous sulfate, and that helps cause this chemical change to occur. Sometimes they have to acidify a little bit, and the fact is you cannot tell. I can't stand here and tell you today what they have to do, because they've got to find out in the laboratory what works best for this given groundwater in these given soils. And that would be one of the first steps we would take would be doing this treatability study to determine exactly what would need to be added so that this would be successful.

I was going to say, if they did all the tests and said oh, nothing is successful, we can't do this treatment, I guess what we would end up doing is falling back to the plan where we would have to put in the -- we continue to operate the sump and put in the trench to collect water on the western side of the chrome shop.

We are very hopeful that, in fact, this solidification step will be effective.

MS. YOUNG: There was another question about surface soil runoff. If you do this process, how will the surface water --

MS. EVANSON: The surface water. That's a little difficult to say what we would do. As I said, this would have to be graded such that you could put soil, regular soil, I'm sort of thinking like three feet of soil, at least several feet of soil over the top of this so that you could reasonably be able to grow garden plants and things, because some of this is clearly on private property.

Now, the main concern when you have surface water falling on it it's not going to be like surface water falling on your road, because surficial soils that will be placed there would be absorptive; that is, the water is going to be able to filter through the clean surface soils that will be placed there.

Now, if it's like, say, two or three feet beneath the ground, it's like concrete, and what's going to happen is water would tend to move laterally across that. Now, this site is very flat, so we don't have concerns of, you know -- well, we were there today.

MR. KOZOL: There is a little bit of a slope. There is a low point it looked like when you are in the private residential area.

MS. EVANSON: We don't have like six or

seven percent slopes out there?

MR. KOZOL: No, there is not.

MS. EVANSON: But I think, from what we could see today, I think with the addition of soils that we would find that it would be a stable situation. But, again, that part of the design process that goes on, which would be making sure that it was graded so that you didn't have problems with the stability of the soils above the treated area.

That's the main presentation, what we are proposing. We believe that in our analysis process, through those nine criteria, and I told you about that, what we are proposing presents the best balance of these options. So what we want to do is open it for questions and comments, and I'll let Mary take over.

MS. YOUNG: I did want to make a comment she forgot from the health perspective.

MS. EVANSON: Oh, I forgot the next part of the agenda, which was Mary's.

MS. YOUNG: That's all right. I just had a couple of comments to make. For those of you who have been around for a long time through this process, Kim Brow (phonetic) has been the lead

person in our office who has worked on health assessments and done a lot of work, and he's leaving our office. So he's gotten a new job and I'm going to take over lead responsibility from our office after tonight. Well, he leaves Monday.

Kim looked very carefully at the proposed plan and feels that it's protective of public health insofar as -- I mean or as long as there are some safeguards to make sure that this is working the way that they propose that it will, and those things include the things that Terry has already mentioned.

At the chrome shop there would be continuous monitoring -- or not continuous, but occasional monitoring, regular monitoring to make sure that the system is doing what it's intended to do.

Oh, the fact that they now know what the limits of groundwater contamination are. I mean originally when Kim did the health assessment he was concerned that there was not a good understanding of how far contamination had extended. Now there is a good understanding of where the contaminated ground is, so we would want to just make sure that the systems are working the way they are intended to work.

As far as the basement, we are concerned at this point, we see that as the only, and I really can't say significant exposure, but there is chrome-contaminated water coming in through basement walls. We don't know whether that level is significant or not and have done some sampling today, as a matter of fact, to see whether there is hexavalent chromium coming in; and we have consulted with the homeowner there to make sure that there is no contact with the contaminated water that might be coming in.

At this point, I would like to open the floor for other questions and comments, and this is kind of -- we are a little more formal now, so if you wouldn't mind giving your name before you ask a question. You can direct your questions or comments to whomever you would like.

MR. SCHMIDT: My name is John Schmidt. As you had the slides up for the zinc shop, the overhead, to the east of where that building had been before they did the excavation, there is a dark area. What did that represent?

MS. EVANSON: Let me find this here. That's a good question. You're talking about this?

MR. SCHMIDT: Correct.

MS. EVANSON: This area, here (indicating). Judy, maybe you can address that.

MS. FASSBENDER: Originally when the building was still standing, they recognized that there was a significant problem, and they excavated a small sump on the back end of the building so that they could start groundwater remediation right away. So that sump probably was excavated probably like 1989, something like that, quite a while before the 1993 sump was excavated.

When they excavated in 1993 they just incorporated that area as part of the bigger sump. So they had a smaller pump on the back end of the building while the building was still standing that was collecting groundwater.

MR. SCHMIDT: Just a couple of wells?

MS. FASSBENDER: Just one sump like this cross-section that Terry had drawn.

MR. SCHMIDT: There were two wells in there.

MS. FASSBENDER: Originally there were two wells in there, you are correct. And those two wells they collected groundwater samples from it there and found that there was very high levels of contamination in those monitoring wells and decided

they could kind of do it like an interim measure where they would excavate the area, remove those two wells, and put a sump in in that area where the initial sump was while the building was still standing.

MS. EVANSON: So what you are saying is today the sump incorporated this hole, is that correct, the existing sump now, but --

MS. FASSBENDER: Right. But it preexisted the 1993 sump.

MS. EVANSON: 1993 area.

MR. SCHMIDT: Just to make a comment. John Schmidt again. I'm going to disagree with that. We are the owners of that property, or I work for the company that owns that property, but I'll discuss that with you later, then.

Now, you talked about some long period of time for cleanup. You talked about a long time and threw out another number. So just what kind of time are you talking about fifty or a hundred feet from the hole? Those will be the longer because they are drawing from the farthest distance?

MS. EVANSON: Right. The longer is from the edge. In other words, from where we've got the contamination farther away.

MR. SCHMIDT: But the closest to the building.

MS. EVANSON: The closest to the building, right, that that chrome is flowing into the sump right now.

MR. SCHMIDT: But it will never clean up also because the material from the farther out is going through that same soil; am I correct?

MS. EVANSON: Right, and that's why -- see, when I said it takes fifty years to get one flushing through, that means for all the water that's within this area to move down into the sump.

MR. SCHMIDT: One time.

MS. EVANSON: One time. But, right, that's exactly what's happening is that you get -- the chrome is going to move a little bit, a little bit, a little bit, so you are going -- you need a number of flushes through here for that chrome to all eventually get into the sump.

And so what I am saying is we don't -- it's difficult for us to estimate. How many times do you have to flush those clay soils to get the chrome back into the sump collected? And so what we are just saying is that's why we believe the total cleanup time to be greater than two hundred years,

because that's four flushes. Two hundred years represents four flushes, and it's difficult to stand here and tell you oh, I can predict out to two hundred years and three hundred years. I don't think that's possible.

We are just telling you realistically, we are talking about a very long time for this chrome to flush in there. It's important that you understand.

MR. SCHMIDT: Would additional trenches or additional sumps decrease that amount of time?

MS. EVANSON: Yes. Obviously, what we are dealing with here is the property that the zinc shop was on, but I would guess that if you went on to all the private properties and put in more sumps, you are right, you would have shorter distances for the chrome to travel for collection.

You know, but, obviously, that means digging these twenty-foot deep sumps, you know, on the private property or collection trenches or whatever. But you are right, that would, in fact, decrease the time frame for collecting the homes throughout that area.

MR. SCHMIDT: Most of that property is zoned industrial, but it is also going to have some

impact on the salability of that property down the road.

MS. EVANSON: Right. Yeah. I understand that.

MR. LEHMAN: Yes, my name is Jim Lehman. Terry, the hazardous waste that's removed now, where is it disposed of?

MS. EVANSON: I'll have Kathy tell you that.

MS. ERDMANN: That's brought down to a landfill in Menominee Falls, Wisconsin.

MR. LEHMAN: And I have another question here on your success rate. The solidification, what is the success rate? Does it totally clean it up?

MS. EVANSON: I was going to say, that clearly is our hope. See, when you say success rate, I don't know of -- because this is the first one we are proposing in the state, I can't tell you that I can compare it to the three others we had done.

MR. LEHMAN: Now, one other question that I have is your anticipated cost of thirty years is $2,646,200. Is there going to be a renewal after that for cleanup? Because you are talking fifty years for, you know, total.

MS. EVANSON: Right. The cost, and that's always an issue, because obviously the cleanup is longer than the thirty-year time period that we are looking at for the zinc shop. EPA mandates -- we have certain requirements under the Superfund, and one of the requirements is that we estimate costs out to thirty years. And even if it's going to take two hundred years, it turns out that the mathematics is such that beyond thirty years the money doesn't really mean anything in today's terms as far as that additional cost that far out, because what you are doing is you are calculating the cost into the future and then discounting it back, and after thirty years -- in other words, if I estimated how much it cost a hundred years from now it would be like zero dollars today.

But that doesn't mean that we are not going to continue the cleanup. We are just saying this is the cost over that time.

Bob, did you want to --

MR. STROUS: Bob Strous. I just wanted to say that this type of solidification has been done in the state of Wisconsin, just not by --

MS. EVANSON: Not on chrome.

MR. STROUS: Not on chrome. Not by the

state or federal governments, but I know that some responsible parties have undertaken this type of remediation fairly successfully. We do know that it's been done on chrome in other states with reasonable rates of success, so we wouldn't be proposing this if we didn't think that it was going to be successful.

MS. EVANSON: But we have not used this for treating chrome in the state, but that is true, we have experienced this kind of process with other types of waste.

MR. KONRATH: Marv Konrath, and I live directly west of the chrome shop, so your slide on that, wells 109-A and B obviously shows contamination because they are inside your -- those are on my property, but they are inside your line.

Now, 110 and 110-A are also on my property, and obviously those aren't contaminated. How did you draw that black line where you did, seeing as there is something like approximately eighty feet between 109 and 110?

MS. FASSBENDER: If Terry would put the water table map on top of that, the surface water on the groundwater is following what we believe to be the bedrock surface down below and that there is

kind of a second divide that runs right between there. So it shows that there is a gradient.

MS. EVANSON: Do you want to overlay that?

MS. FASSBENDER: This line and this line (indicating) are the same, the groundwater is at the same elevation, so the water moves this way (indicating). And then from here we think it goes up this way (indicating) because that's where you've got your -- there is a stormwater drain that runs up that way, and eventually that runs up into the Fox River.

So we think what happens is pretty much that water is going both this direction and this direction, so we felt pretty competent drawing this line down the middle.

MR. KONRATH: That's right before the sewer.

MS. FASSBENDER: The sewer, it's pretty close to being right about the sewer. This low spot and this low spot are right above the sewer, so it's kind of right in the middle there.

MR. KONRATH: So you've got to go down twenty feet now. Is this going to affect the sewer or are you going to have to replace that or what are you going to do with that? Because that leads

directly to the Fox River.

MS. FASSBENDER: Right. Right. I would -- in the design that's something we will have to address is exactly how close we are and what effect that's going to have on that sewer. So at this point we've got a pretty good idea where that runs; we don't know exactly where that runs.

MR. KONRATH: You can see the manholes and the depression in the ground there.

MS. FASSBENDER: Right, but that's how this line was drawn and it's a function of where that storm sewer is.

MR. KONRATH: Now, in this encapsulating there, then anything that is outside that line is perfectly safe or is there always going to be danger of some contamination along there and saying hey, you got to clean up what's left over here?

MS. EVANSON: That's part of our design process is, in fact, we are going to want to make sure this very question is answered. In other words, have we, in fact, gotten all of the contaminated groundwater treated; and that's simply a process of taking samples and finding out.

MR. KONRATH: What's the timetable on that?

MS. EVANSON: Of actually doing the cleanup?

MR. KONRATH: No. Of being sure that there is no more -- you can hand me a document saying that my land is perfectly clean and nobody has to do any cleanup.

MS. EVANSON: Right. I mean that's going -- right, that the property is clean?

MR. KONRATH: Yeah. How long would that take?

MS. EVANSON: That is a function of after the treatment is done of, in fact, going in and making sure that you have cleaned it up properly and that what -- we do this all of the time, actually. And it requires taking soil samples. In other words, we could go in with bores and we could take water samples immediately outside of where the treatment has been done and you can determine is it clean or is it not.

And if it's clean we are going to be able to say we have treated the contamination, we don't see any hexavalent chrome here and the site can essentially be closed; that is, it's now clean and there is no --

MR. KONRATH: Do I get a document at that

time stating that it's clean?

MS. EVANSON: Right. That's essentially what we produce when people come in. Like I said, in other contamination cases around the state that's what is produced. When somebody's property now is clean, we do have what we call "Clean Closure Certificates" and things like that that say this property is clean.

MR. KONRATH: What kind of brought that to mind is that church in Green Bay. The City sold the property to them and they went to improve their parking lot and they found there was a gas tank underneath there and the City says well, let the buyer beware. So, therefore, people are very conscious about buying any contaminated property.

MS. KONRATH: If you do this, is there any time -- Elaine Konrath. Is there any time like next year, two years?

MS. EVANSON: We are estimating that the design period will take about a year and that the actual treatment we are hoping would be a year to eighteen months. In other words, in a year to eighteen months we would actually see work done.

The big caveat that goes with that is getting the money to do it. The money is going to

come from EPA. Now, EPA is agreeing to this cleanup. They've told us yes, we are going to agree to this approach. And we have enough money to actually design it; that is, we can hire Hydro-Search and they can design this treatment that we are proposing.

But then we are going to have to go back to EPA and say okay, now everything is designed and we are ready to do the treatment, we are ready to bring the rig on and start doing this in-situ treatment and they are going to have to cough up $1.3 million, because that's the capital cost.

And so the big caveat I give is the whole issue with Superfund and that they have to have the money to give us. They can't tell me today that in a year or eighteen months they are going to have the money to give us, but that will be ultimately the determining factor of when this actually gets done in the ground, coming up with the actual capital cost.

Mr. Konrath.

MR. KONRATH: I say this rather facetiously, because it seems rather odd to me that you use chemicals to get rid of chemicals. I mean the history of the United States has been well, we

took care of this problem. What happens when we got another problem?

MS. EVANSON: Right. And one of the things, that's why it's important to try to find a chemical that then does not cause another environmental problem, and that's where the ferrous sulfate is a pretty decent chemical to use, because it's actually the iron that will help change the chrome. The iron will itself change and become Iron III, which turns out to be fairly immobile in soils.

The chrome will change to Chrome III, and the sulfate is fairly innocuous; it's going to be bound up within the soils and will solidify in the soils. And so none of those things are really going to cause a groundwater problem. But that is one of the concerns.

MR. KONRATH: I do have one more, Mary, as long as we are talking about money. Is there any provision -- I'm getting up in age here -- along the line someone will say you shouldn't have lived this long and all of a sudden now we got to put you in the nursing home? Is there any public funds for something of that nature?

MS. YOUNG: I'm not aware of any. I mean

outside of the regular Medicare/Medicaid kind of -- but to my knowledge nobody has ever that I know, nobody really knows what the long-term effects are of living in this place 25 years day and night, because nobody has ever done it before us.

MR. COWLES: Bob Cowles. On a related note, are you testing? Are you monitoring the health of the people over the last decade? Do we have any indication of any ill effects so far?

MS. YOUNG: I'm not sure how to answer that question. I'm thinking that over time we've done a lot of studies of groups of people who have been exposed to chemicals, and to date in Wisconsin we've never made a case association between a low level exposure and a higher incidence of a disease, because it's so complex. People's lives are all different.

There are a lot of contributing factors that cause health effects, and so I can say that we have not seen -- we have not made a real strong case for health effects and low levels of contaminants. It's very difficult.

I would be happy to talk about that more, too, if you would like to know more about it. We do health studies.

MR. ALDRICH: Hank Aldrich, A-l-d-r-i-c-h. I was just wondering about you said that it's a carcinogen to breathe in the flakes of the chromium. Would that cause a problem with the augers going into the ground and releasing that into the air at all?

MS. EVANSON: Chrome is not what we call volatile, so the main thing you would have to be concerned about is any kind of dust. In other words, it doesn't just go into the air on its own. But the main thing you would have to be concerned about is dust control. And, in fact, any kind of excavation, that would be one of the things that we would, in the design, would have to be concerned with and control the dust. So our main concern would be the people immediately in the area of the augers and the like, so we are going to patrol that and make sure that people are --

MR. ALDRICH: How would you go about doing that for the homes in the surrounding area?

MS. EVANSON: Well, I was going to say, because here, you know, you saw the picture. It's not like you are going down with a backhoe pulling all this soil up and it's just blowing out into the air. I mean all of this is being done down in the

ground, and it seems -- I mean there are -- this auger does have the ability of having a hood that you can control any kind of air, so if it's determined that that's necessary -- but I think the very nature of this, you saw, particularly if they put a wet chemical in, the very nature of this is such that you are not going to produce a lot of dust.

MS. YOUNG: I would like to comment, too, on that a little bit. I'm feeling a little self-conscious about how sad that last reply was regarding the health studies. The Division of Health works very hard at identifying situations that may contribute to ill health in the environment. And what we try to do, rather than doing health studies to provide a link between an illness and an exposure, we try to give people advice that will reduce their exposure so that there are no health effects.

So in the case of a remedial action taking place, if you live near the chrome shop, for example, and you would find that it was getting very dusty and you were concerned that you might be inhaling chromium-contaminated dust, we would hope that you would feel comfortable giving us a call so

that we, in turn -- or you could call the project manager or Kathy at the DNR, somebody locally or Shirley at the DePere County Health Department -- City Health Department so that we could get some action taken right away. Because we don't want you to have unnecessary exposures.

MS. EVANSON: And, like I say, they try within the whole design to make sure that there is no exposure through the safety that's taken at the site.

MR. KONRATH: One final question. When they are all done with this stuff here, are they going to landscape my property? Am I going to have to do it or what?

MS. EVANSON: I would expect that the property -- I mean that that would be part of the design, that the property would be returned and landscaped. I mean that would be part of working with you, to determine how that would be done.

But, clearly, when the actual treatment is done we are going to take care to make sure that the surface of that is now usable, and the way you would want to use it for your backyard.

MR. KONRATH: Then pave it with a tennis court.

MS. EVANSON: Then we don't have to bring the soil in.

Are there other questions at all?

(No response.)

MS. EVANSON: All right.

MS. YOUNG: Any other comments that you would like to make on this proposed plan?

MR. COWLES: Senator Bob Cowles again. Are the groundwater wells showing a decrease in toxicity? Is there any indication of that thus far?

MS. EVANSON: I think I have to say no. I mean the studies that we've done, you know all of the wells really haven't been monitored, I think, over a long enough time period to be able to say that we've got downward trends.

What we do have is the water that's flowing into the sump, I mean that, you know, that water is treated and --

MR. COWLES: Is that dropping in toxicity?

MS. ERDMANN: I can get that information for you. I have it at my fingertips, and I was just asking for that information about a week ago.

MS. EVANSON: I was going to say when I was asked that a week ago, what they had told me was because the sumps have only been operating since

1993, that's only three years, that really what we are drawing from right now is very highly contaminated groundwater in the immediate vicinity. Because I had told them that that takes so long for the water to flow through the soils that I don't think we have really been operating long enough to see significant decreases in concentration.

MR. COWLES: Is there any way to artificially (inaudible) this pump instead of waiting for a rainstorm to push more water through the system to expedite it?

MS. EVANSON: Actually, one of the options that we looked at was that; in other words, is there a way to enhance movement of the water through the soils. And the basic line answer is that it's very difficult to do because the soils are so tight, you've got that tight clay, and this is -- the clay soils up here are very slowly permeable, that water does not move through them very readily and that's what our basic problem is. But with the sand, then it would be much easier, yes, to do what you're suggesting.

MS. LENZ: Gayle Lenz. I had to come back and look through here for my question. The book had said there is a few isolated hot spots in the zinc

shop, and I don't know that you had addressed that.

MS. EVANSON: That's a good point that I didn't cover in talking about this. One of the things that we intend to do is, particularly at the zinc shop, we are not sure, but we believe that there may be some additional soil contamination off the zinc shop property.

I told you that the property itself was excavated, but testing off of the zinc shop property, some testing was done but not deeper in the soils. And that's one of the things that we need to do.

And, again, just as we are going to do this treatability study to see how we need to treat the soils at the chrome shop, we are going to also be doing some additional soil testing around the zinc shop to see if there is any additional soils that actually need to be removed, and that will be part of our predesign work will be going in and doing that additional soil testing.

MS. LENZ: I live directly across the street from the zinc shop, and there's two wells on my property. How long are they going to leave those there? They have been there about five years already, I believe.

MS. EVANSON: Right. That's probably the case. One of the things we are doing right now is actually assessing that, which wells, because we are going to have to, as I pointed out, because we are going to continue pumping at the zinc shop and even with the treatment at the chrome shop we are going to continue to do groundwater monitoring. And what we are doing, in fact, Judy is doing now is assessing which wells we really have to keep for our monitoring network.

And we've got a neighbor immediately adjacent now who is -- well, you know, what I want is for the wells to be flushing out, in other words, just even with the ground so that the pipes don't stick up and so there are ways in which we might be able to make adjustments on the wells so that they are not in your way.

If you absolutely don't want the wells anymore, if you just prefer that they not be there, then we can talk with you about whether they need to remove them or if they need to replace them or whatever.

MS. LENZ: You can remove them anytime you wish, because, see, if I was going to put my property up for sale, I sure wouldn't want those

wells there.

MS. EVANSON: I understand what you are saying. So what we are doing right now is doing an assessment of which wells we feel are absolutely necessary to our monitoring program and the ones that aren't we will remove.

MS. LENZ: That's the thing, that zinc shop is closer than twelve hundred feet from the city well. I don't think it's more than four hundred feet.

MS. EVANSON: Okay.

MS. LENZ: Because my lot is a hundred seventy feet long and the well is practically directly, a little bit the lot next to mine. But my lot and his lot is the same length, and that's a hundred seventy feet, and that well is directly right off that lot.

MS. EVANSON: About two hundred fifty feet rather than twelve hundred feet?

MS. LENZ: Right. It's not twelve hundred.

MS. EVANSON: Then it's two hundred fifty feet. What I say about the geology doesn't make any difference; that is, that well is not any risk for contaminant risk, you're right.

MS. LENZ: You would be up beside the high school.

MS. EVANSON: That's right. I think there are some other wells that are about twelve hundred feet away.

Thank you. Are there other questions or any other comments that anyone wants to make about the proposal?

MS. YOUNG: You will have, as Terry mentioned earlier, practically through the end of August I think it's the 24th you said.

MS. EVANSON: Through the 26th of August we accept the comments on that plan, and you are certainly welcome to -- we even provide a little sheet in the back here to write comments on the sheet. And just tear that page off and mail it in or write a letter if you want to make additional comments besides your oral comments tonight. And we welcome any comments.

MS. YOUNG: Again, if there are people that are not here that you think we should contact, we would like to know who they are. And, also, if you haven't signed in we would like to know who is here tonight, who's got the most interest in the site, and we will be around. Thank you for coming

tonight.

(The meeting adjourned at 8:30 p.m.)

STATE OF WISCONSIN)
)
COUNTY OF KEWAUNEE)

I, NANCY M. BAUX, Certified Professional Reporter, hereby certify that I am the official court reporter for Circuit Court, Kewaunee County, Wisconsin, that I have carefully compared the foregong 67 pages with my stenographic notes and that the same is a true and correct transcript.

Dated at Kewaunee, Wisconsin, this 12th day of August 1996.

Nancy M. Baux

Nancy M. Baux
Certified Professional Reporter
Notary Public

My Commission Expires
September 29, 1996.