STATE OF MICHIGAN

DEPARTMENT OF ENVIRONMENTAL QUALITY

REMEDIATION AND REDEVELOPMENT DIVISION

- -

IN THE MATTER OF:

GELMAN SCIENCES CONTAMINATION

- -

PUBLIC INFORMATION MEETING AND
PUBLIC HEARING

Tuesday, July 28, 2004
7:00 PM

Slauson Middle School
1019 West Washington
Ann Arbor, Michigan

PANEL MEMBERS - Carrie Monosmith, Hearing Officer
Air Quality Division
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Sybil Kolon, Project Manager

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Recorded by - NETWORK REPORTING CORPORATION
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I N D E X

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(Public hearing scheduled to start at 7:00 p.m.; actual start time was 7:02 p.m.)

MS. MONOSMITH: Good evening, Ladies and Gentlemen. My name is Carrie Monosmith, and I will be the Hearing Officer tonight representing the Department of Environmental Quality.

The purpose of this hearing is to provide an opportunity for the DEQ to answer questions about, and the public to comment on, the feasibility study dated June 1st, 2004, submitted by Pall Life Sciences, Incorporated, for the Gelman Site. In addition, the DEQ will take public comment on the proposed remedial alternative that we have tentatively chosen to clean up the aquifer referred to as Unit E.

This public hearing is being held under the authority of the Administrative Procedures Acts, and Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA) as amended. Section 201(20d) of Part 201 of NREPA requires this hearing as part of the public participation process in making cleanup decisions where the public has shown significant interest.

This hearing is one component of the in-depth community relations strategy the DEQ has implemented to satisfy the public's high level of interest in the Gelman contamination site. Other aspects of our community involvement plan include the establishment of four information repositories that we send documents to on at least a quarterly basis. We have also established a site-specific web site and an electronic mailing list for interested parties. The locations of these repositories, our web site address, and other contact

information are noted on the fact sheet that is available on the table by the entrance to this auditorium. If you did not pick up a fact sheet on your way in, please raise your hand and we will have someone bring you a copy. Please be sure to sign in before you leave so we will have a record of the public participation here tonight.

The Michigan Department of Environmental Quality staff have completed their preliminary technical review of the feasibility study and are present here tonight to share the conclusions of their review and to listen to your questions and concerns. I would like to introduce DEQ staff who are here to provide information and listen to your comments. To my far right is Sybil Kolon. She's the project manager from the Remediation and Redevelopment Division, or RRD, in the Jackson District. Also present this evening are Mr. Leonard Lipinski, our Project Geologist; and Mitch Adelman, to my right, the Jackson District Supervisor for the RRD. Assisting us in the auditorium are our two student interns, Stacie Auvenshine and Melissa Kovach.

DEQ staff will provide information about the feasibility study during the first part of tonight's meeting. Sybil Kolon and Leonard Lipinski will provide a brief overview of the Unit E aquifer contamination. Sybil Kolon will then provide a summary of the remedial alternatives considered in the feasibility study done by Pall Life Sciences, the successor to Gelman Sciences. Mitch Adelman will present the DEQ's analysis of the proposed remedy selected by Pall Life Sciences, including the relevant criteria used in that analysis. Sybil Kolon will then outline the DEQ proposed alternative and the rationale for selecting it.

After that presentation a representative of Pall Life Sciences will make a

statement. RRD staff will then take questions from the audience to clarify any issues prior to beginning the public comment part of tonight's hearing. If you would like to make a comment during the hearing part of tonight's meeting, we ask that you write your name and any organization you are associated with on one of the cards available at the back of the room. After the question and answer period we will take a short break so everyone is allowed time to fill out a comment card. We ask during the presentations that you hold your questions until they are completed.

And we will get started with the presentations.

(Slide 1)

MS. KOLON: Good evening, everyone. Can everyone hear me all right? Sounds like you can. My name is Sybil Kolon. I'm the project manager for the Gelman Sciences site. I've been working on this site since 1992. I've been the project manager since 1995. There is additional background available about the site available on the DEQ's web site and the DEQ's information bulletin. The web address is listed up on the screen. We're going to be giving you a lot of information tonight and we're going to try to make it as brief as possible, but we believe it is important that the public understands the feasibility study, the DEQ's evaluation of it, and our proposed remedial alternative.

Groundwater contaminated with 1,4-dioxane from the Gelman site was discovered in late 1985. 1,4-dioxane is the contaminant of concern at this site and is a completely water soluble solvent that is believed to be a human carcinogen. The generic residential cleanup criterion for dioxane is 85 parts per billion, and this is the standard that Pall Life Sciences, or PLS, has to

achieve with the remedy that is selected.

(Slide 2)

Before 2000, investigation had identified contamination only in the upper aquifers but not in the deepest aquifers, and this figure depicts the shallower aquifer contamination. Significant remediation of the shallow aquifers began in 1997 and continues today. This involves extraction of over 900 gallons per minute, treatment and discharge to the Honey Creek Tributary, which is right here on the map.

In March 2001, the city discovered two parts per billion of dioxane in the city's water supply well at Montgomery and Bemidji Streets, which is -- not on this map. The next -- next slide, please.

(Slide 3)

Here we go. It's right in that area, I believe. In June 2001, PLS installed MW-64 on their property as part of their continuing investigation and discovered 800 parts per billion of dioxane in the Unit E aquifer, and that was back in this area.

Now, those investigations continued. PLS installed two extraction wells on their property as an interim response. TW-11, which is in this area, and TW-12, which is front of the Plant Building, have been removing contaminated groundwater since 2002. This water is being treated and discharged along with the ongoing cleanup of the shallower aquifers. I would like to emphasize that this groundwater contamination is very deep and does not pose an immediate threat to the public health unless it is being pumped to the surface. To our knowledge, there are currently no human exposures to this contamination.

Leonard Lipinski, our geologist for the Gelman site, will give a brief

overview of the work that has been done to define the extent of contamination in the Unit E aquifer and other details about the geology.

MR. LIPINSKI: As Sybil said, my name is Leonard Lipinski, and I have worked on this project for a few years back in the 80's and then fairly continuously since 1992. I wanted to do a little bit of discussion on the horizontal extent of the contamination in the E Unit, and I want to just point out, again, that where it shows this plume here, this is based on the 85 part per billion contour.

As Sybil said, the investigation of the E Unit first began in this area and it has moved from the west over to the east. As part of this investigation, 31 monitor wells have been installed, plus an additional four or five borings in which there have been no monitoring wells. During the drilling for most of these locations, the groundwater was vertically sampled during the drilling, and there was found to be significant vertical variation in the dioxane concentration at locations.

Generally, wells were screened at the highest level of contamination. At some locations there are two or three wells which are screened at different depths.

(Slide 4)

Generally, the flow direction is in this direction, east and northeast, and it's expected to be towards the river, and it probably was previously influenced by the pumping of the Montgomery Well, which again is about right in here. On this map, you also see some dotted lines. This is the migration path that's predicted by Pall, and these are -- this prediction is based on earlier geological

studies of the area. And based on the known information, this prediction is not unreasonable. In reality, the actual migration path will probably vary from this prediction due to the complexity of the geology, and it's really difficult to be sure where that plume is going to go.

The -- don't tchange it. Change it back for a second.

The next figure that you saw for a second there is a very, very simple cross-section of the geology about right through here on Maple Road. I think it goes from west to east.

(Slide 5)

And I just want to say a little bit about the depth of the contamination and the change in geology here. And I have pointed out there is a very simple geologic cross-section. This is being the surface here. This is the shale bedrock, the dark gray. These other gray areas are mainly mostly clay and -- with some sand in them, and then the yellow would be the aquifer units where most of the contamination would be moving through.

For most of the site, the contamination is generally -- the greatest level is contamination about 200 feet deep, and in the aquifer that's closest to the bedrock. This would be down here. As this contamination -- this unit approaches here at Maple Road, it pinches out and merges upward with this -- the unit that's above it. And then when you get to Maple Road and east of Maple Road the highest levels of contamination are then from about a hundred to 120 feet. Also, at Maple Road there is a major change in the dioxane concentration. At MW-85, which is roughly about right here, in the parking lot of Maple Village, concentrations are about 2,000 plus parts per billion. Then

about right over here, at MW-84S, which is east of Maple Road, in Veteran's Park, there is a -- concentrations are, you know, about a tenth of those on the other side of Maple Road or about 180 parts per billion. These changes in the geology and the dioxane concentration at Maple Road make this an advantageous location to cut off part of the contamination plume.

The complexity of the geology here which doesn't look all that complex from my diagram, but it is -- the complexity of the geology here also makes it a poor location for re-injection, and this will be discussed further. And Sybil now is going to provide a review of the PLS feasibility study.

(Slide 6)

MS. KOLON: A lot of investigation has been done, as Leonard mentioned. There has been a lot of involvement by the local units of government and citizens that have preceded submittal of the FS -- will not take a lot of time or much time at all really to review that history, because we want to focus on making a decision on how we need to move forward from this point.

Investigation has been proceeding and in many cases has resulted in new information that required revisions to plans and more investigation to support selection of a remedy. There are several distinct components of this remedial action, including extraction, transport of contaminated and uncontaminated groundwater, treatment and discharge.

PLS identified 13 different combinations of these components which are outlined in the table you should have picked up on the way in. That's on the other side of the agenda that you picked up, and it's shown here on the screen. These were reviewed in more detail and screened down to eight different

alternatives. Because many of the components are repeated in various alternatives, I will not go over each alternative individually.

The DEQ generally agreed with the 13 alternatives considered -- that they were reasonable to consider -- and also agreed with the elimination of seven of them from the more detailed review. PLS's estimated costs associated with the eight alternatives reviewed in detail are included in the tables at the end of the feasibility study and are summarized in Table 1 of the fact sheet, which is also available outside if you haven't picked one up yet.

These cost estimates include capital costs for construction as well as for long-term operation and maintenance. When I refer to the estimated time that each of these alternatives will take to achieve cleanup, it is based on the time on which costs of operation and maintenance were based.

After my summary, Mitch will review the criteria by which we evaluated the alternatives.

Alternative 1, the no action alternative, is included for comparison and was eliminated due to not meeting state environmental law.

(Slide 7)

Alternative 2, monitored natural attenuation and institutional controls, involves investigation and monitoring to determine the path of the plume and restrictions on the use of groundwater to prevent human exposures. Without any remediation the contamination will continue to migrate and the path of migration as predicted by PLS is shown on this figure. Due to the large area over which restrictions on use of groundwater would be required, individual deed restrictions would be impractical. The most practical method of achieving

such a restriction would be a local ordinance that the City of Ann Arbor would have to agree to. While such a remedy would meet the requirements of our environmental statute it is not clear that the City of Ann Arbor would be willing to enact such an ordinance under these circumstances. PLS estimates it will be 40 years before the aquifer will meet relevant criteria. This would occur through dilution and dispersion of the contamination.

(Slide 8)

Alternatives 3, 4 and 5 all involve capturing the groundwater contamination -- that is, anything above 85 parts per billion -- at the leading edge, as depicted in this figure. This is a conceptual diagram prepared by PLS and is not meant to indicate where extraction wells and pipelines will be placed. The location of extraction wells would be preceded by investigation to determine where the leading edge is. PLS estimates it will take 20 years to achieve 85 parts per billion throughout the aquifer using any of these alternatives. So all the contamination that's currently back there would have migrated and been collected by the extraction wells.

Alternatives 3a through e involve piping contaminated groundwater back to the PLS property at Wagner Road for treatment. And this diagram illustrates Alternative 3a, which shows the pipeline going back along Jackson Road and Wagner Road to the PLS property for treatment. And in this case -- this is showing 3a which then shows the treated groundwater going through a pipeline, up Maple (sic) Road, to M-14 and to the Huron River, downstream of the Barton -- of the water -- the city's water intake at Barton Pond. Again, this is a conceptual drawing. This is not meant to indicate that if this alternative was

selected that this was exactly where the pipelines would go.

Alternatives 4a and d involve treatment near Maple Road and would basically -- it proposes treatment in the Maple Road area. The next slide shows -- is very similar, but it shows the pipeline to the Huron River going up Maple Road to M-14, and then to the river. So that would eliminate some of the piping of highly contaminated water back to the Pall property.

(Slide 9)

The b, c, and d alternatives under Alternatives 3 and 4 involve reinjection into different parts of the aquifer. The reason for these distinctions is that our environmental statute and rules have different criteria for injecting into groundwater, depending on the concentration of contamination in the receiving aquifer. We are not planning to discuss the details of these distinctions tonight.

Alternatives 3b and 4b call for reinjection into the plume where concentrations are above 85 parts per billion. That is, in Alternative 3b, the reinjection would be done somewhere within this yellow area back near the Pall property, and Alternative 4b would do the reinjection probably somewhere east of Maple Road. Both of these were eliminated due to the unpredictable effects on the plume of such injection.

Alternatives 3c and 4c call for reinjection into the aquifer where concentrations are less than 85 parts per billion, but greater than one part per billion. So in the case of 3c, the reinjection would take place somewhere in the -- you know, very close to but outside the 85 part per billion contour that's shown on this map; and the Alternative 4c would call for reinjection somewhere outside of this area. These two alternatives were retained for more detailed

evaluation.

Alternatives 3d and 4d call for reinjection into the aquifer where there is no contamination. These alternatives were eliminated due to the inability of any treatment system to reliably treat to non-detect, as would be required in this case.

Alternative 3e calls for discharge to the Honey Creek Tributary and this was retained for more detailed evaluation. So this would be the case where the contaminated water was piped back to the Pall property and then discharged to the Honey Creek Tributary where it's currently -- where the other groundwater's currently being discharged.

Alternative 5, the last of the leading edge approaches, calls for piping of contaminated groundwater back to the PLS property for reinjection into the Mount Simon bedrock formation without treatment. That would be located about a mile -- approximately a mile underground into the bedrock, which is not a usable aquifer. This alternative was retained for more detailed evaluation.

(Slide 10)

Alternative 6 calls for capturing the leading edge of contamination, if necessary, after it migrates closer to the river. And this figure you see up here is also one of our handouts. It is similar to Alternative 2 in that it would involve investigation and monitoring of the plume as it migrates. So, there would be some monitoring wells put in to track the migration of the plume.

The contingency for extraction, treatment and discharge would not be implemented unless monitoring shows that downgradient receptors would be impacted above relevant criteria. So if the plume were to take this path and

there were levels that were high enough, they would have to implement their contingency plan and put extraction wells in this area, and then they would pipe it a much shorter distance to the Huron River.

PLS's cost estimate for Alternative 6 presumes that it would take 20 years for the plume to migrate closer to the river, and another 30 years of operation for the contingency treatment system.

PLS evaluated eight of these alternatives in more detail, and Mitch Adelman is going to cover our evaluation of those.

MR. ADELMAN: Thanks, Sybil. The purpose of my portion of the presentation tonight is to briefly summarize the criteria that are contained in the law and the rules that we need to use in order to evaluate remedial alternatives and ultimately make a decision on whether to approve remedial alternatives or not. And the next slide, please, Melissa.

(Slide 11)

Again, as Carrie and others have mentioned, the criteria contained in Part 201 of the state's environmental code govern the rules promulgated pursuant to that code.

(Slide 12)

There are two what I'll term threshold criteria that a remedy -- an alternative needs to meet in order to get further consideration. These two criteria are that the alternative needs to assure that there's the protection of public health, safety, welfare and the environment; and secondly, except as otherwise provided, an alternative needs to attain a degree of cleanup or control of hazardous substances that complies with all applicable or relevant

and appropriate requirements, rules, criteria, standards, limitations in state and federal environmental laws. I'm going to refer to those as ARAR's, because that's a mouthful to say otherwise.

Note that I said "except as otherwise provided" at the beginning of that second threshold criteria. I want to talk a little bit about what that means.

(Slide 13)

In the rules that are promulgated pursuant to Part 201, there's two rules -- specifically Rule 705, sub 5, for example -- that requires that once remedial action starts a plume of groundwater contamination cannot be allowed to expand. Rule 705, sub 6, says that unless there is a documented naturally occurring chemical or biological process to be taking place an active remedy is necessary. Now, our law in section 18 provides for waiving these rules under certain conditions, and after our review of the feasibility study we deemed that some of the alternatives would require a waiver and we'd have to evaluate whether the conditions for that waiver have been met. If we determine an alternative satisfies both threshold criteria, then it starts to get a little more complex, because every site is different. We have to deal with site specific circumstances along with liable parties when they propose remedies need to deal with the site specific circumstances.

(Slide 14)

So we've got a number of balancing criteria that we look at, and these are not necessarily given equal weight among each other. We just have to factor them in all things considered. So, for example, the statute prefers remedies that permanently and significantly reduce the mobility, toxicity, and

volume of hazardous substances. There's a -- in other words, there's a preference in the statute for remedies that treat hazardous substances as opposed to contain them.

Another balancing criteria we use is the effectiveness of that remedy and that effectiveness pertains to the ability to provide protection of public health, safety, welfare, and the environment.

We need to look at the long-term uncertainties associated with the alternative; for example, is the remedy that's proposed implementable over the long-term? Time; how long does it take to achieve a cleanup amongst the various alternatives? That's provided for both in the statute and the rules. And then the cost -- and it's important to note that the cost only needs to be considered among alternatives that are considered to be protective. The costs include the capital costs or the costs of the infrastructure needed to implement the remedy along with the long-term operation and maintenance costs associated with implementing the remedy.

(Slide 15)

Other balancing criteria include reliability of an alternative or a remedy; the potential for future remedial costs if a remedy fails; potential threat to public health, safety, welfare, and the environment associated with excavation, transportation, containment and re-disposal; the ability to monitor remedial performance; and the public's perspective about the alternative. And that's a big reason we're here tonight is to gauge the public's perspective on the various alternatives that PLS submitted along with the alternative that the DEQ has assembled.

(Slide 16)

Now that we've covered that, let's briefly talk about how these criteria -- how we've applied these criterias -- the alternatives presented in Pall's feasibility study. The monitored natural attenuation alternative that Sybil talked about earlier -- again, this is where the plume would be allowed to migrate unremediated and Pall proposes to use some form of institutional controls. DEQ has reviewed this and determined that it doesn't meet either one of the threshold criteria of protectiveness of human health and the environment or compliance with the laws. And some of the reasons we've determined these don't comply include the fact that there is a -- as proposed, Pall relies upon the Washtenaw County Well Ordinance as an institutional control and the DEQ doesn't think that is -- contains the necessary reliable restriction that we would need to see a remedy of this sort.

Other issues we have with that is it doesn't -- again, recall the two rules I mentioned before about remedies needing to be active remedies and the plume can't expand once it starts -- doesn't meet either one of those criteria. So we aren't going to go into balancing criteria for monitored natural attenuation.

(Slide 17)

The next series of alternatives I'm going to look at -- I'm going to lump Alternatives 3a, c, and d together, along with 4a and c, because these alternatives all look at treatment at the leading edge of the contaminant plume. And, again, I don't know if we've gone over the scale of some of this just to benefit -- the Pall property is over in this area. And this is an earlier depiction of the Unit E plume. This is Wagner Road up here; Maple Road; Veteran's Park;

and this is the Maple Village Shopping Center. So as you can see, if you haven't -- if you didn't already know, this is a very large plume. So all these alternatives I'm going to talk about that we've -- apply criteria to evaluate capturing at the leading edge of the plume, and then pipe under various situations, either back to the Pall property or, in a couple of cases, over in the vicinity of Maple Road.

So for all these alternatives we determined that they do meet the threshold criteria of protectiveness and compliance with other laws, and they do this by providing protection in the sense of stopping the spread of the plume and ultimately these would achieve the cleanup standards that Pall is required to achieve. So that takes us into the balancing criteria. Let's look at those briefly.

(Slide 18)

These alternatives do provide for reduction of mobility, toxicity, and volume. With respect to long-term uncertainty, there's definitely some uncertainty, mainly with the time it would take to achieve the cleanup under these scenarios, and the fact that groundwater contamination, if you pump over -- over in this area only, you can see that there's a large area of contamination that's got to migrate over to these extraction wells that would be located down here. And in the interim period of time it takes for the concentrations to decrease to acceptable levels, you've got the chance without any reliable use restrictions that somebody might use that groundwater.

(Slide 19)

Other balancing criteria applied to those alternatives include the

reliability. Currently Pall uses an ultraviolet hydrogen peroxide system to treat their -- the groundwater over at the Pall plant, and that's deemed to be reliable. They're also looking at an alternative which uses ozone and hydrogen peroxide. We think there's a good chance that would be a reliable technology for cleanup and destruction of the 1,4-dioxane. And we know that generally hydraulic containment can work.

Potential for future costs if this remedy fails is relatively low in terms of other scenarios, because hydraulic containment can generally work and there is definitely going to be a need to monitor these alternatives for the long-term and if the system doesn't perform as predicted, then there would be a need to enhance the system and make it work right.

(Slide 20)

With respect to potential threat to protection of human health, safety, welfare, and the environment associated with excavation and transportation and disposal, et cetera, we evaluate this equally among the other -- well, among all the alternatives in this group because they all require installation of piping to move clean and dirty water to various places; although we acknowledge that Alternative 3a provides for piping of the greatest distance. And obviously, installation of a pipeline or of pipelines would cause some temporary disruptions in the area that they would be installed, but not necessarily an insurmountable problem from our point of view.

(Slide 21)

It's also -- Alternatives 4a and 4c deal with reinjection, as Sybil mentioned, and there's a lot of uncertainty associated with reinjection. There

would have to be a lot of work done to better understand the hydrogeological characteristics of the aquifer that they would propose to reinject to to see whether those aquifers could handle that volume of water without causing negative consequences. So that's generally how the criteria looked for those alternatives.

(Slide 22)

And moving on briefly to Alternative 5, which is the deep well injection, again, we deemed that that's got the potential to meet the two threshold criteria. Mobility is controlled as in the last alternatives I talked about by reducing or controlling at the leading edge, but they're not proposing to treat in this alternative. They would just pipe the contaminated groundwater over to the deep well that would be injected approximately a mile underground, and pump it untreated into a -- that deep formation.

In terms of the effectiveness, it's a generally reliable technology. Pall, or previously Gelman, did use this. However, they did choose to not renew their permit and so they are not currently operating a deep well injection. There's some uncertainty about the capability of the deep formation to handle the volume of water that would be necessary to contain the plume, and if this remedy were to fail, it's unlikely that it would result in human exposure that would be a negative consequence. However, there's a slightly higher chance it would result in some negative environmental consequences. And, again, we think that we could monitor this alternative and Pall can monitor it, and it does include transportation via pipeline of the contaminated water.

(Slide 23)

Moving along to Pall's Alternative 6 which, again, is, as Sybil pointed out, letting the plume migrate untreated -- but it's important to note that in the feasibility study they also did include interim pumping measures in two areas. One, in the vicinity of the Wagner Road area over by the Pall plant, and also over in the vicinity of Maple Village; and they included doing this interim response for an unspecified period of time. And we looked at this alternative a great deal and determined that as proposed it does not meet either of the threshold criteria. Either -- it's both not protective and doesn't comply with applicable or relevant appropriate requirements.

Some of the reasons for this include the fact that, as I mentioned, with respect to the interim responses that they have associated with this alternative, they -- over in the area of Maple Village they're proposing to reinject; and, again, we've got the uncertainty associated with whether the formation can handle this without causing negative consequences.

There's also -- if they have to invoke the contingent remedy over in the vicinity of the river -- and I -- Leonard mentioned this, but I want to highlight it again. This is the predicted path of the plume that Pall had in their feasibility study. Great deal of uncertainty associated with that. There's going to need to be and was proposed in the feasibility study the need for monitoring throughout the period of time it takes this plume to migrate further, and those -- the process of monitoring includes installation of monitoring wells and that causes a disruption to the neighbors as some people are probably familiar with, because they've complained to us about that in the past. So the argument that disruption is -- there's going to be less disruption is still somewhat valid, but it,

of course, depends on where -- the actual plume or the actual migration path, along with how many wells they have to install. They wouldn't -- they would definitely have to install less pipeline associated with this alternative.

So, again, as proposed, we deem that this remedy doesn't meet the threshold criteria. It allows the plume to -- I've got to mention the wellhead protection area associated with the Montgomery Well. We -- Leonard and Sybil both mentioned the Montgomery Well, which is one of the city of Ann Arbor's municipal supply wells. As part of its obligations of providing water, a municipality is required to do a wellhead protection study and delineate an area around the well that they need to watch carefully. And the plume in the Unit E is already in its wellhead protection area.

Again, this alternative allows the plume to migrate without adequate institutional controls and -- you know, similar to how I mentioned with monitored natural attenuation. We don't view the county ordinance as protective enough, and while this remedy as proposed is not something the Department of Environmental Quality can approve, we did go through an evaluation of what it would take in order for us to be able to consider whether to waive those two rules that I mentioned earlier, about whether a plume could expand once a remedy starts and whether it can get by without active remediation.

So I want to touch on those conditions just in regards to consideration.

(Slide 24)

In order for the DEQ to consider this alternative, there would have to be a provision for abandonment of the Montgomery Well in the associated wellhead protection area. There would have to be a prevention of any further

migration of the 1,4-dioxane plume beyond the Maple Road area in concentrations in excess of the 2800 parts per billion, and that number is the one that's protective of surface water. However, if the plume were to take a different path, say, down over to this area, which, you know, it's possible and monitoring will have to tell, we'd have to use a different criteria. That would be the unrestricted residential criteria as opposed to the surface water protection criteria.

Another condition that would be necessary for us to consider a waiver is there'd have to be a plan for monitoring any residential wells, and I should mention that these criteria are all highlighted in the fact sheet -- I believe on page 8. There would have to be a plan for monitoring residential wells that are shown to be threatened if, by chance, the plume took a turn over there, for example; and a contingency plan to prevent unacceptable exposure should the plume migrate over that way.

(Slide 25)

Other conditions necessary for a waiver, there would have to be enactment of an acceptable institutional control, for example, an ordinance in the city of Ann Arbor in a specified period of time that would prevent withdrawal of groundwater contamination for human consumption. There would need to be groundwater monitoring to ensure that the contamination above generic residential criterion doesn't underflow the Huron River, and if it did there would have to be a contingency plan to intercept any such contamination; and there would have to be a provision for acceptable disposal of the treated water, whether it be reinjection. There would have to be additional investigation to

determine whether the aquifers could handle that water without a negative effect and/or by shifting disposal to an alternate means.

(Slide 26)

It's really not typical for the Department of Environmental Quality to propose a remedy when a liable party is implementing response activities; however, because of a number of site-specific considerations, including the fact that this is a large groundwater contamination plume, there is a consent judgment in place that requires Pall to clean up the usable aquifers to the state criteria in a timely matter, and that the company's preferred alternative does not meet the threshold criteria, the Department has come up with its own alternative, taking into consideration the information that Pall has put together in their feasibility study and the requirements of our law.

So, with that said, I'm going to turn it over to Sybil to talk about that.

(Slide 27)

MS. KOLON: I just wanted to mention that we've mentioned the Montgomery Well a couple of times, and I'm not sure any of us mentioned that the city has actually taken that well offline and that's not being used. But in spite of that, it's still considered a receptor that the DEQ has to consider because there might be conditions under which the city might have to use that well.

The basis for the DEQ's selection of the preferred remedial alternative is outlined in the fact sheet, and I will briefly summarize it here.

PLS did propose an interim response as part of their preferred remedial alternative, but did not consider interim responses in combination with the

leading edge alternatives as the DEQ had requested. The DEQ has determined that extraction from the leading edge alone is not as protective of the public health, safety, welfare, and the environment as it would be if combined with interim responses.

Interim responses are response actions that do not completely address the contamination, but can be taken to immediately address the contamination without jeopardizing the final remedy. Reasons for taking interim response include speeding up the cleanup and to prevent or minimize injury to the public health, safety, welfare, and the environment. The DEQ agrees with the two locations PLS has proposed for interim response at Wagner Road and at Maple Road. PLS's goal in taking interim response actions, however, is more limited than the DEQ's.

PLS proposes to operate the interim response at these two locations long enough to ensure that they don't have to implement the contingency plan of treating closer to the Huron River should the criteria be exceeded. The DEQ would like the extraction at Wagner Road and Maple Road to cut off further migration of contamination, and to continue until all groundwater upgradient of the extraction meets the generic residential drinking water criteria of 85 parts per billion. So the extraction at Wagner Road would prevent any of this contamination from migrating farther and the extraction at Maple Road would prevent any of this migration that's back here from migrating into this area which, as Leonard pointed out, the concentrations in this area are much lower, and we think that it would be very useful to be able to stop the plume at that location. PLS's proposal is to do more limited extraction of a small -- probably

a smaller amount of groundwater extracted than our proposal would take. Interim responses at both of these locations can significantly reduce the uncertainty involved in extracting at the leading edge only and speed up the cleanup.

Discharge methods are another major factor in this alternative. Once the contaminated groundwater is extracted and treated, a suitable location for discharge must be found. Finding a suitable location for discharge of the treated water has been difficult throughout the history of this site. We believe it is essential to identify a safe and a reliable method of discharge that is accepted by the public in order for this cleanup to proceed.

Based upon the complexity of the geology in this area, the DEQ does not believe that reinjection is a safe or reliable method of discharge, even though it has been favored by some members of the public. The sanitary sewer and storm drain do not have adequate capacity to accept additional water on a continuous basis. Additional discharges to the Honey Creek Tributary do not appear to be feasible for many reasons. Surface water discharge to the Huron River appears to be the only safe and reliable method of discharge, although transporting the treated water will require lengthy pipelines. The construction of such pipelines would be disruptive to the community during installation, but can be mitigated by using horizontal drilling methods in some locations. Once installed, these pipelines would be unintrusive.

In summary, the DEQ's proposed remedial alternative incorporates interim responses at Wagner and Maple Roads, in addition to leading edge capture as shown in PLS's Figure 9. Again, these are conceptual drawings that

are not intended to indicate exactly where extraction and pipelines would need to be placed. This combination of approaches is technically feasible, will speed up the cleanup and better protect public health, safety, welfare, and the environment. The interim responses proposed at Wagner Road are, in fact, in the process of being implemented. We also recommend that the interim response at Maple Road begin in the very near future, using existing capacity in the city's sanitary sewer or storm drain during dry weather. Additional investigation and other efforts required for implementation to cut off the plume at the leading edge can proceed while these interim responses are underway.

You can go to the next slide.

(Slide 28)

And here's the information with the e-mail address, at least, and we also have our mailing address on the information that you've picked up today. We're accepting written comments through August 9th, and we'll now have a representative from Pall Life Sciences come up and make a statement.

MR. WASSERMAN: Thank you, Sybil. My name is Alan Wasserman. I reside at 1435 Cambridge Road, in Ann Arbor, and I've lived in Ann Arbor for 14 years. I know it's warm. It's already 8:00 o'clock. A number of you have come here with things to say. I'm going to try and be brief, but I wanted to let you know at the outset of the presentation that if you lose patience or cannot stay to say what you want to say about either DEQ's proposal, ours, or anything else you wish to vent on, that we have provided stamped, addressed postcards on the back table that you're welcome to take, put down your comment in writing. It will go right to Sybil and it will be treated just as if you had made your

comment in public. I urge you, if you have something to say, to not go away because of the time constraints that we face this evening but, rather, let your voices be heard.

I, along with my colleague, Michael Caldwell, who's sitting out in the audience, represent Pall Life Sciences; and also down in the audience chamber -- and if you could please stand up in the auditorium -- is Mr. Farsad Fotouhi. He is Pall's vice president for corporate and environmental engineering. Mr. Fotouhi prepared the feasibility study and the interim response plan that's being discussed today. You may be wondering why you're hearing from me, a lawyer, and not Mr. Fotouhi. He would like to make a presentation on this study, but I told him that he can't because of a pending lawsuit that has been filed against Pall by the City of Ann Arbor. If you have questions for Pall, we invite you to send them to Mr. Fotouhi in writing. He's at Pall Corporation, 600 South Wagner Road, in Ann Arbor, 48103.

The city's lawsuit seeks among other things an injunction to compel Pall Life Sciences to implement the city's preferred remedy for Unit E, which was not one of the remedies presented today. Because of this tangled situation, as counsel, we have unfortunately had to advise Pall not to have representatives from the company make presentations and respond to questions regarding matters that are subject to the litigation in writing. I should also note that this is not the first time, sadly, that the city of Ann Arbor has opposed Pall's cleanup plans. The city previously sought to block the installation of a state-of-the-art horizontal well which was not discussed tonight that Mr. Fotouhi designed to address groundwater contamination floating towards the Evergreen

Subdivision. We had to go to court for that. After, Judge Sheldon cleared the way for installing this well. The well was recognized by the National Groundwater Remediation Association as the best remediation project in the nation, 1999. In retrospect, that horizontal well has done more to speed up the cleanup than any other well or set of wells that have been installed. We think the city's current suit is similarly misguided, but until it gets resolved we can't allow Mr. Fotouhi to make any kind of presentation in a setting like this. So I'm afraid you're stuck with me.

As with the horizontal well, however, Pall feels strongly that its proposed response to Unit E is both necessary and appropriate.

First a little background. Pall purchased Gelman Sciences in 1997. It should be emphasized that Gelman Sciences had already ceased all use of 1,4-dioxane in 1986. That's more than ten years before Pall's purchase. Pall Life Sciences did not use 1,4-dioxane at all. And in fairness to Gelman Sciences, a trial court, in litigation that was started back in the day, in the 80's, concluded that groundwater contamination resulting from waste disposal practices was explicitly authorized by the state under a series of permits. It should also be noted that when Pall purchased Gelman no one knew about the current problem in the Unit E aquifer.

In 1997, Gelman Sciences was remediating the three aquifers that were known to be contaminated pursuant to a Consent Judgment it entered into with the State of Michigan. When Pall Life Sciences came on board, it immediately began efforts to try to move more aggressively to attack these known plumes of contamination; thus the horizontal well I referred to before. Despite the fact

that Pall Life Sciences did not know about the Unit E contamination at the time of the purchase, we're still here, and we are continuing our efforts to address this new contamination in a responsible manner.

This public meeting is suppose to present alternatives for remediating groundwater contaminated with 1,4-dioxane that's migrating in the city of Ann Arbor in the so-called Unit E plume; and as you know, a series of investigations conducted by Pall with MDEQ approval has delineated the extent of the contamination above 85 part per billion in this plume. The investigation has indicated that the leading edge of that contamination has migrated under Maple Road. It's migrated under Vet's Park. It's now in a residential community on the other side of Vet's Park. That would be in concentrations up to 85 parts per billion.

In early January 2003, after negotiations for using the city right-of-way at that leading edge had stalled, Pall negotiated and received access for the installation of a test well on private property in that neighborhood. The purpose of this well was to conduct a pump test and determine whether it would be possible to intercept the leading edge of the contamination. Almost immediately the city of Ann Arbor organized a public meeting in response to legitimate public objections about the installation of this well. At that meeting, members of the public questioned the need to put the wells and pipelines in their neighborhoods, particularly in the absence of a comprehensive plan addressing the Unit E that showed that that kind of intrusion was necessary. So that is why Pall came up with this idea of a feasibility study. This was a way to address that specific concern.

In doing this feasibility study, we learned a number of important facts. First, we confirmed, as you might expect, there are no residential drinking wells between the 85 part per billion contour and the groundwater in the flow path to the river. As Ms. Kolon stated earlier, no one is drinking water that is drawn from the Unit E aquifer. Everyone is on city water. The contamination is more than a hundred feet below the ground. It does not present an imminent danger to anyone.

Although the city of Ann Arbor has a municipal well called the Montgomery Well, which is screened in the Unit E, the city shut down that well in early 2001 after trace amounts of 1,4-dioxane was discovered. This well is part of the city's lawsuit against Pall. The city gets the water for its public water supply from the Huron River, and we have confirmed that even if the plume were allowed to migrate all the way to the river, which is, by the way, not the remedy we are proposing, it would enter at a point miles downstream from the city's water intake.

Second, we learned that to interdict the plume at any location to stop it completely beyond Pall's facility would require extraction and treatment of a tremendous volume of water, far more than we anticipated when we began the feasibility study. This presents two significant logistical problems. A place would have to be found for treating the groundwater. That place would have to be safe for high voltages, for chemical deliveries, and even for the requirements of homeland security. The other problem was that once water was treated something had to be done with it. The usual way to take care of treated water is to discharge it to a stream or other surface water body. But here the plume is

just currently not near such a surface water body. We've been informed by the city that its sewer and storm sewer lines are not available for purged groundwater. There is inadequate capacity and concerns about system integrity. As an aside, the city uses its sewer lines to transmit untreated purged groundwater containing 1,4-dioxane from its own landfill to the sanitary sewer where it gets discharged to the Huron River. This option is not available to Pall; was not part of the feasibility study.

On balance, as explained in the feasibility study, Pall opted for purging water in a commercial area near Vet's Park and treating the water and disposing of it by injecting it back into the contaminated aquifer. Pall also recommended installation of additional purge wells back near its facility that can be plumbed to the plant and treated and disposed of at that location. Although this program does not completely interdict the plume, it solves a number of the problems mentioned earlier, including what to do with the water. The footprint for the treatment system would be relatively modest when, for example, compared to what would be needed for MDEQ's proposed remedy, and the chemical and power use would be commensurately less. The amount of pipeline would be considerably less and would be limited to a commercial area. We designed our interim response the way we did because we wanted to avoid having to disrupt residential communities by laying thousands of feet of pipeline -- and we're talking 8,000 plus feet, no matter how you draw it -- and installing the extraction wells in neighborhoods. I repeat, under our proposed remedy there would be no pipelines or extraction wells in residential areas. There would be monitoring wells. As Ms. Kolon pointed out, part of the remedy

that we have proposed involves a downgradient investigation to determine the ultimate -- or confirm the ultimate flow path of the water. However, I would point out those monitoring wells would have to be installed under any remedy we proposed. At least, that is the recommendation of DEQ's consultants, so there doesn't seem to be a way to avoid that. A monitor well takes three to five days to install. And for those of you who have had curb repair, storm sewer repair, or other major street repairs in front of their houses, you know that the time line for that is considerably longer. When I had my house done this summer, it was a four-week project with people out there six days a week at 7:00 a.m.

One of the state's objections to our plan is that our remedy would not capture all of the contamination. It only captures the more highly contaminated groundwater, not all of it. Well, we don't think that complete capture is necessary, particularly when it would require tearing up residential neighborhoods, because as we said before no one is going to come in contact with remnants of the plume as it migrates to the river. The areas where the plume is migrating are on city water. As Ms. Kolon and I think Mr. Adelman both referenced, there is currently -- I don't even know if anybody is aware of this: There's a Washtenaw County ordinance that effectively prohibits the installation of any new wells. There are holes in it, which I'll get to in a minute, that DEQ has pointed out, but we believe that's a soluble (sic) problem.

Anyway, by the time the remnant has reached the river, which is miles downstream of the city water intake, it would be quite dilute and should pose no threat to the environment. This is because the remedy involves interim

response upstream as I've just described. However, as an additional precaution, Pall proposed a contingency plan that would involve interdiction of the plume near the river if it were needed to meet the state cleanup criteria. Capturing the groundwater near the river is more feasible because the treated water could be easily disposed of by discharging it to the river. To be clear, however, we fully expect that this would not be needed.

The advantages of this plan are, one, it avoids installation of pipelines and purge wells over widespread, noncommercial areas of the city; two, it is more easily secured and presents less operational risks because of its scope and proposed location; three, it could be implemented faster than one requiring lengthy pipelines. We also believe that since no one does or can drink the water or come in contact with it, this plan is as protective as plans that cut off the plume at the leading edge or at the leading edge in other locations as DEQ has proposed.

Pall has already installed three purge wells in Unit E near its Wagner Road facility and has plans to install a fourth. While MDEQ may not concur at the present time that the interim response proposed by Pall at Maple Road is sufficient for a final remedy, we believe they will look favorably on the proposal as an interim measure only because it gets started on the eastern portion of the plume faster than can be anticipated with the pipelines that are currently under discussion.

MDEQ does not favor Pall's proposal as a final solution. Principal objections are not really related to health or human safety. The environmental objections appear to be that the cleanup will take too long; that there is

inadequate information at this time to assure that Pall's projections regarding the fate of the plume are accurate. While Pall believes that the data it has already presented, which is derived from the city's own wellhead protection plan analysis, shows the fate and direction of the water, Pall has already proposed to resolve this concern by additional investigation. While this investigation is being conducted --

MS. MONOSMITH: Excuse me. Can you please try to wrap up in the next couple of minutes?

MR. WASSERMAN: I've got about 30 seconds.

MS. MONOSMITH: Okay. Good.

MR. WASSERMAN: -- Pall will be implementing the interim response in the Maple Road portion of the plume. As for whether the remediation will take too long, that is a relative term as far as we can tell. While it's reasonable to assume that it would take longer to attain the cleanup standard under Pall's proposal than under the state's solution, no one has yet quantified that difference, nor is there any way to evaluate whether that difference is going to be worth it.

In sum, Pall has proposed a sound, safe and doable solution to Unit E. We ask only that as members of the public you look at the information objectively and make your own decisions if you are so inclined. And please do submit your comments.

MS. MONOSMITH: Thank you. Because the purpose of this hearing tonight is to receive information from you, we will not be answering questions during the hearing portion of this meeting which we expect to start probably in

about 20 minutes or so. Therefore, at this time, we would like to clear up any questions that you may have before we begin the hearing. At this time, if you have questions, please raise your hand and I will call on you as I can. We would like you to come up to one of the microphones in the aisleway here so you can -- we can hear you. Thank you.

Ma'am?

QUESTIONER #1: I guess I was just faster than anybody else. I had a question about the way all of us found out about this meeting. Were we suppose to, by some law, be notified? Because I'm here because of a flyer that was left in my door last -- yesterday afternoon, and I think for people -- I live on Glendale, and we have this little diagram, and part of the DEQ's solution to this problem is to build these pipelines. Well, first of all, I want to know what are these pipelines for? Where are they going to be? And if we're affected, why were we not notified? Because otherwise we would not have known about this meeting. So what are the pipelines for; where are they going to go; and what does this mean to us who live on that street?

MS. MONOSMITH: Okay. Thank you.

MR. ADELMAN: Okay. In terms of how people were notified about the meeting, we used a variety of means. There was a legal notice that appeared in the paper on last Sunday, the 25th of July; and we also have an extensive mailing list, an e-mail list.

QUESTIONER #1: What if we don't have e-mail? Sorry, but we don't.

MR. ADELMAN: Yeah. I understand that not everybody has e-mail and that's a valid point, and that's -- you know, we are -- your question started out

with is there a legal requirement for us to publish notice of the meeting; and, in fact, there is that requirement. That requirement was met when we published the notice in Sunday's paper.

In terms of your questions about where the pipelines would be, what would they be for, and what was the third part of that? Where that would be -- the short answer is there is no --

QUESTIONER #1: What are they doing?

MR. ADELMAN: Okay. The pipelines as proposed in both the Pall feasibility study and in the DEQ's recommended alternative are to transport contaminated groundwater from extraction wells that would be installed to satisfy the objective of capturing the plume of contamination, pipe that water to treatment facilities at either the vicinity of Maple Village Shopping Center and/or the Pall property --

QUESTIONER #1: Glendale?

MR. ADELMAN: Excuse me?

QUESTIONER #1: Glendale? There's something there. It's a street.

MR. ADELMAN: Well, as Sybil said in her presentation, we don't have solid plans yet for where a pipeline would be located. That would be part of a more -- in order to answer that question there would be a more -- need for a more detailed design process, and certainly residents would be consulted once there was -- access was secured and the best engineering plans were drawn up.

MS. MONOSMITH: Yes. This gentleman, please, on the aisle?

QUESTIONER #2: Gerald (inaudible). I live three blocks over. Two

questions, very briefly. One, how does this presentation tonight you're giving interface -- in other words, the City Council -- or something is happening at the city level which appears to be at cross purposes to what DEQ is doing. First question: Shouldn't these be integrated? Second question: In selecting approaches for mediation, regardless of what PLS submitted, what is the technically best permanent solution and why isn't that the way to approach this problem? The technically best permanent solution, would it not be withdrawing at the site of the deep well injection and the original contamination?

MS. MONOSMITH: Thank you.

MR. ADELMAN: Did everyone hear the gentleman's question? Okay. The first part of it was, how does this presentation interface with the city meeting? I believe the gentleman is referring to a meeting that's being held next week by a group called TOSC in conjunction with the city, and that TOSC stands for Technical Outreach Services for Communities. And that group, TOSC, has been involved -- it's basically a consortium of universities associated with the Hazardous Substance Research Centers, and they've been brought in, I think at the request of the city as well as Scio Residents for Safe Water.

QUESTIONER #2: May I interrupt just a second?

MR. ADELMAN: Sure.

QUESTIONER #2: Is there pending action by City Council that will determine the fate of any remediation effort?

MR. ADELMAN: The question was, is there a pending action by City Council that --

QUESTIONER #2: Or any other city government?

MR. ADELMAN: That would affect the --

QUESTIONER #2: Plans for remediation?

MR. ADELMAN: -- plans for remediation? Now, Matt Naud, the city's environmental coordinator, is here and I think can answer that better than I can.

MR. NAUD: Yeah. I'm Matt Naud. I'm the environmental coordinator for the city of Ann Arbor. Can you hear me? To answer your question, the -- I hate to talk to your back. The meeting next week was meant as a follow-up. It's not at cross purposes. It was just -- our feeling was there was enough going on that this meeting might not be enough, and if people left with questions, we had been working with a group called TOSC at Michigan State who's been working with both the city and Scio Residents for Safe Water. We figured this was another opportunity for, one, TOSC to prepare as an outside independent group their analysis of what was being proposed. The city and Scio Residents for Safe Water would also have another opportunity to talk to residents and see if there are any other issues that are outstanding from tonight before we submit our final comments which close the beginning of the Monday after our meeting. So it's not at cross purposes. It's meant to complement this meeting. And so it's another opportunity for you to come. It's going to be at the WISD building on Wagner Road, same time, 7:00 to 9:00. I hate to do two public meetings a week apart, but we felt like it might be needed.

The other question is City Council is not acting in any way on this remediation. We -- the DEQ has the authority in this situation. We comment and we participate. And, again, I'm happy to answer any questions about how

the city -- what -- the role the city has played in this. You can reach me at the city's web site at the environment energy, and I'll leave it at that.

Did I answer the question?

MR. ADELMAN: There was another part of the question; that was, what is the best technical solution to the problem and I'll attempt to answer that. I think the short answer is it depends on who you ask. The longer answer is we think probably the best technical solution, all things considered, is the alternative that DEQ has come up with, and that is to extract contaminated groundwater from three areas. Hopefully, that will result in addressing the source in the area of -- the original source by plant property and shorten the length of time it takes to clean up stuff east of Maple Road, and then it will take longer to work on that from both ends in between Wagner Road and Maple Road. Okay?

MS. MONOSMITH: Okay. Someone else with a question? This gentleman over -- yeah -- in the -- kind of a burnt orange t-shirt -- from here -- maroon maybe?

QUESTIONER #3: I'm a little -- is this -- you don't need this. You can hear me; right?

MS. KOLON: Please -- could you turn it on, please?

AUDIENCE: We can't hear you.

MS. MONOSMITH: We are recording some of this, so --

MS. KOLON: This is being recorded.

QUESTIONER #3: Geez, I didn't know I'd have to be a technician. Okay. I did write this down because I'm really nervous, and I've got to tell you,

as a resident of Worden Avenue, I feel really manipulated at this point. One, because those flyers did arrive at our doors, and I understand that they came from Pall. Okay. But they came anonymously, which really makes me question the motivation behind that. And then where I also feel concerned and manipulated by you folks will be my question. And I had to write it down, because I would never get through this otherwise.

If I understand this correctly, the pipeline proposed remedial alternative would extract huge and unknown volumes of a carcinogen to ground level and transport this through our neighborhoods for another unknown amount of time. We've dealt with some of the drilling and things at our street already. And the information supplied tonight by the district supervisor supplied few absolutes. I heard a lot of "not sure," "might be," "could happen." So what I'd like to know is how is we, as people living on the leading edge -- how ironic that is -- feel that the risks -- can feel that the risks that are associated with this pipeline, including our health and our property values, can be considered -- how we can consider this a viable alternative when you can't provide us with absolutes. And -- I'm sorry -- I don't remember your name -- the gentleman in the blue -- I mean, the whole thing you said -- almost everything was "an unknown amount of this"; "we're not sure if that would work"; "this could go this way." So we're supposed to be subjected to this carcinogen being extracted, brought up to ground level, our street level, driven through our streets? I mean, how do you make me feel that this alternative is something I should even consider and feel, again, not manipulated by?

MR. ADELMAN: Okay.

QUESTIONER #3: I know that was horrible. I'm sorry.

AUDIENCE: Well said.

(Applause)

MR. ADELMAN: The pipelines that are talked about in the feasibility study and that are included in DEQ's alternative would not come to ground level. They'd come to near ground level.

QUESTIONER #3: But that you would extract the carcinogen to ground level to transport it; correct?

MR. ADELMAN: Not necessarily. Probably --

QUESTIONER #3: Well, here's my point: "Not necessarily"?

MR. ADELMAN: Well, no -- I mean, I can't say for sure until a design is put in place, but typically --

AUDIENCE: Well, then --

MR. ADELMAN: Let me -- can I answer?

QUESTIONER #3: No. I'm not going to say (inaudible) --

MS. MONOSMITH: Let him answer the question, please.

QUESTIONER #3: No, wait. Because you're saying you can't say for sure. My question was: If you can't say for sure on anything, including the beginning answer of my question, how can I take this as viable?

MR. ADELMAN: Well, the -- I believe the cost that we come up with in the feasibility study -- well, I know the cost that would come up with -- talk about underground pipeline. You do have to bring the contaminated groundwater from the subsurface up to near the surface. Oftentimes we do that by hooking

up the extraction well to the pipeline underground. I have -- we have not designed the system -- whatever remedy gets implemented over here is going to be implemented and designed by Pall -- that's going to be our goal anyway --

QUESTIONER #3: And we're safe with that?

MR. ADELMAN: And so, you're right, I can't provide certainty, but typically, you know, the extraction is done, subsurface, and the stuff is piped through pipelines to transport it to the easiest place to treat it. Now, to the extent that contaminat- -- groundwater contamination exists in residential neighborhoods and needs to be addressed because the law says it needs to be addressed, and to address the human health and environmental consequences of the contamination, you can't -- you've got to look at the best place to treat it. Do you want the treatment plant right in your backyard or do you want it in a better location? If you want it in a -- you know, not in your backyard, you've got to look at alternative locations, and then you've got to move the water from the place the contamination is located to the place you're going to treat it. It's really as simple as that.

QUESTIONER #3: Okay. But at the beginning you said you're not sure that they would have to really move that, but then you're saying they would have to move the water. I mean, this is what I -- I mean, this -- it's going to have to be transported at some level; correct?

MR. ADELMAN: Under a groundwater extraction scenario, yes. The groundwater needs to be pumped up and moved. There are two alternatives in the feasibility study that do not call for groundwater extraction. The first one being the monitored natural attenuation wherein the plume would be allowed to

migrate without extraction. The second one would be their preferred alternative where they would allow the plume to migrate 'til it approaches the Huron River and if the concentrations are below that that's protective of the surface water and there's no residential wells that are at risk of being contaminated, then they wouldn't do any extraction.

QUESTIONER #3: Right. And I understand all that. I appreciate that. Again, what I'm just saying is you're asking an awful lot of us residents I think to be dealing with this very frightening scenario in terms of our property value and our health. When we don't -- you're the people we are suppose to be able to trust, and then --

MS. MONOSMITH: I would encourage you to make your statements like this during the hearing portion.

QUESTIONER #3: Oh, I will. Thanks.

MS. MONOSMITH: We're only going to have time for probably just a few more questions, depending. Ma'am?

QUESTIONER #4: My name is Tammy Browning Smith, and I live on Maple, and I have a question. I know that you do not have the pipelines mapped out, but do you foresee any sort of taking or eminent domain issues; and, if so, is that included in the feasibility studies as far as costs?

MR. ADELMAN: Did everybody hear the question? I don't foresee takings issues associated with this. I don't believe that they included -- I know there were costs in the feasibility study for obtaining access to install the infrastructure to implement the remedies. Whether that cost was adequate or not, I don't know. There is -- I think the assumption in the feasibility study cost

was that they would use the public rights-of-way to the maximum extent possible. So that would eliminate the need for the takings and eminent domain issues that you're raising.

QUESTIONER #4: Okay. Thank you.

MS. MONOSMITH: Ma'am?

QUESTIONER #5: Hi. I live on the corner of Doty and Linwood. I also found out about the meeting by the flyer. One thing that I feel is a little bit missing -- and maybe it's obvious to a lot of people, but it's not to me -- some of the ramifications of these -- there's obviously not immediate risk to having someone exposed to the 1,4-dioxane, but I don't even really understand what the impact of exposure would mean. I mean, what do we know about, you know -- if it gets in the drinking water, what does that mean to a human being who drinks that, or if during extraction what does that mean if they open up the ground and somehow, you know -- I don't know, is it a fume? Is it -- you know, I think some of that information would be really helpful. I've got -- you know, we're starting a family, thinking about having more kids. Initially, my reaction to this was how quickly can I get my house on the market?

MS. MONOSMITH: You need to ask the question, please, and save your comments for the hearing. We don't have a lot more time.

MR. ADELMAN: Well, I'll try and answer what I think the question is.

QUESTIONER #5: I've asked several questions, yeah.

MR. ADELMAN: What are the risks associated with it and why would a cleanup be needed, essentially, is what you're asking?

QUESTIONER #5: Yes.

MR. ADELMAN: The primary risks that are driving this are risks to humans from consuming the drinking water. As Sybil mentioned, as a result of the city taking the Montgomery Well offline, they are not drawing in contaminated groundwater right now, so it's not -- the 1,4-dioxane contamination is not in the city's municipal supply. If somebody were to sink a residential well and drink the water for -- the way we -- the state calculates its cleanup criteria -- and I'm not a toxicologist, so I'm going to do my best at explaining this to you -- we have a number of assumptions about how much water people are going to drink on a daily basis and the duration of that. So I believe the assumptions that we base that on are approximately two-liter -- somebody is going to drink two liters a day for -- is it 30 -- ours is 30 years, I believe. And there's a number of other considerations and we've come up with a cleanup criterion of 85 parts per billion. And so that's -- that's -- the risk is if -- we've determined, based on our law and standards, that if the concentrations exceed that and people were to drink concentrations greater than 85 parts per billion for over a 30-year -- or for a 30-year lifetime exposure, that would result in possibly one excess cancer risk per 100,000 people that were exposed at that frequency and duration.

QUESTIONER #5: Thank you.

MR. ADELMAN: Uh-huh.

MS. MONOSMITH: Gentleman here with the notepad?

QUESTIONER #6: I'm Roger Rayle from Scio Residents for Safe Water. The maps you see around the edge here are SRSW maps. The DEQ asked us not to put them up on the stage. So we'll have these available next

week also. And some of these are available on our web site.

How many questions --

MS. MONOSMITH: You need to wait and let him ask his question, please.

QUESTIONER #6: How many questions can I ask?

MS. MONOSMITH: We need to be out of here at 10:00 o'clock tonight, because the school is --

AUDIENCE: Can you schedule another meeting? I mean, after all you work for us. Why can't we here have all of our questions asked? Why do we have to be cut short? You got this stuff out at the last minute. We haven't had a 30-day comment period. We're having about a seven- or a ten-day comment period. I think we deserve better from our government.

(Applause)

QUESTIONER #6: I'd add to that why is it that SRSW was notified only this morning that this was also a public hearing; not just a public meeting?

MR. ADELMAN: Well, let me answer the woman's question first. We'll do everything we can to try and address all the questions. The constraint we have here is the time that we have to be out of the auditorium. We do want to allow ample time for people to get their public comments in during the hearing portion. So we'll try and take as many questions as we can. We've got an hour and a half before 10:00 o'clock.

QUESTIONER #6: Yeah, but --

MR. ADELMAN: In response to Roger's question about why SRSW was notified at the so-called last minute, you guys are on our mailing list. The public

notice went out. It says clearly it was a public comment -- public meeting and a public hearing.

QUESTIONER #6: No, it didn't.

MR. ADELMAN: It sure does, and it says that in the notice that was in the paper.

QUESTIONER #6: No. It says, public comment information. To add -- a public meeting to be held Wednesday, July 28, from 7:00 to 9:30 p.m. at Slauson Middle School. It doesn't say anything about public hearing. I think you should cancel the public hearing, because during the public hearing you're not going to answer any questions.

AUDIENCE: Correct.

QUESTIONER #6: You're only going to hear comments. We want to know some answers, and I've got pages of them here, some of which are misstatements by you and by Pall. Now, we have to have answers to these.

(Applause)

MR. ADELMAN: Well, again, you know, we did the public notice. You knew when our quarterly meeting -- we have quarterly meetings with you --

QUESTIONER #6: This is not a public hearing. It was not public noticed as a public hearing.

MR. ADELMAN: -- and we told you that we were going to take public comments on -- that was -- it's necessary to meet the time constraints that we've got --

QUESTIONER #6: Why?

MR. ADELMAN: -- in order to have a decision to the court on

September 1st.

QUESTIONER #6: This was not notified (sic) as a public hearing.

AUDIENCE: But we were just --

MR. ADELMAN: Well, I respectfully disagree.

MS. MONOSMITH: So -- yeah.

MR. ADELMAN: Do you want -- do you want to get into some questions for us, Roger?

MS. MONOSMITH: We're not going to take on that one here. It's noted.

MR. ADELMAN: Do you want to give us some questions?

QUESTIONER #6: But because of that we're not getting answers to our questions. The time that's going to be taken away from the public meeting portion to hold this last-minute ad hoc public hearing is not -- we're not going to get any answers to our questions.

MR. ADELMAN: Well, let -- how about spending five minutes asking questions and trying to give us (sic) answers, and let other people get their questions to us, too, and let's see where it ends up?

AUDIENCE: Five minutes? We're bored.

QUESTIONER #6: Five minutes?

AUDIENCE: (Inaudible)

MR. ADELMAN: For Roger. For Roger.

AUDIENCE: We can give you our comments in writing.

MR. ADELMAN: That's true.

AUDIENCE: We can take the whole rest of the time with questions.

MR. ADELMAN: Well, there are -- there may be people that want to give

their comments verbally here tonight, and I don't want to take away their opportunity to do so. So, Roger, please ask some questions.

QUESTIONER #6: How many would rather have questions answered tonight rather than just making statements tonight?

(Show of hands)

QUESTIONER #6: Because once you make your statement, you're not going to get any more questions answered, you realize that?

MS. MONOSMITH: Roger, do you have questions, please?

QUESTIONER #6: When you stated that there was no knowledge of the E Unit contamination prior to 2000, were you not aware of the Gelman data that showed that in 1993 at least one well had three times what the cleanup standard was at that point, which was three parts per billion in 1993? And in 1993, the DNR at that time allowed Gelman to go three and a half years without sampling it and then another three and a half years once it was the DEQ and Pall to go without sampling this well.

MS. MONOSMITH: Okay. Let --

QUESTIONER #6: Were you aware of that data when you made that statement, there was no E Unit contamination before 2000?

MS. MONOSMITH: Thank you.

MS. KOLON: I'd have to say that the particular well you're talking about -- it was -- I was not aware that that was in the Unit E. It was not clear that that was in the Unit E.

QUESTIONER #6: Well, it's in the Pall data as being a Unit E. The problem is the Pall data somehow avoids the pre-1995 data.

MS. MONOSMITH: You need to ask questions and --

QUESTIONER #6: So why is that? Why would you let Pall hide some of the data?

MS. KOLON: Well, that was certainly not the intention and what we are trying to do here tonight is ask questions on how to move forward. That's history. We're not -- we can't deny that that well was determined to have concentrations of dioxane in it.

QUESTIONER #6: But that was a seven-year time period that we could have been doing something about this --

MS. MONOSMITH: Okay. We --

MS. KOLON: I don't think we should be arguing about that.

QUESTIONER #6: -- and not be so time constrained that we're limited to five-minute questions within this two-week time period that we have to make public comment. I mean, this is crazy.

MS. MONOSMITH: Okay. I'm going to have to ask that somebody else have a turn now. Thank you. Ma'am?

QUESTIONER #7: Good evening. My name is Rita Loch-Caruso. And I first want to thank the MDEQ for putting together this presentation for presenting the various alternatives and your analysis and for proposing a remedial alternative. I think this is a very difficult circumstance. This is a place that I think most residents in Ann Arbor thought would never happen; you know, see no evil, hear no evil; "This is someone else's problem. It's not going to be a problem on my street."

My question is concerning the proposed remedial alternative. The DEQ

is proposing, as I understand it, the pumping at the Gelman site, three wells pumping at Maple, and three wells at the so-called leading edge. And the problem I have or the question I have concerns whether the pumping at Maple and at the leading edge will, in fact, draw contamination to that site, to that area, draw contamination towards Ann Arbor at a greater rate. In your presentation you mentioned that you thought that the Montgomery Well pumping may have facilitated the drawing in of the contamination towards that neighborhood. So my question is, one, why isn't extraction proposed to be more vigorous at the most contaminated site; that is, at the PLS site itself rather than at Maple Road and rather than at the leading edge? I know you're saying you're going to pump less vigorously at the leading edge, but still it doesn't seem like there is enough pumping further back at the most contaminated area.

Second question, doesn't this strategy increase the risk of drawing contamination towards the city?

Third question, what plans will be put in place to monitor for this possibility and to take corrective action? Thank you.

MS. MONOSMITH: Thanks.

MR. LIPINSKI: On the first question as to why isn't the pumping being done -- why can't we just pump at the Gelman property, the groundwater is flowing towards the city whether or not we're pumping or not. The problem with -- when you're pumping it's hard to pull contamination back. You know, it's easy -- if you pump -- start pumping wells what you're going to mainly capture is what's moving towards them. You will draw some water back, but you won't draw a lot. There's -- it's just not -- you could not pump enough at the Gelman

site to pull things back from Maple Road. It's just not possible.

QUESTIONER #7: But I think that the concern is not that we're going to be pulling it back from Maple Road, but somehow there has to be the balance, the right balance of volume of pumping where Maple Road will actually pull the contamination from PLS. That's my concern. What are we going to do to ensure that with this complex geology that, in fact, we're not going to pull contamination towards Maple?

MR. LIPINSKI: Well, whether we pull it -- whether we pump or not, the contamination is moving towards Maple. That -- you know, it's been moving that way. It's gotten there. And what we're saying is we'll put wells there that will keep additional contamination from moving past Maple. It will move -- you know, whether or not we're pumping there, it will continue to move. It may move a little faster due to the pumping, but if the well is properly placed, as it's moving it's going to move towards those wells and be, you know, basically pulled out of the aquifer.

MS. MONOSMITH: Okay. This gentleman, please?

MR. ADELMAN: Well, there was one other portion. Maybe I'll --

MS. MONOSMITH: Oh.

QUESTIONER #8: Excuse me, Mr. Lipinski, I believe?

MR. LIPINSKI: Yes.

QUESTIONER #8: Are you aware that when the cleanup started in the Evergreen area the average concentration of a series of wells there was approximately 60 ppb? After you started pumping, it raised 800 ppb?

MR. LIPINSKI: Yes, I am.

QUESTIONER #8: And you proposed the same thing for this solution; is that correct?

MR. LIPINSKI: Whether that well would have been pumping or not, that contamination would have moved to Evergreen.

QUESTIONER #8: Are you aware that when you accelerated the pumping the rate at which the contamination moved increased by a factor of two?

MR. LIPINSKI: Whether -- I repeat, whether or not you pump those wells that contamination would have been there. What the wells do is they removed the contamination; they capture it. If you don't put the wells there, the contamination -- while it may move slower -- it doesn't get captured.

QUESTIONER #8: And if you put the wells upstream, you might block the high concentration from getting there. Is that possible?

MR. LIPINSKI: I believe that's why the wells are proposed on Wagner to try to block some of that contamination. But as I said, some of it would -- it will not pull much back.

QUESTIONER #8: You believe. Can you give me an estimate of the pump ratios? Can you give me an estimate of the extraction? We're talking about 500 gallons per minute in the E Unit aquifer, yet you are extracting 900 gallons or more per minute in the other aquifers and the pollution is not dropping.

MR. LIPINSKI: I disagree. The contamination is dropping in the other aquifers, but we're not here to talk about those.

MS. MONOSMITH: Thank you.

QUESTIONER #8: Would you care to do a mass balance calculation to demonstrate that you are not in compliance or near compliance with the Court order?

MS. MONOSMITH: Yes, ma'am?

QUESTIONER #9: My first -- I have a very short first request. The northwest supply well on Montgomery --

MS. KOLON: Could you step to the microphone? Thank you.

MS. MONOSMITH: Yeah.

QUESTIONER #9: Yes. The northwest supply well on Montgomery and Bemidji is not technically, legally or any other wise called the Montgomery Well, and the citizens on that block have asked for the last year and a half that a technical -- I'm sorry if I'm tickling a funny bone here, but this is a serious issue for us, because we do not want our street and our homes to be identified by name with a toxic cleanup site. That isn't --

MS. MONOSMITH: Okay. Do you have a question?

QUESTIONER #9: I do have a question and my question is: In light of -- my question is about capturing at the leading edge of the plume, especially in light of what -- it appears obvious that that was a magnificent failure in the Evergreen area; and in terms -- and to amplify that question just a tad more, if you'll bear with me -- I'm not sure exactly what part of your mitigating factors you had put into place in order to determine your plan. My understanding is that it's the same as with doctors -- do no harm. The area on Glendale and south of Jackson, east of Stadium at that point has low levels now of the compound. And if we are indeed drawing it in, why is not this criteria being

looked at in terms of not drawing pollution to an area where the parts per billion are within allowable ranges now? Have we thoroughly looked at that and have we notified citizens here that essentially once those levels go up to 85 parts a billion we are notified by letter by -- I assume it's your agency -- that we are sitting on a toxic cleanup site or perhaps my terminology is not correct; and this needs to be disclosed when one makes a house sale.

MS. MONOSMITH: Okay. So your question is --

QUESTIONER #9: Failure; leading edge failure.

MS. MONOSMITH: -- the -- will the plume be drawn towards the well?

QUESTIONER #9: No; no. That's not my question. My question is: In light of the fact that Evergreen capture of leading edge was a magnificent failure, how can you now essentially look at bringing your plan, your pipeline, your purge wells to another area that also isn't now technically a cleanup area, and what guarantees are there -- I mean --

MS. MONOSMITH: Okay. Thank you.

MS. KOLON: I can address the issue of the -- what you're referring to as the failure at Evergreen was it involved the use of reinjection wells and because of the problems with the reinjection wells the water could no longer be extracted and the water got past there. This is one of the reasons why we are not recommending reinjection because it is not a reliable method. If we use the pipelines that we're discussing to move the water away, then the purging can continue and be continuous. The reason Evergreen failed was because the purging was not continuous because of the problems with reinjection.

QUESTIONER #9: Then the question I have is: What study can you

do -- are they gone? I guess so -- in conjuncture with the city and PLS to make sure that what you're dreaming up for this one doesn't have the same disastrous consequence? Where is the science? Where is the model? Where is the overseeing consultant? My understanding is essentially that what you're doing is you have your idea and they may be particularly good ideas --

MS. MONOSMITH: Okay.

QUESTIONER #9: -- by you're leaving it to Pall to do it. Where is the oversight? Where is the model?

MS. KOLON: We provided oversight.

MS. MONOSMITH: Okay. Thank you.

MS. KOLON: We review what they submit. We have technical people. I'm not a geologist or an engineer to -- but we do have the staff who evaluate and oversee this site. And the --

QUESTIONER #9: Could we be provided with --

MS. KOLON: The design would be based on science; and, as I said, if we find a reliable discharge method, we will be able to ease -- it's easy to extract groundwater from and -- to locate where the contamination is and to extract it. The problem is finding a place to discharge it.

MS. MONOSMITH: Okay. I need to -- somebody else should have the opportunity. Yes? Please --

QUESTIONER #9: But could we please have access to your scientist, Dr. Marsten (sic), so that we can ask this person whose recommendations have been contrary to what you're saying?

MS. MONOSMITH: Okay. Would you --

QUESTIONER #9: She had valid -- could we have access to her? Last question, I promise, and I will be out of your hair. Could we have access to the scientists that commented on the points of your plan; Dr. Marsten --

MS. KOLON: Dr. Masten --

QUESTIONER #9: Susan Masten?

MS. KOLON: -- she commented on the in situ testing that was done, and that's not what is being proposed here. Her area of expertise is in in situ oxidation; that's not what we're proposing here. But she is involved with the TOSC group that we discussed earlier and I would recommend that you attend the meeting that is planned for next week, and you could ask for her assistance at that point. But she is not working for the DEQ.

MS. MONOSMITH: Thank you.

QUESTIONER #10: Hello. My name is Vince Caruso. I live on Glendale Circle. I also would like to make a comment about the flyer being inappropriately sent out without any indication of who it was sent from. I'd also like to ask: Has the DEQ taken into account involving residential districts as a major problem for Ann Arbor and that the use of commercial parking lots or nonresidential areas be significantly more important in the cleanup operation in that you're involving, you know, people who are traversing streets -- kids, people who are unaware necessarily what might be entailed in a cleanup on their street? I think that that has to be taken into account in any remediation plan. And involving more neighborhoods in Ann Arbor unless it's completely and absolutely necessary would be a really negative effect of this cleanup.

MS. MONOSMITH: Okay. Thank you.

QUESTIONER #10: Has that been taken into account; --

MS. KOLON: Well, basically, we have --

QUESTIONER #10: -- what the effect on the neighborhoods would be, the effect on property values, the effect on possible exposures being more problematic in a residential versus a commercial or like, --

MS. KOLON: Well, that's --

QUESTIONER #10: -- say, Maple Village where it's a large parking lot where you could isolate the pipes, you could isolate the process, you could isolate chemicals, you can have truck access as opposed to residential areas where you may not have as much space or as much clearance for error? I think that that really is important to this community that we don't have unnecessary disruption of residential areas given the fact that the city of Ann Arbor had nothing to do with this contamination.

MS. MONOSMITH: Okay. Thank you. She'll answer your question.

QUESTIONER #10: Thank you.

MS. KOLON: Well, unfortunately, we can't dictate where the contamination has migrated to. Yes, we agree that pumping at Maple Road and trying to use that area is a lot more reasonable and can create a lot less disruption to the public, but our statute requires us to try to capture the contamination at the leading edge, which is in the residential areas. There are other alternatives. Mitch reviewed some of those, which could apply -- which would have to apply basically for the DEQ to approve allowing the contamination to migrate towards the river. But we would strongly support and do strongly support taking -- doing extraction in Maple Village and, again, we

have to find out -- we have to find a way to deal with the water that would be drawn from there. But if it's determined that there is going to be a cleanup in the residential area, certainly there would be more involvement with the residential community.

MS. MONOSMITH: Okay. Sir?

QUESTIONER #11: My name is Mike Romatowski. I live on Worden Avenue. I guess what I'm trying to assess is you're saying that the potential health risk of the dioxane, if it's above a certain level, is that if somebody drank two liters of water every day for 30 years, that one in 100,000 people might have a higher cancer risk?

MS. KOLON: That is the toxicologist's calculation based on -- yes -- based on studies that have been done with mice.

QUESTIONER #11: So what will -- what will doing what you propose reduce that risk to?

MS. KOLON: Well, ultimately, it is our goal to 85 -- that scenario that you address there -- the two liters of water for 30 years with one in 100,000 -- one additional case of cancer out of 100,000 is calculated from drinking -- with that water being 85 parts per billion.

QUESTIONER #11: And when would that water enter the drinking water system?

MS. KOLON: Well, it -- ideally, it would not, and that is the whole point.

QUESTIONER #11: No. But if it was left alone, how long would it take to get to that and how would it -- if it's a hundred feet below ground, how will it get to our drinking water?

MS. KOLON: Well, I -- if the contamination takes the path as predicted by PLS, it would not get into your drinking water.

QUESTIONER #11: Then what is the point of this? If it's not going to get in our drinking water and the health risk is as honestly as minimal as it seems, isn't this much ado about nothing?

MS. KOLON: Well, potentially it could get to the river at levels that could be a threat.

QUESTIONER #11: In what time frame?

MS. KOLON: Again, possibly 30 to 40 years.

QUESTIONER #11: So, then, after 30 to 40 years it gets into the drinking water, then another 30 years for each of us to drink two liters of city water per day for 30 years, one additional -- you know, and I'm not saying that this shouldn't be done, but it's also -- is this more to generate work for you guys than it is to protect us?

(Applause)

QUESTIONER #11: And what would be the difference in that -- the quality of -- and, believe me, I think these guys at Pall are manipulating everybody, too. I think they put out the flyer and I think they're just trying to stir up trouble -- but at the same time, if we did what they said, what would be the -- what do I want to say -- the extension of that time for that to potentially hurt us --

MR. ADELMAN: Well, let me try --

QUESTIONER #11: -- compared to yours?

MR. ADELMAN: -- and quickly answer the questions you posed. After

the cleanup objective of 85 parts per billion is achieved, the risk would be reduced to that that's acceptable under the state environmental law.

QUESTIONER #11: Which is?

MR. ADELMAN: 85 parts per billion.

QUESTIONER #11: No. I mean, what would be the rate per hundred thousand?

MR. ADELMAN: Anything less than one in a hundred thousand.

QUESTIONER #11: So .98 might be (inaudible).

MR. ADELMAN: Anything less.

QUESTIONER #11: So how much are we going to spend to get that .02 percent, potentially?

MS. MONOSMITH: You --

MR. ADELMAN: So with respect of some of the other questions, we don't know when it would get to drinking water. I mean, if -- right now the plume configuration is as it is in part because the city has stopped pumping the Northwest Supply Well. And there's no part of the plan that Pall has put forward that prohibits the city from turning that well on, and there's certain conditions from talks we've had with the city under which they would have to turn that well on to satisfy the water supply demand for its citizens.

QUESTIONER #11: And then it would --

MR. ADELMAN: So absent some kind of restriction on that use, we have to consider that in our -- in our evaluation.

QUESTIONER #11: So if they turned on that well, then that water would enter into our water supply?

MR. ADELMAN: There's a good possibility of that, yeah.

QUESTIONER #11: Well, I'm just trying to find out, because I'm coming into this whole thing very, very late. Is it a certainty that it would eventually get to the river and into the water supply?

MR. ADELMAN: Well, I think you misunderstood what Sybil said. If it gets to the river, it would -- the likely path it would take to get to the river would be downstream of where the water intake is for the city. So it wouldn't get to the city of Ann Arbor's water supply if it takes the -- anything similar to the projected path that is --

QUESTIONER #11: So then the main concern is if they have to turn that well back on that it would go there rather than -- because really you're -- I think that it sounds like that's a nonexistent issue. If it's -- if it gets to the river, it's south of the water supply. So nobody would be drinking it in order to get this carcinogen. Is my logic incorrect?

MR. ADELMAN: I'm sorry. What --

QUESTIONER #11: So I don't understand why ultimately you're doing this if that -- even if you did nothing and the water plume -- the plume migrated to the river, it wouldn't actually enter our drinking supply.

MR. ADELMAN: Well, again, we don't know. There's some uncertainty associated with what path that is going to take, and there's other --

QUESTIONER #11: And I'm sorry to take up so much time, but do you have any track record with this method that it has worked somewhere?

MR. ADELMAN: What method is that? The extraction --

QUESTIONER #11: The proposed -- your proposed pipeline and

everything.

MR. ADELMAN: Extraction and treatment?

QUESTIONER #11: Yeah. Your proposed remedial --

MR. ADELMAN: There have been a number of extraction and treatment remediation systems installed throughout the state that have been able to achieve remedial objectives, yes.

QUESTIONER #11: With the type of pipelines and everything, because you will disrupt, like, our neighborhood, and it's like, is it worth it ultimately?

MR. ADELMAN: Well, that's -- again, that's a big reason we're here tonight. And I've listed the six conditions under which the DEQ could entertain a waiver of the rules that say they have -- that Pall has to do something, and if the consensus of the majority of the public is that you'd rather have the plume migrate unmitigated, tell the City Council about it; tell us about it, too, and we'll factor it in. But the city has the power to institute an ordinance that would prohibit, you know, the reliable use restriction that would be necessary for us in conjunction with the other conditions that I listed.

QUESTIONER #11: Why would they need to turn that well back on, by the way? What is the scenario where they would need to do that?

MR. ADELMAN: I'm not -- Matt is probably the better person to ask, but -- you know, if something happened to the river where they had to suddenly stop taking water from the river -- there's a big spill, for example.

MR. NAUD: Yeah. A couple things. One, we do have a well in the city and we have shut it down. We're not the only wells in the city. There's three wells at the University of Michigan campus. They're not used for drinking

water. Mike Moran from Ann Arbor Township -- there's a whole set of township islands close to the river that, while there's a lot of pretty straight lines of where they're estimating this plume would go, I would refer to next week's meeting, and Larry Lemke will be talking again, and his quote at the last one was, "If you think the geology is complex on the west side of Maple, wait 'til you get to the east side of Maple." So -- and as someone who lives in Superior Township, if this goes under the river and ends up out that way, you know, you're talking about getting into areas where the city doesn't supply water. You know, there's people -- we haven't even -- we're not even talking about the western side of Washtenaw County.

QUESTIONER #11: So you people on, like, wells and -- that could get into their well water?

MR. NAUD: Right. And, see, we have people literally within the city of Ann Arbor borders who are on wells because they're not technically -- it's Ann Arbor Township property. So while I think we ought to hear all the comments, I'd be very careful about rewarding failures in the past by letting this go. I think it's a good concern. It's a good question to ask: Why would you have your neighborhood disrupted? Valid question. Ask it here and ask it next week. But, again, I'm cautious, but be careful what you wish for.

QUESTIONER #11: Right.

MR. NAUD: Because we don't know when Ypsilanti is not going to be able to use Detroit's water. So, I mean, we're talking about part of this is being a good neighbor and making sure that even though we didn't cause it, it's here now. DEQ didn't cause it. You know, this is a problem that was purchased by

Pall Corporation. They own the problem. It's theirs to take care of. Okay? DEQ -- as Mitch said, DEQ rarely steps up and proposes a solution in a case like this. This is a big deal that they've moved forward and tried to take an aggressive stand on this. I don't agree with every piece of the proposal as it stands. But it won't be final now, and it won't be final five years from now. We'll still be learning more and trying to figure out a way to solve this problem. This is at least a good attempt at trying to take active steps at solving this problem. I know I took more time, but I am trying to answer your question.

QUESTIONER #11: Yeah. No, that's fine.

MR. NAUD: You asked the question about why would we turn on that well? I was the emergency manager for the city for a year. We have long-standing plans of how we can feed water to certain parts of the city if something happens in the Huron. It's where 80 percent of our water comes from. We're very dependent on the Huron River. Let's say an oil spill happens upstream and we can't take water out of there. We'll have to decide whether we would use the Montgomery Well. And, I'm sorry, I meant the Municipal Supply Well. I try. But there is a number of preparedness, emergency scenarios that we might have to make a decision to keep things running. You know, we would let people know, but, you know, we're in a situation where we have to plan for a lot of strange contingencies and, you know, my thinking is we plan to use that well at some point.

QUESTIONER #11: Is there any alternative? I mean, is it -- would it be better to put another well -- and I don't know if this is feasible or not -- put another well somewhere else --

MR. NAUD: Yeah. Well, the Pall Corporation would let you think that, you know, our suit against them means that their people can't talk to you publicly. Now, we've lost the use of a piece of infrastructure that you all paid for. We don't use it anymore. We need an additional source of water. That's what we've asked Pall Corporation to take care of. So we are searching for other sources of water. I mean, we've been doing that for a long time.

QUESTIONER #11: What is the cost compared to, like, finding another site for a new well compared to this?

MR. NAUD: That's -- that's -- we'll do Wednesday.

MS. MONOSMITH: Thank you, Matt, but I would encourage you to go to the city of Ann Arbor meeting next week, perhaps, to ask this stuff. We're fastly running out of time.

At this point, I think we're going to take a very short break and begin the public hearing process in just a few minutes. I would encourage you if you wish to speak during the public hearing portion that you fill out a card so I am able to call you up to speak. We'll start probably in about three minutes.

(Off the record at 9:00 p.m.)

(On the record at 9:05 p.m.)

MS. MONOSMITH: I'm going to go ahead and get started with the hearing portion.

A public notice announcing the Department's summary of the feasibility study and its proposed remedial alternative was published on the DEQ web site on June 28th, 2004, and mailed electronically to those on DEQ's site mailing list on July 7th, 2004, along with the DEQ's fact sheet. A public notice announcing

tonight's public hearing was placed in the Ann Arbor News on July 25th, 2004.

When making your statements tonight, I ask that your comments be limited to the specific topic at hand; that is, the feasibility study, the proposed remedial alternative selected by PLS, and the DEQ's proposed remedial alternative for the Unit E aquifer. We ask that you do not include comments about other aspects of the Gelman cleanup and other DEQ projects, programs, or issues. We will be asking government and organizational representatives to comment first. They will have a five-minute time limit. We will then call upon the individuals that have filled out a card and ask that you limit your comments to three minutes. After everyone who has filled out a card has a chance to comment, we will continue to accept comments from the audience until we have to end.

Written comments regarding the proposed project will be accepted until the close of business on Monday, August 9th, 2004. I would encourage you to write your comments, you know, to the DEQ. You have another week and a half to do so, really. These comments should be mailed to the Remediation and Redevelopment Division District Office at 301 East Louis Glick Highway, Jackson, Michigan, 49201, or e-mailed to Sybil Kolon at kolons@michigan.gov. These addresses are also on the fact sheet that is available at the door. Time allowing, staff will be able to discuss informally any questions you might have after the formal hearing is concluded.

A final decision regarding the DEQ's proposed remedy for the Unit E aquifer contamination will be made on or before Wednesday, September 1st, 2004. Along with the final decision, the DEQ will issue a responsiveness

summary that contains our official response to the relevant comments and the questions that have been raised. Notification of our final decision will be posted on the DEQ web site, provided to PLS and everyone on our e-mail distribution list.

If you would like to be added to our e-mail distribution list or have a hard copy of the responsiveness summary mailed to you please be sure to add your name to the sign-in sheet at the back of the room and check the appropriate box. A transcript is also being made of tonight's hearing that will be put on DEQ's Gelman web site. If you would like a hard copy of the transcript, please indicate that on the sign-up sheet at the registration table. There will be a copying charge for the transcript, the amount of which will be determined by the length of the transcript. If you have not signed in, we would appreciate you doing so before you leave tonight.

Also, this hearing is being videotaped by Community Television Network and will be telecast several times in the next two weeks or so. A schedule of that telecast is available also at the informational table.

To summarize, the purpose of tonight's hearing is to receive all your questions and comments into the record. We will not present our official response to these comments tonight, but they will be available in the responsiveness summary. Again, we ask that you limit your time to provide an opportunity for everyone to speak. I will try to give everyone a warning when you're getting close on your time.

I will attempt to call speakers in the order in which the requests to speak were received. We are allowing government and organizational representatives

to speak first. When your name is called, please step up to the microphones, tell us your name, and if you can, please spell your last name for the record. A copy of written comments, if you have them, would be appreciated at this time or you can send them in to us until August 9th. If you do not intend to speak tonight but have written comments, please give them to me or to one of the staff members at the conclusion of the hearing, and we'll go ahead and get started.

The first person I'd like to call to the microphone is Simone Strong. She is from Senator Liz Brater's office.

MS. STRONG: Senator Brater couldn't be here tonight, but asked that I come and receive your comments and questions and concerns, and I will take that back from the portion that I got earlier today. And I will look to the DEQ to get the other comments that you make this evening. She's in Boston and was unable to make it tonight. Thank you.

MS. MONOSMITH: Thank you. The next gentleman is Michael Moran, the supervisor of Ann Arbor Township.

MR. MORAN: Good evening. As you indicated, my name is Michael Moran, M O R A N. I'm the supervisor of Ann Arbor Township. I recently became involved in the last six months or so, and am seeking to identify this problem for our residents because it became clear to me that there are township residents within the city limits -- the township islands -- east of -- west of the Huron River that are on wells that are within the likely -- they are designated receptors, which is the polite explanation of the fact that their wells are going -- or are likely to be polluted in the future if this plume runs as -- even

as Pall expects that it will. These people, as I said, are on wells and their wells could very well be threatened. In addition, the Pall problem -- the Pall solution proposes to allow the pollution plume to run to the river in the hope that it won't go under the river and get to the east side of the river.

I have absolutely no confidence in Pall's belief that it won't run under the river for the reason that they apparently are unable to identify township residents that are on wells and blandly state here in this hearing that there are no persons who are on wells who would be threatened if the plume was allowed to run to the river; and I have no confidence in their data given what I've learned as to how it was collected; that they are able to predict in any way the actual migration of the plume that's represented on the diagram that's on the dais there.

In addition, if the water -- if the plume gets under the river, there are very many sections of the township that are not eligible and not able to receive water from the Ann Arbor system. That will leave these people in a position where they are endangered without a remedy.

Finally, for the last several years the city of Ann Arbor and the Ann Arbor Township have been negotiating a water supply agreement and I know from this, the negotiations, the city has been very concerned about finding other sources of water supply because, among other things, there is this distinct possibility of continued pollution of their sources of water. One of those -- one of the negotiations has resulted in Ann Arbor Township, if the agreement is signed, agreeing to allow the city to explore for water in Ann Arbor Township. But if the plume gets under the river, that source will also not be available to

Ann Arbor Township residents.

It is my belief that Pall has been diligent -- diligent? -- has been negligent in not taking diligent action in attempting to reduce the pollution. There are known solutions for dealing with this pollution problem that they have not attempted and have not investigated. It appears to me that they are trying to find a cheap solution to this problem and are not seriously taking into account the danger to my constituents.

I applaud the DEQ for stepping in here and suggesting an additional remedy. I don't know at this point in time whether the remedy even suggested by DEQ is adequate, but I am clearly convinced that the solutions proposed by Pall are inadequate. Thank you.

MS. MONOSMITH: Thank you. The next speaker is Roger Rayle.

MR. RAYLE: First I want to make it clear that I am giving this under protest because the prior notices of this meeting were that it was a public meeting only. Apparently the only official notice that it was a public hearing occurred in one notice in the paper just this last Sunday. So I will have written comments that will go into more detail.

How do we know that any of the plans are not going to mess up and not capture the plume like what happened initially at Evergreen? If you look at Evergreen, it was maybe one-fifth the lateral extent when it was first discovered and one purge well was put in, and I'm sure it was not as deep. I think it was only 60 feet deep, and this is like maybe a hundred -- more than a hundred feet deep. How come -- how can you say that two or three purge wells at a couple of locations is going to capture that much bigger E aquifer? It doesn't make

any sense. I mean, it looks like another Evergreen starting all over again. That's one of the concerns that we have at SRSW.

I think it's good that the DEQ is proposing to cut off the plumes, but let's make sure that we really cut it off. Now, I understand that the DEQ has told Gelman -- told Pall that they must stop the plume at Wagner Road. They must have a goal of stopping the plume at Wagner Road, and I understand that Pall sent back a letter or an e-mail saying, "No, we don't want to do that. That wasn't part of the deal; that we're just going to take a certain amount of mass out." But some of this plume is going to make its way to the river, and according to Pall's own documents, when it's just left to spread like that, it's going to take maybe 20 years to get to the river, and then if it's above what the standards are at that time in 20 years, it's going to take another 30 years to clean up. So we're talking about a 20- to 50-year cleanup if this isn't captured.

Now, why can't we capture it at the source more and the pathway, and we don't even know the pathways? And part of that is because of Pall and Gelman's negligence in not sampling the deep E Units that were available early on. This well I mentioned earlier that went unsampled for seven years -- three and a half years under Gelman and three and a half years under Pall's watch -- MW-30, is their own monitoring well. And yet, in 1993, they stopped sampling that and they weren't resampling that until 2001. Now, when they stopped it was three times what the state standard was for cleanup at that time. It was nine parts per billion. The state standard at that time was three parts per billion. Yet, the company chose to not sample the only E Unit well east of Wagner.

Now, had that been sampled earlier, I think we would have had a little heads up -- maybe seven years' heads up -- on the spread of this plume and we wouldn't be so pressed for time now to try to meet some arbitrary court deadline of cleanup. I mean, if we went seven years by just ignoring this plume and 15 to 16 years total, what's the hurry to clean it up in a month or two -- get a plan in place in a month or two without getting all the questions answered and all the T's crossed and the I's dotted?

Now, I notice that during the earlier presentation the DEQ failed to mention the consultant study that was done, and I appreciate that the DEQ had this done. We met with the DEQ at Liz Brater's behest back in May, and told the DEQ, "You've got to come up with a plan that's going to work, because what we're seeing from the company so far isn't going to work. You've got to come up with a plan that works. But you don't have the expertise left in-house with all the budget cuts over the years. You've got to go outside to get the consultant." And you did that. And we said one more thing --

MS. MONOSMITH: You need to finish up.

MR. RAYLE: -- "You have to listen to what the consultant said." Yet, in this presentation today, there was nothing about what the consultant said about these plans. In virtually all of them the consultant said there's not enough information to say whether any of these plans are going to work. You can go to the DEQ web site and download the consultant study and see it for yourself. But this is the kind of half-hearted effort that we've been dealing with all of these years, and it's important that we get it right. We can't just be going on with the same old, same old. We want a good -- we want a protective,

effective, and community acceptable cleanup, and we're willing to work with the company like we did back in '95-96 when they actually cooperated with us.

MS. MONOSMITH: Thank you. I'm sorry. Your time is up.

MR. RAYLE: So thank you very much.

(applause)

MS. MONOSMITH: The next person is Barbara Schneider.

MS. SCHNEIDER: I cede my time to Roger if he has more comments to make.

MS. MONOSMITH: We would prefer, since you signed the card, that you would use your time.

MS. SCHNEIDER: I prefer to have Roger --

MS. MONOSMITH: All right. Go ahead.

MR. RAYLE: I have many more pages if anybody else wants to cede their time.

MS. MONOSMITH: You're limited to three minutes.

MR. RAYLE: Well, what doesn't go on the -- in verbal form will definitely go in written form, anyway. This business of the plumes cannot expand as being in part of the rules -- where was that rule back in 1992-93 when I was first involved? I mean, look at what the plume has done in the last ten years after it was supposedly captured, after we had a DEQ statement that said, in 1994, that the Evergreen plume -- "The extent of the contamination has been largely determined" -- which didn't pay any attention to this 1993 data that was already known about the E -- "and the expansion of the Evergreen plume is believed to be halted." And that was when they said just the one purge well. And since

then they've had to put in three more purge wells. So why should we believe the DEQ and especially Pall Corporation when they say this is going to work this time? How many times do we have to be fooled before we get it right?

And just a couple of minor points that I'll put in the writing about the so-called E-Unit. If you look at the elevation of that compared to the D-2 -- there's an E-1 that's a higher level and an E-2 that's a lower level -- but the higher level, E-1, is roughly the same elevation as the D-2. Well, is that really part of the D-2? For instance, is the contamination that's labeled "E" at MW-81 behind Knight's -- is that really coming from Evergreen? How would we know? There's no monitoring wells at that elevation anywhere in Evergreen except back where we know there's several hundred parts per billion back at DuPont Circle, and there's a monitoring well they put in there just down from there, MW-77, that also has a couple hundred, 300 parts per billion.

MS. MONOSMITH: Please, you've got about 30 seconds.

MR. RAYLE: So, again, the company has just failed to do enough monitoring, and the consultant study says this. So why are we not getting more analysis done before we go headlong into some solution? Now, I agree that there may be some purging that could be done back near the core, but let's get a total understanding of this site before we go too much farther.

MS. MONOSMITH: Thank you. The next person that I'm going to call to the microphone is Kirk Riley. He's the TOSC Program manager.

MR. RILEY: Once again, my name is Kirk Riley, and I'm the TOSC Program manager at Michigan State University. You heard earlier this evening about another meeting that will be held on this very same issue next week, and

I wanted to give you particulars on that meeting.

Next week's meeting will be jointly sponsored by the city of Ann Arbor and Scio Residents for Safe Water, but also by the TOSC Program. TOSC stands for Technical Outreach Services for Communities. It's an EPA grant-funded program to extend expert, technical assistance to communities, and we will give an independent perspective on this issue at that meeting.

The meeting will be held at the Washtenaw Intermediate School District, which is the district building, which is at 1819 South Wagner Road. I believe that's in Scio Township. Somebody might want to correct me if that's not correct.

AUDIENCE: Right.

MR. RILEY: And it will also be, as this meeting was listed, from 7:00 o'clock to 9:00 o'clock. We'll go later if we need to. Our primary presenter at that meeting will be Dr. Larry Lemke. Dr. Lemke is a senior lecturer at Wayne State University and he's somebody who has studied this issue of the Pall-Gelman contamination for years. And the purpose of the meeting is to provide an overview of the proposal that was submitted by Pall, but also DEQ's preferred alternative that has been spoken to this evening. So I invite you to come out to next week's meeting and hear another perspective.

AUDIENCE: What day?

MR. RILEY: Wednesday, August 4th, a week from today, 7:00 to 9:00.

MS. MONOSMITH: Thank you. The next speaker I have is Patty Benson.

MS. BENSON: I just wanted to clarify, because I was confused when it

was stated before. There's not currently a drinking water standard in the state for 1,4-dioxane. That might -- people might be confused at the 85 parts per billions. That's not been established as a safe drinking water level. It's a cleanup criteria, and it used to be three. This became very important when the initial discharge to Honey Creek started, which is in our backyard. So I think that's -- while it may be peripheral to some of the discussion here, I think that's an important clarification. Thank you.

MS. MONOSMITH: Thank you. Glen Thompson.

MR. THOMPSON: Hi. I'm Glen Thompson. Is this on? Yeah, I guess it is. I would like to make basically three brief comments. The information on this proposed remedial plan has been released very slowly. I have received repeated e-mails saying information is here, but, oops, no table; oops, no supporting information; "It will be mailed to the repository next week." I question even if the Ann Arbor Library has all of the information available and on the shelves now; yet the comment period closes in days.

The second comment, TOSC is partially funded as I understand it by the MDEQ. So your contractor is providing additional information next week, again, days before the so-called 30-day comment period ends.

I would also like to comment that citizens have proposed many alternate options, most of which are variations of the DEQ's proposal and Pall's additional proposal. But, yet, none of our options seem to be considered. Because of the convoluted and mistaken legal interpretations, this process is left virtually entirely to Pall's proposal.

As a final point, the USEPA has an entire division dedicated to the

support and assistance of state and local entities in the case of groundwater remediation projects. I would like to know why their input and their consultation on such a large and difficult matter has not been requested? Thank you.

MS. MONOSMITH: Thank you. The next speaker is Karen Sidney.

MS. SIDNEY: I am glad to see that the DEQ is finally proposing a plan after 20 years of inadequate cleanup by Pall. So I do commend you on that, but I don't think it goes far enough. I particularly like the fact that you are now using the pipeline and it is dumping downstream of where Ann Arbor gets its drinking water. I thank Matt Naud, I believe, who was responsible for that suggestion. Perhaps people don't know that right now most of the water that is pumped and treated -- and it doesn't take out all of the carcinogen, but it is being dumped in upstream of our water.

I wondered since the problem with the cleaning up the core has been there is not a way to get rid of enough of the water, if the DEQ had considered a pipeline from the Pall core site to the river downstream of our drinking water; and if not, why not? I also would encourage the DEQ when they go into court -- the pipeline is a long lead time -- to ask the judge to start making Pall get those right-of-ways now. There is some preliminary stuff that can be done before you have to have final building plans.

And, finally, there has been a history of allowing Pall to experiment on us. The latest was the in situ treatment in Maple Village. It was rather astounding to hear Pall talk about how they cared about the public and they didn't want to endanger them, and yet when Susan Masten was at the last TOSC meeting she talked about how dangerous it was to do that treatment;

and, yet, we were doing it in a shopping center across from a heavily used park. So I certainly hope in this proposed cleanup that you don't allow Pall to use some experimental treatment systems and that you make them clean up the water to a fairly clean standard before they dump it.

MS. MONOSMITH: Thank you. Next speaker, Mike Romatowski.

MR. ROMATOWSKI: As I said earlier, I am new to all of this. I'm not a technocrat who gets to decide, you know, what should best be done for people that I don't live around. I'm not a government official that seeks money or votes or whatever, or I definitely don't trust any corporation. However, I just wanted you guys -- to urge you to make sure that we're a partner in all this. We are the people who are affected by it. It's our yards. It's our streets. It's our lives that are going to be most affected by it. And while I'm sure probably, you know, all of us are -- you know, want to be good citizens and, you know, help the common good, we don't want to be shut out. And I sense a certain amount of arrogance on -- I'm sorry -- your parts in terms of, "Gosh, we know what's best for you." I think you should be sure to make it inclusive of us so we understand exactly what's going to go on, because it's going to affect us; our quality of life, our neighborhoods, the water being pumped just below the surface from depths of a hundred feet. So I understand Ann Arbor Township's concerns about it getting to the wells, but at the same time, how does it affect us now if they're pumping it, as Chris said, just below our streets?

And so I don't think there should be any rush into judgment on this. And hopefully I will get more information at the other meetings that are going on, and I think I can make a pretty informed decision at some point along here. But

I do think it's sad that the thing that propelled me to here was not your perfunctory obligation of putting the notice in the paper, but that -- Pall-Gelman's putting out a flyer probably to incite some kind of, you know, mini riot in terms of this.

So please include us in this. Keep us informed, and don't forget, we're the guys that pay you.

MS. MONOSMITH: Thank you. The next speaker is John Psychas. Sorry about that.

MR. PSYCHAS: No, you're right. My name is John Psychas, and I work for Pall Corporation. I've been there for 13 years, and the flyer that was put out was put out by me and a couple of my co-workers. It was my idea. I live on Evergreen in Dexter. I am a homeowner in this plume. I worked for Pall Corporation for 13 years. The gentleman that just spoke would not be here tonight had I not put a flyer in your doorway, and there's about 40 other people that wouldn't have showed up tonight were it not for that flyer.

The pipeline they put down my street was put down with not any notice from the state, and I got a lot of yelling from my neighbors, and it's taken me ten years to make friends with my neighbors, because I keep them informed as a homeowner and as a blue collar worker for Pall Corporation. I'm not an executive. I make my hourly rate. And Pall Corporation is doing a pretty good job in my impression, in my opinion, of this cleanup. But there's a lot of miscommunication that goes on.

Roger, you should be in Boston tonight. You'd do well on stage there. Roger has done a great job for the citizens. He loves to talk and he talks well.

But he takes up too much of your time. This is a serious, serious situation, and we need to talk, not against each other.

Mr. Naud, why don't you tell these people what a pipeline is -- involved? Every 400 feet the city requires a manhole to be built for a pipeline that goes anywhere in the city. My street, Evergreen, has no less than three manholes. They are that (indicating) big around, three hundred pounds. The water comes up about 15 feet below ground level in the pipeline. You rip up the street, even if it's bored, you still have to come up to put in the manhole. The manholes are required to be checked bi-monthly. Well, I don't know how many manholes it is between Doty Street and Maple Village or Wagner Road. There's an awful lot of manholes. It's a lot of digging. So it's not just a simple pipeline. And it does -- the man in the hat back there -- bring the water up 15 feet to 25 feet below ground, rather than the hundred to 300 feet where it's at now.

MS. MONOSMITH: Please. You need to sum up, please.

MR. PSYCHAS: Okay.

MS. MONOSMITH: Not too much time, like about five seconds.

MR. PSYCHAS: Somebody -- I used to get very confused as to what two parts, 85 parts, 900 parts per billion was. So a Ph.D. explained it to me this way: If you filled Michigan Stadium to the top with white ping pong balls, and then throw in 85 orange ping pong balls, mix it all up, that's 85 parts per billion.

MS. MONOSMITH: Thank you.

MR. PSYCHAS: Thank you.

MS. MONOSMITH: Next speaker, Chris O'Brien.

AUDIENCE: He's not (inaudible).

MS. MONOSMITH: Next speaker is Rita Loch-Caruso. I'd also like to remind you to please state your name when you get up to the microphone and spell your last name, if you would. Thank you.

MS. LOCH-CARUSO: My name is Rita Loch-Caruso, L O C H - C A R U S O, and I am not only a citizen in an impacted neighborhood. I am also a member and chair of the Ann Arbor City Environmental Commission, and I'm a professor and interim chair of our Department of Environmental Health Sciences at the University of Michigan.

I wish to stress the importance of any plan to contain contamination and urge that any action not be delayed too long. Contamination of groundwater is, in my opinion --

MS. MONOSMITH: Please speak into the microphone. We're recording.

MS. LOCH-CARUSO: I'm sorry.

MS. MONOSMITH: Thank you.

MS. LOCH-CARUSO: Contamination of groundwater is not a trivial matter. Before dioxane contamination, Ann Arbor had a clean water source in the Northwest Supply Well. Ann Arbor has only two supply wells for drinking water; one of which is now closed. Ann Arbor draws the majority -- sometimes as much as 80 percent or more -- of its drinking water from the surface water of the Huron River. Surface water tends to be more contaminated and problematic as a drinking water source, and climate change disruptions may have unknown implications; for example, drought, which can increase contamination. Moreover, the other supply well may be threatened by the

dioxane contamination down the road. We don't know what happens in ten to 30 years with this plume. I think it's important to note that the projected trajectory of the plume is from the PLS model and the details of that modeling have not been shared publicly or with regulatory agencies.

I also want to briefly address this business of parts per billion and cancer risks. I am a toxicologist by training. Cancer risks should not be minimized, either. Based on rodent-drinking-water studies conducted by government laboratories, it is estimated that dioxane concentrations exceeding three parts per billion would increase the risk of cancer death by one in a million; and that is the criteria in using the standards that are most commonly applied for setting drinking water standards; one in a million, assuming a seven (sic) year lifetime of drinking water. Different standards -- lower standards are used by Michigan.

So for these reasons and others elaborated by other speakers, I urge action to contain any further spread of the plume and to prevent contamination of additional properties and water sources. Thank you.

MS. MONOSMITH: Thank you. Vince Caruso.

MR. CARUSO: Hello. My name is Vince Caruso, C A R U S O, a member of the Allens Creek Watershed Group and I live over on Glendale Circle.

I would like to state that I think the 85 part-per-billion standard is invalid. It was initiated by the Engler Administration. I think it was inappropriate. I think it should be replaced with the three-part-per-billion before John Engler was governor. I agree that the MDEQ should ask the EPA to assist in any effort to

maintain the quality of a very important resource in Ann Arbor; that being groundwater. I feel that the city and the DEQ should also contract with an independent consultant to give independent and unbiased opinions on modeling groundwater flows as such.

I do not feel like it is prudent for the DEQ to propose pulling more concentrations towards the leading edge where it is not at high concentration currently. I don't feel like it's appropriate to involve residential areas with pumping, purging, and pipe installation unless it's completely and absolutely necessary, which does not seem to be the case as of yet, considering the low level of scientific involvement in these processes, in my opinion. I feel like we should have higher pumping at the higher concentration areas, and, if necessary, have a pipe installed at that point to the river to handle the effluent in a safe and effective manner. I don't feel like, from the discussions I have had with others knowledgeable in the area, that the levels that are high in the ground near the contaminated site are being mitigated aggressively, which leads to more contamination of the groundwater. I do not feel like the city of Ann Arbor should give up the valuable resource; that being the groundwater. I think that it is something that we cannot live without. We can live without gasoline and oil, but we surely cannot live without clean drinking water, and that is of the utmost importance, I think, to the city; and we should not relegate the city to an environmental zone.

Pall has contaminated in such that they bought the Gelman Company, and they should be required to clean up to a level of three parts per billion and/or nondetect.

MS. MONOSMITH: You're running out of time. I'm sorry.

MR. CARUSO: All right. Well, I thank you for having the meeting, and I would like to say that we should have a better notice next time of the public comment. Thank you.

MS. MONOSMITH: Thank you. At this time, I don't have any more cards for speakers. Would anyone who hasn't spoken yet like to make a statement? When you're finished, we would like you to fill out a card, please.

MS. PON: I'm Dorothy Pon (phonetic) from Scio Township, and I would say most of my neighbors are all on residential wells. And I just want to -- I'm concerned. How do I know my well is not in the same aquifer as the contaminated one?

MS. MONOSMITH: Okay. Thank you. Would anyone else like to speak? Matt?

MR. NAUD: Sorry. I forgot to fill out a card. Again, I want to thank Sybil and Mitch and Leonard for coming out tonight. These are always hard and, you know -- I want to remind folks we do have a city web site. This meeting was posted in our Tree Town Log, which is how we try and notify people of Planning Commission, Environmental Commission, and other city events. So we try to do our best in that way.

I would like to say I appreciate the aggressive stance the DEQ has taken. I would like to thank Liz Brater, who helped arrange a meeting with the staff here and Director Chester to talk about some of the concerns that citizens in Ann Arbor have -- Mike Gebhard from the county was there, and also Roger Rayle from Scio Residents for Safe Water -- and also John Dingell (phonetic)

who helped bring U.S. Geological Survey into this and helped with some of the analysis.

We'll officially comment in writing, but just some of the comments. I think what's different about the DEQ's proposal as opposed to Pall's not doing anything approach is it actually takes a really aggressive stance at trying to segment the plume and we appreciate that. And I think that's something that needs to happen.

What I look forward to is something that's more of a simultaneous approach. There's been a tendency for one thing to happen after another, and I think your proposal -- there's an opportunity for modeling, site investigation, interim responses, things to happen at the same time, and that's what I look forward to in a final plan.

I do think we need a model of the E. Even the model that Pall has proposed that they claim is confidential, as far as I know, doesn't include the E, and I think there's a lot of opportunity to look at reinjection and some other things if we had a model and could look at that.

I don't think this is a final plan, and I second the comment of one of the residents who said they hope you engage the public; that there's an opportunity to really demonstrate for the first time successful containment of the plume in some of these areas, and then we can talk about whether we need to go into the neighborhoods and -- but with a successful demonstration I think it will be a lot easier to do that.

I think, again, hopefully at the same time we'll be engineering the pipeline, because even if down the road we found reinjection worked, it could

always not work and we'd need some way to get the water to the river downstream of the city's drinking water source.

Lastly, I think you should bid out any work on ozone and hydrogen peroxide, because I wouldn't rely on Pall. I'd rely on a company that's already demonstrated that oxidation has worked at Superfund sites and places like that.

And the last thing I'd say is just to citizens is unlike Pall, I think the DEQ is going to be more likely to work with us and put things like pipelines if they're required in city rights-of-way, which we have offered to Pall on numerous occasions and they've chosen to put their extraction well on a private residence, you know, instead of working with the city where we've said we own 147 parks. We own all the streets. We own all that right-of-way. There's plenty of places that if stuff has to happen it can be done in less obtrusive ways. So thanks again. Have a good night.

MS. MONOSMITH: Thank you. Would anyone else like to speak? We've got about ten minutes left. Some of the people that spoke previously, I would -- they can come up and speak for another three minutes if they would like.

Please state your name and spell your last name, too.

MR. RAYLE: Yeah. Once again, I'm Roger Rayle of Scio Residents for Safe Water. The last name is R A Y L E.

I think the discussion of this site should always include some discussion of how all the different parts of the cleanup relate to one another. This contamination, the E, didn't happen directly to the E. It happened from upper

aquifers. And there are some areas in those upper aquifers that are not being fully investigated. So just like the consultant said, investigation of the E should be done no matter which alternative is chosen. I think that investigation should extend to the upper aquifers as well, especially to some of the shallower aquifers that haven't been sampled for years in some places. And there's like -- eight wells is all there are in the shallower areas. There is also some intermediate areas, one of which I mentioned in the Evergreen area that may, in fact, be connected directly to the E at some point, and there just hasn't been enough investigation of that. The claim that the Evergreen plume is being contained is maybe not true if it's going down to a lower layer and making its way over to the E. So I think that that investigation is pretty important.

So, again, once again I thank the DEQ for engaging a consultant to review the plans, but I really hope that the DEQ actually listens this time, unlike what happened in 1994 when they engaged a consultant and didn't follow through. I'll point out some of the factual errors in my written response; factual errors that were mentioned today during the earlier meeting. Thank you.

MS. MONOSMITH: Thank you. Would anyone else that spoke earlier like an additional three minutes? Please identify yourself again, sir. Thank you.

MR. MORAN: Yes. I'm Michael Moran, M O R A N, Ann Arbor Township supervisor. I don't need three minutes, but I just wanted to say in supporting Roger Rayle's comments about the communication between the aquifers, in the last couple of years, Ann Arbor Township found it necessary to engage some hydrogeological experts to try to understand how the lower --

whether the lower and higher aquifers in our area -- granted east of the river -- whether they communicated and whether there was any interchange between them. We discovered that the hydrogeological situation there is very complex and there was communication between the upper and lower aquifers, but we were unable to determine how and where the communication occurred. But it's clear that it does occur. And, obviously, the situation is complicated by the fact that the data that's available to Pall and the city and the rest of us for the area up to the river is very old because it has to rely on well-log data from the 20's, largely before there was a water study. So this is really an unknown system and additional information to study that system is very seriously needed. Thank you.

MS. MONOSMITH: Thank you. Would anyone else like to speak?

MR. THOMPSON: I would basically like -- I would basically like --

MS. MONOSMITH: Could you identify yourself again, please?

MR. THOMPSON: I'm sorry. Glen Thompson, T H O M P S O N. I'd basically like to concur with the earlier gentleman. We know far less about these aquifers and material than we like to think we do. In many instances, we have wells screened at one depth. They may be screened at the depth Pall chose to screen them; not necessarily the highest concentrations. We may very clearly have places where you've missed the high concentrations. There may be areas where we think are clean that are, in fact, concentrated. This model of the aquifer as a uniform, underground sea is very, very limited. It is a very complex geology around here. The idea of the innerconnectivity is quite probable; and, in fact, one of the things that the USEPA repeatedly mentions is

the importance of measuring static water levels as being both easier, faster, and more important to obtain than concentration. Yet, throughout the past cleanup efforts static water levels have been measured infrequently and, I think quite often, inaccurately.

There's much that can be done to make this cleanup both better and even less costly to Pall. And I hope, I encourage, I challenge you to look for the things that can actually be an improvement, not what appears to be our trajectory to follow a rather rigid, illogical legal interpretation.

MS. MONOSMITH: Thank you. Would anyone else like to speak? All right. I will conclude this public hearing. I will remind you that -- please submit your written comments up until August 9th. The addresses you can contact are out on the fact sheets. Thank you.

(Public hearing concluded at approximately 9:53 p.m.)

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