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THE MEMPHIS DEPOT
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ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 298

MEETING MINUTES
Restoration Advisory Board
March 19, 1998
Defense Distribution Depot, Memphis, TN
Commander's Conference Room

The Restoration Advisory Board (RAB) meeting was held on March 19, 1998 at the Defense Distribution Depot, Memphis, Tennessee (DDMT) in the Commander's Conference Room. The attendance list is attached.

TAPE 1 side 1

Welcome and Introduction

G. Kaden — I really want to kind of start right on time tonight. We have a lot to cover with a presentation at the end, and instead of starting even later, I have not heard from Mondell, I'm sure he'll be here a little bit late, if he was not going to come he would have told us. We have a little bit of review. We have set out the minutes and the schedule, I should say draft schedule, but in the future we will. We have changed the schedule just a little bit; you can all pick one up at the door.

Mondell's not here, so welcome. We have our introductions.

Review of February 19, 1998 Meeting Minutes

G. Kaden: — Let's start with the February minutes first. Hopefully everyone got them. We are working real hard to get them out as soon as possible. We were talking with our human relations people and possibly thinking about doing some kind of transcription which, if we do go that route, they will be a verbatim type of minutes. And there are pros and cons for that. If we do go that route, remember that we are being taped and it will come back verbatim. We'll see how that works. But, does anybody have any comments on the February minutes?

J. English: — I move we approve them.

U. Truitt: — Seconded.

G. Kaden: — Okay. All in favor of approving the February minutes as presented?

General: — Aye.

G. Kaden: — Any opposed? Okay, then let's show we have approved the February minutes as written.

OLD BUSINESS

Review of October 16, 1997 Meeting Minutes

G. Kaden: First order of our Old Business, Review of the October Minutes. We had questions a couple of months ago about those minutes, I guess in November, and what we did to try and solve the problem was we went back to the recording of the minutes and transcribed verbatim what Ms. Young said. And we typed that up and gave it to her and let her review it. And she reviewed that, and then she checked it against what the October minutes said. And they were discussed with Ms. Young, and she feels the October minutes are what she was trying to say. And she thinks the October minutes should stand as they were written. Is that correct?

E. Young: Right, exactly.

G. Kaden: So we left it up to Ms. Young to see if this was a good enough rendition of what her thoughts were. And she says it was. So ... is there any more discussion on that? Thank you.

J. English: I move to approve the minutes for October.

E. Young: Second!

G. Kaden: So we can approve the minutes for October. Okay. The October minutes will be approved and enter the record as they were set out originally.

Charter Review Committee

G. Kaden: I should just like to take a little bit of time here. Ms. Hooks is not here, and I am not sure a lot was done.

(General comments)

E. Young: We have not had a meeting.

J. Garrison: We talked twice.

E. Young: We've talked but, we never had ....

J. Garrison: We didn't meet and talk, we talk over the telephone and tried to contact Ms. Hooks through City Council.

E. Young: But we haven't seen or heard from her since the last meeting.

J. Garrison: I don't know, she's a busy woman. I wish we could set a date and maybe meet here. It would be convenient for you, wouldn't it?

E. Young: It would be fine.

G. Kaden: That wouldn't be a problem. You could use our community relations room.

G. Kaden: Why don't you .... I don't think we need to discuss that as committee members. Why don't y'all get together and give me a call any time. We'll make ourselves and the room available for you.

J. Garrison: What about Janet coming?

G. Kaden: Yes, that's a good point.

E. Young: I'll go by her office. I'll go by there.

J. Garrison: I don't know where her office is .... (indistinct remarks)

G. Kaden: This is ... I'm going to give this to you all then. These are some sample charters from EPA provided to us by Mr. Torres.

(Some indistinct remarks)

NEW BUSINESS

Memphis Sanitary Sewer System

Mr. Jerry Collins, P.E., Administrator, Environmental Engineering
City of Memphis, Division of Public Works

G. Kaden: Okay. Let's go to New Business. Tonight, we want to talk to you a little bit about the Sanitary Sewer System because we will be discharging water from our pump and treat system. And we have Mr. Jerry Collins here from the Division of Public Works, and we moved him up first because I don't think he wants to stay here our whole meeting. But, Mr. Collins ....

J. Collins: Thank you. I just stand at this end of the table and talk to you?

G. Kaden: That's fine ... whatever is comfortable for you. Do you need anything? I mean you can turn out the lights if you want to !!

(Laughter)

J. Collins: I run the sewer system, but you have got to know there are two kinds of sewer. Some people are not aware of this. There are storm sewers and sanitary sewers. And the storm sewers are built strictly for the purpose of conveying the rainwater to the creeks and the river. And the sanitary sewers are built for conveying the slightly dirtier water - that which comes from your home, from your sink, from your toilets, water that comes from local industries - to a waste water treatment plant.

These sanitary sewers are kept totally separate from the storm sewers; they do not intermix. And Memphis is one of the few cities where that is true. In many, many cities the storm sewers and the sanitary sewers do mix together and that causes lots of problems. And because ours are all separate that has actually saved the City of Memphis and all its tax payers lots and lots of

money over the last 50 to 60 years. Our sanitary sewer system dates back to 1878. It was built in response to the yellow fever epidemic. Although the sewer system was built, or began to be built in 1878, we did not have a waste water treatment plant until 1974, almost a 100 years later. So for almost a 100 years, the raw sewage was discharged into the streams and the creeks and the rivers without any treatment. Pretty disgusting.

Then in ... so in 1974 we built the South Plant, which basically serves everything on the south half of Memphis, everything south of Poplar Avenue. And the South Treatment Plant, also known as the T.E. Maxson Plant, is located in South West Memphis, not too far from the Chucalissa Indian Village. Then in 1978, four years later, we opened up the North Plant, which serves everything north of Poplar Avenue. On an average day, we will treat about 170 million gallons of waste water. It's pretty high strength waste water because we have lots of industries that discharge into our system, mostly food processors. And so we treat that waste, and it's discharged into the Mississippi River, cleaner than the river itself.

The system runs very well, and what you pay for sewer service is about $4.50 a month, which is included on your Memphis Light, Gas and Water bill. And you'll be glad to know that we have not raised rates for sewer service since 1982. And in a recent survey of the 122 largest cities in the US, we had the lowest sewer fees. And there is no rate increase in sight, so we hope to maintain these low rates for many years into the future.

Insofar as to how these sewers are maintained, we have about 140 city employees that take care of our sewers. They do several things. Some of those employees are assigned the task of digging up and repairing sewers, should they have a problem. And others are, I guess, have the responsibility of unclogging sewers should they become clogged up because some people put things into the sewer system that don't belong. You would be amazed at what we pull out, like bumpers from 18-wheelers, dead pigs, bowling balls, all kinds of weird things that don't need to be in our sewers. And when they get in there, they tend to mess things up, and sometimes you might see a manhole overflow. And that is usually because somebody has put something in the sewer that shouldn't be there, and our guys go out and remove whatever that object is and get the flow going back to the pipe.

It takes quite a few hours for the waste water to get to the treatment plants. From some locations it takes as long as 24 hours from the time it leaves the house until the time it gets to

the waste water treatment plant. So it's a slow flowing system. It's a gravity system for the most part. We do have a few pump stations but not very many, and most of them aren't very big. They serve a few isolated houses here and there. We do have one large pump station on the end of President's Island; it serves a bunch of industries and pumps that waste water over to the South Treatment Plant. But most of it is a gravity system, and there is over 3,500 miles of sewer lines in our system. So there's a lot of sewers to take care of.

Now, there is probably some reason for me being here tonight, and I'm not sure if I know what it is. So if there is a question that I can answer that would help this committee, maybe I would be more help answering them.

G. Kaden: There's concern about the condition of the sanitary sewer. And we're specifically interested of course, right where we are, where we are going to be discharging the water, trying to get a nice warm fuzzy feeling that it will be able to handle the capacity, as discussed with the City. Is there any chance of the sewer breaking and how will this water affect, if it does break, or if it does break how does this water affect the flow and the handling of it. That's our main concern.

J. Collins: When we build sewers we design and construct them to last approximately 100 years. That's the life expectancy of the average sewer. So, they are going to be there a long, long time. You're not going to dig up sewers very frequently. They are going to be there. The system that is in place is a good system and, thanks to modern technology, many times, if there is a problem, we can fix it without having to dig the sewer up. We can actually put a new piece of a pipe inside the old sewer pipe, by just opening a manhole and haul one in, which is pretty amazing technology. And we can have the job finished in about 24 hours, and that's much, much better than the old way of doing things when we dug the sewer line up and it was a trench sitting there for four or five months. So, the task of repairing sewers is very high tech and relatively fast, and we don't anticipate problems with the sewer system in this area. It's not a 100 years old yet, it's a long ways from that.

Insofar as the flow is concerned, there is plenty of capacity with the sewers in this area. Typically if a sewer does have a structural problem, you won't see sewage come up to the surface of the ground as a result of that, what you'll see is a cavity possibly on the street above the sewer. Because rather than sewage coming out of the hole, dirt usually goes in the hole and

then the sewage washes it downstream to the treatment plant. So, that's what you normally see. It's very, very seldom that the sewage is going to come out of the hole, unless again, if somebody dumps a bowling ball or a pig down a manhole, in which case, you might overflow the manhole.

K. Bradshaw: I have a question. Speaking for most of the residents in this area .... I think their main concern is: once we start pumping, treating and draining this supposedly ..... I'm not saying that we know just yet .... supposedly contaminated water into the drain, I heard .... I think I heard .... some of it is recyclable. Some of the drained water is recyclable and my question is: how will we be able to determine what is recyclable and what is not, once we start pumping the contaminated water through the drain.

J. Collins: Well, I'm not sure what is recyclable. Once the water enters the sewer system, it flows all the way to the treatment plant. And once it gets to the treatment plant, the treatment system is a biological system. We have actually different types of bacteria that eat all the pollutants in the waste water. We don't use chemicals, we just use bacteria. Biomeds ... or what we call bugs. And they actually eat these pollutants. And then the by-product of that process is sludge.

The clean water goes to the river and what we have left is sludge. And what sludge is ... we have so many bugs in the system that are eating all the sewage, and they are reproducing at a very fast rate. And, at the end of the day, we have a whole lot more bugs than we started out with. That's the sludge. And we take that sludge, in the case of the South Plant, to an area where we then apply it onto crop land for the purpose of growing various types of crops. We grow corn, cotton, soy beans, wheat, pumpkins, gourds, all kinds of things. So in that sense, it's recyclable because it turns into a sludge, which is a good fertilizer.

The pollutants in our sludge, are of very, very low concentrations as compared to all the rest of the cities in the U.S. because we have very good neighbors in the industries that use our system, because they are mostly food processors and not so much chemical oriented.

U. Truitt: Prior to my retiring from this place in 1992, we wanted to drop some non-toxic things into the sanitary sewer. Two of them were intravenous sodium chloride and glucose from the medical area, and we were told that we had to ... there was a formula by which we could put it into the sanitary sewer - so many gallons of water to so many gallons of that material. Do you have any way of detecting any illegal dumping into your sanitary system?

J. Collins: Well first we identify all the sources. I should say all the sources that we can possible know about that might be chemicals or pollutants that we don't want. We have very strict guidelines as to what concentrates these chemicals can enter the sewer system. And we don't allow concentrations above those limits. Because: number one, we don't want to have the bacteria in the treatment plant adversely affected by chemicals, and number two, we want to keep the concentrations of pollutants low in the sludge, so we don't have an adverse affect on the crops or the ground where the sludge ultimately goes. So we keep very close tabs and do quite a bit of sampling every day to make sure we are getting the right concentrations of pollutants from all the different sources, from industry, from the Defense Depot, etc. etc. And it's important to maintain that balance; and if some industry has concentrations of pollutants that are above our limits, then we make them go through a separate treatment process on their site before the water gets into our sewer system.

K. Bradshaw: I have a question. From your earlier comment, it seems that the sewer system was designed for two purposes: for storm water and for sanitary water running off the drains and everything. How can you justify treating industrial waste, as far as chemicals that might be (unclear remark) ... and you're taking this sludge and spreading it out.

J. Collins: Well, first of all, we can only spread sludge as fertilizer that meets certain federal criteria, or concentrations of pollutants. And our sludge is a very, very clean sludge as compared to sludges all across the nation. We probably monitor about 160 or 170 different chemicals in the sludge and the concentrations are very, very low and well below the federal guidelines, which are required to make sure that we can do this on crops without any harmful effects.

K. Bradshaw: As far as the chemicals that are being pumped and treated and everything, it was my understanding that there will be some heavy metals in the contaminated aquifer which they will send the water to the treatment plant. And some of them like tetrachloroethane, plus mercury, chromium and arsenic and things of that nature. And was the system designed for that?

J. Collins: There are heavy metals coming from your house. There are heavy metals coming from every source. There are heavy metals in every spoonful of ground that you can scoop up. The question is: what is the concentration of the heavy metals? And will they be harmful? Because they are every place. And the fact is that heavy metals are the one criteria that we monitor most

frequently, most often, and which the federal government watches most closely. And our concentrations of heavy metals in the sludge is far below federal guidelines for proper disposal of sludge.

G. Kaden: I wanted to say one thing. That the water is not contaminated. Right now, we know what we've sampled, and we know what we are going to be pumping out. Not to say that can't change after we've pumped for a while, but we have mechanisms in place to continually check the water with the City, to make sure that we are within the limits and, apparently, they have methods to check it. My final question was, in the area ... where we're talking and we have our slow gravity feed. How will this body of water affect ... I mean it's going to move this sludge or whatever, much faster to the sewage plant in our area. Is that good? Is that bad? I mean I can see where it might be good as long as nothing breaks.

J. Collins: (interrupting) .... the velocity that the water travels at in the sewer pipes is not a great concern to us. The sewer pipes are build at a certain slope so we always have at least two feet per second so we don't have a deposition in the bottom of the pipe. If you put a little extra flow in there it might get to three, four, or five feet per second, but that's okay. It's no big deal, it just gets to us a little quicker, which means that when it gets to us it's going to be a little fresher than it might otherwise be and a little easier to treat.

K. Bradshaw: With all due respect, Mr. Kaden, it was my understanding that the water they are pumping and treating is a threat, a potential threat to contaminate the Memphis aquifer - the drinking water aquifer. And if the water didn't have any toxicity, they wouldn't be pumping and treating it in the first place. I don't want to get into a prolonged debate and I respect your opinions and the opinions of experts, but the water ... the contaminated water from Dunn Field is the main reason this entire base was placed on the NPL Superfund from the documentation that I have been able to get from you.

G. Kaden: That's partly true. I would agree with Mr. Bradshaw that TCE is the concern. It's not heading for the Memphis Sands, and we are hoping to stop it and solve the problem. But yes, there is TCE there and that can be treated.

J. Collins: I would like to make the point that TCE is a volatile contaminant. It tends to ... if you want to call it .... fluff out of the water as the water gets agitated, and it will certainly be agitated at the treatment plant. A lot of those are going to end up being fluffed out of the water at that point. The metals that might be carried

along with it will wind up there and will wind up in the sludge, but you've got combined water from the rest of the city where you don't have the large volumes of metals that might be coming from this facility or from some other industry. So you have got an averaging effect that's going to wind up probably making little, if any, difference in the sludge down at the treatment plant.

C. Gray: And that's the sort of way I was going to go with a couple of my questions if I could bring them in. You mentioned 170 million gallons ... from what I understand the South is the busier plant.

J. Collins: A little bit less flow, but a little bit higher concentrated waste.

C. Gray: Okay. So how many millions of gallons a day are you treating at the South Plant?

J. Collins: About 80 million gallons a day.

C. Gray: 80 million. Our pump and treat system anticipated flow rate is a couple of ...Shawn?

S. Phillips: The first phase...the first seven wells ... we are at about 450,000 gallons. Point four. Per day.

C. Gray: So that equates to one 160th of the flow to the site.

S. Phillips: About half a percent.

C. Gray: Thank you.

S. Phillips: You're welcome.

J. Collins: And I would dare say that whatever is in this water from these wells, by the time we get finished treating it, you'll never be able to tell that it ever came into our treatment plant.

K. Bradshaw: I'm glad about that because I want to remain optimistic because one of the greatest natural resource in the Memphis area is the water from our artesian wells. And it's to my understanding that one well in the Memphis Sands well field has already been shut down because of contamination. And that there is a certain vulnerability to the system and everything. And I surely hope that modern technology and all this will protect our allegedly purist water in the world.

G. Kaden: Any other questions? Mr. Collins, thank you very much. For coming over. You answered our questions and ....

J. Collins: That's okay. I just get paid extra for talking extra, so ...

(General laughter and comments)

If you ever want to come and visit us at the Waste Water Treatment Plant. No one ever comes and visits, no one ever calls.

(General laughter and comments)

G. Kaden: I would like you to know that Mr. Phillips and myself went to the South ... was it the South Plant?

(General remarks)

I was really impressed. I never really realized where it went from the house to the river.

S. Phillips: Go on a day when it is cool though, not when it is real hot!

(Laughter)

M. Williams: Before you go, could I ask you a quick question. At one time you said that some of the water is pumped into the river, right? Okay. At one time there was a lot of fish dying in the river. I am just wondering what was being pumped into the river for the fish to die? I'm just curious.

J. Collins: Most of the fish killed, that have occurred in the Mississippi River in our vicinity ... occurred prior to 1978. And they occurred because we had not finished building all the waste water treatment plants. And raw sewage was going into the river without treatment. And industries didn't have any regulations on them back in those days as to what they could and couldn't put into the sewage system. Once we built the treatment plants, we put strict guidelines on what they could or couldn't discharge into the system. And after that, fish killing stopped.

M. Williams: Okay.

J. Collins: And I have got to tell you, before the raw sewage used to go into the river, that used to be the hottest fishing spot in Shelby County.

(General laughter and indistinct comments)

Greater Memphis Work Group

G. Kaden: I've got three quick presentations. Hopefully they will be quick; I will try and make them as quick as possible so we get into the training tonight. The first one's a quick report on the Greater Memphis Environmental Justice Work Group. There was a meeting February 27th, 1998. We were invited to attend and participate in this session, and it was hosted by the Memphis/Shelby County Health Department in conjunction with ATSDR. The session is facilitated by Dr. Chris Wyatt, who is Executive Director of the Tri-County Health Department in Denver, Colorado. A group of about 40 individuals representing

the public, federal, state, local government organizations participated in the day long session.

Unfortunately neither of our RAB members were present due to an administrative oversight in ATSDR. The final invitations to Mr. Mondell Williams and Ms. Terri Gray were not forwarded in time for them to ... actually they weren't forwarded before the meeting. So they didn't have the time and date and things like that.

A number of individuals and groups made presentations on things ranging on things from: History of Environmental Issues and Concerns in terms of Memphis; Community Environmental Health Concerns; ATSDR Public Health Assessment Revisit occurred; and a review of the State of Tennessee Health Data. At the end of the session, five working groups were established to conduct a dialogue and discussion on these issues. There were: Health Issues, with the lead agency being ATSDR; Environmental Issues, the lead agencies being TDEC and the Memphis/Shelby Public Health Center; Health Care, with the lead agencies being ATSDR and the Memphis Health Center. Health Promotion was the fourth one, the lead agency being ATSDR and the Memphis/Shelby Public Health Center; and then the fifth one, which relates to the Depot, was Cleanup Strategies and History of our Cleanup, and we are the lead agency for that. There will be a follow up meeting June 30, 1998. And we will make sure our RAB members get invited, so we can be there.

Basically, let me say this. The task of the working group on the clean up strategies and history was asked to propose a plan to communicate on how these decisions were made, how we got where we got today. There was some discussion on this and some people talked about the RAB being an ideal avenue to protect the care of this. It was indicated at the session, and I hope I did not speak out of turn for the RAB and that's why I want to bring it up right now. I think we've been doing a pretty good job in reviewing and monitoring how our decisions have been made and where we have been going in the program.

Since we started in 1981, although we weren't in effect until 1994. Besides what we have done here like that, we have increased our community relations activity and we are highlighting a number of our programs, trying to tell people what's going on via our newsletters. We put out facts sheets. Our entire program ... that was the focus of our community information session last month and we wanted the community to ask questions. So, we are not behind closed doors. We are trying to get this word out. I voiced

my concern that if we try to do this at the RAB to bring up, you know, how we are making decisions, how the program ... how it started and where we are and where we are going. It would be very redundant possibly for the RAB because we are here all the time. In fact, I think in January, Mr. Phillips gave a mini-brief overview again.

So, I said that I would present it to the RAB, and if we feel that it would be too redundant for us because we have so many other things on our plate, you know, I then said we would bring it to the RAB, see how they feel about this. However, if there is a meeting ... from what we heard at the session, there is a community concern and need for this information and I said the Depot will make itself available to somehow give this word out. And if the RAB decides we don't want to do it here, because we have already done it, then the Working Group will come up with a method and the Depot chair of this group ... we will come up with a method to get the information out to the community, to the people that want it. And that has been one of our problems, trying to get in touch with the people who need it. I know the CCC was represented and they had questions. So with the CCC, for instance, there's not a problem. We know they have an interest and some of the people that were there, we were a little bit disappointed -- at least on the Depot side, that most of the people there that weren't part of a government agency were right around the Depot. And of course, we want this to be the Greater Memphis group and we want, not only our information, but all the information should be for the entire community. We have good representation of the groups around the Depot, so getting the word out to them, or have an extra meeting or something at the Depot.

That's something we have to decide and we will be able to do that, but the group will form and try to figure out how to reach others in the community. So that's where we are. You know, did I speak out of turn? Would the RAB want to take one of our sessions and present, you know, our history again from 1981 on? I gave them a presentation to my headquarters, it took about an hour and a half to cover 1981 to 2010. It would take more than one RAB session. If you all think that would be worth while to do here, we certainly can. If we don't want to do it here, the Depot will do it, you know, somehow. What are your feelings on that?

C. Gray: If you read the minutes of this body, at least to the extent that we went back to our original formation, you will see how those decisions were made. Now that doesn't include all the decisions. The initial placement in some of the earlier discussions, before we

were formed. But, clearly, you know, once we were formed, decisions have always been on the record, you know well documented through the minutes and to the extent that the RAB might go back and summarize those into a more bite-sized format I think that might be appropriate. But to go back to the beginning here in the RAB process, seems to me not to be what we are about. We are trying to look forward and solve problems that are facing us now to spend money and do it right... or help you do it right ... and to go back and say "how did we get here?" I don't think that's what we were necessarily formed for and a lot of what we have done, at least, is already in the records and can be administratively pulled out.

G. Kaden: That's what I said what I said. However, the need, ... like I said ... you were at the meeting, you saw the community need for this information, so if other people ... whoever ... agree with that I think that we will push on. I just want to report what happened and we might be asking for some help on our committee, the Depot committee, to get this squared up. Because there is a need there, we do need to get out where we are going, and importantly, where we've been.

J Garrison: I have one quick question. Do you have any idea how this ATSDR draft on the Public Assessment Update of these is progressing to sometime down the road, or ....

G. Kaden: The reason we are holding the next session June 30th is because ATSDR has said that they will have the revisit completed in the beginning of June. So, unofficially, we have given them all the information, they have come back with some questions and, right now, even if it's unofficial, we are very comfortable that there won't be changes .... we'll have to wait and see ...

K. Bradshaw: I think from a community standpoint .... I want to say community but the neighborhood, immediately surrounding this Defense Depot area,... the RAB .... I think in fact we have a pretty good idea how the RAB formed and the purpose of the RAB and things like this. But one sticking point we've got is our environmental justice issues and the initiative from ATSDR failed to comply with Presidential Executive Order 12898 which is a order that tries to address the issue of poor and minority community being impacted by .... disproportionately impacted by industry and military facilities. And as far as the RAB goes, I think they've done pretty well in getting the word out ... but for environmental justice issues, I think there is a little that remains that still can be done. And because I don't think ... The people on RAB might be familiar with the environmental justice issues, I think there may be a

member or two who could be updated on it because ... this is not from the community, this is not from ATSDR ... this is an Executive Order signed and in place by the President of the United States. And it has greater ramifications than really what goes on at the Depot because this is for the entire United States and 66% of people of color are being disproportionately impacted and what that means is that blacks, Hispanics, Asians, and other minorities, all the industries that contaminate people are located in their neighborhood, not out in the affluent neighborhood like East Memphis or somewhere.

C. Gray: And from my recollection of how these committees .... the other environmental issues included our discussion of environmental equity as part of what we were there to discuss ....

K. Bradshaw: (interrupting) .... that's what you called environmental equity ...

C. Gray: .... or environmental racism and ... that we agreed to look at that as a part of the other environmental issues, and certainly it is an issue that goes way beyond this site or any one site, to address what our community has done in terms of economic development and the effect that development has upon minority communities that surround it. Because clearly there are a number of issues here .... Mallory Heights, South Memphis .... that go beyond just our discussion and get into a far broader discussion and ..... what we think is more our role .... one -- as a regulatory agency who does that locally and, two -- as the person responsible for more community oriented decisions which is why I agree with Glenn, I think this is one which gets us into the Greater Memphis part of it, not just the Depot.

K. Bradshaw: But the point I didn't make clear was, it's like the Memphis/Shelby County Health Department, the Tennessee Department of Environment and Conservation ... these are state and municipal organizations, but what the Executive Order addresses is, all federal agencies have been ordered to comply with that Environmental Justice Order.

C. Gray: Also, all agencies receiving Federal aid ... which is where we come in because we operate our programs under a number of federal grants ... so we have that same mandate and direction in order to continue our efforts so we are obviously very interested in and involved in trying to assess that within the community beyond the Depot ....

G. Kaden: And that's not the purpose of our group and not to debate, actually, I agree with what you are saying about Environmental

Justice ... and that was covered somewhat in the meeting because, as you know, you were there.

J. English: Can we clarify this point? Is it not the sub-committee that you're involved with and TDEC itself is involved in that sub-committee and there are other people in that sub-committee and I guess I would like to encourage, at this point, anyone that's on the RAB or anybody that's in your immediate community, if they want to be a part of these work groups, become aware of who and what these work groups are.

D. Bradshaw: I just want to add something to it. If you are interested on the community side, you can contact DDMT-CCC because we are choosing community people for the community side. The Agency is responsible for the Agency side. And so it is two different sides ... and it is the Greater Memphis Environmental Justice, so if you contact them, I can, you know put you in. Everybody is invited to these meetings but if you want to be on the working group, you will have to contact DDMT-CCC.

J. English: I would like to get some clarification on this because I was not aware of it.

(Several people talk at once)

D. Bradshaw: We are the one that is responsible for this.

(Several people interrupt)

G. Kaden: This is an outside issue .... or at least wait until public comment, okay?

FOSL Update

G. Kaden: Okay. It's easy to get sidetracked. Let me move on now ... we've got a lot to cover here. I'm going to talk very quickly about FOSLs, and someone's got my map blocked. (Some noise and obvious staging adjustments)

G. Kaden: Last meeting we talked about our Findings of Suitability to Lease that we are ... we are doing right now, we had Parcel 4, with the use of the police complex, and we have the road corridor, right here, and we are talking widening the road. And then our next FOSL was going to be the 20 Typicals. We're still writing. When the FOSLs are finished they will be put in the public record. We have them available, you can call us any time while we are writing them and talk to us .... we're happy to hear from you. Just recently, this Tuesday? This Tuesday, DRC talked to a possible tenant, someone is interested in some of the 20 Typicals. Again, we can't say too much at the time .... you know we can

write a parcel and have someone ready to move in at the last minute, it can fall through. I would hate to get false hopes up in the community. Right now there is someone interested in four of these 20 Typicals and so what we are going to do is come up with FOSL for these four buildings right here because they are category one, they are clean buildings ... of course they are green now but ... be colorblind for a minute please :. these four buildings here are white buildings. They are included in our first FOSL, it was done a year and a half ago ... 1996. So it won't be a hard FOSL to write. So I just wanted to let you know of the initiation of this FOSL right here. I kind of told you that we were doing that, these four buildings right here, are going to be broken out.

C. Gray: Now, I remember we were to clear a path in the middle for the truck traffic .... that will include one of those?

G. Kaden: What the DRC is saying that these four here might go.

C. Gray: Okay.

G. Kaden: So for the truck traffic. And then, of course, we are talking about tearing down, for the DRC, we are tearing down these two buildings here to widen the road for what they are calling the road corridor. So obviously we had to look at that when we looked at the four possible buildings. I just wanted to let you know of the initiation of another FOSL and possibly some more jobs coming.

E. Brayon: If somebody is interested in jobs, where do they go to apply? Are these private people coming in? Are they private or are they ....

(Several people talking at once)

G. Kaden: Shall I call on Mr. Covington to answer that? He's here tonight.

J. Covington: What we are doing is, if we are bringing a company in we are trying to get the personnel that targeted that company to give us an address or phone number so we can publicize it through the RAB newspaper, the newsletter, our own newsletter and to get the word out. We are trying to develop a network now of churches, neighborhood associations, your association and try and put those people together with the personnel that are forming that particular organization. And we have been trying to do this for several months now and from the last RAB meeting, we got more input on sort of how to do that. We are formalizing that now.

K. Bradshaw: I'd like to make a comment. For the record more than for argument and debate and everything. From my knowledge, this entire facility is still on the National Priorities List ... Now I don't

know what phase of clean up isn't completed, but going back to an earlier discussion, Mr. English was referring to the volatilization of these chemicals and things, and I wouldn't say that the entire 640 acres are contaminated but the nature of the chemicals that they are contaminated with and everything may pose a danger to workers and possibly the community. And I just want to make that for the record.

G. Kaden: And I won't to rebut that. Because we need to move on from here. (unclear remark).

Base Closure Team (BCT) Update

G. Kaden: There is something new that we are trying to do, if it's well received, I would like to let you know what we do with the BCT meetings. You know, once in a while someone from the RAB will come there, we try to restructure the meetings, a lot of internal things we are doing. BCT minutes, we've finalized those. Three members agreed, signed the minutes, and the minutes are going to start to be placed in our repositories, public record. Right now we have them but they are not out there yet so they should be going out there very, very soon. It's just a question of putting them in our notebooks and getting them out there, so all our minutes will be, hopefully, within one month of the meeting, they will be out there.

Let me tell you very quickly some of the things that we did today. I've got four items here, we've covered a few other items, but mostly the main items ... our main discussions, there were at least four items I could cover in a minute what took like, you know, two to three hours to do. We talked about .... discussed the schedule for the Dieldrin removal at the housing area. Things are proceeding along with that and it looks like the Corps of Engineers - Mobile, with their contractor, are scheduled to start removal action at the housing area sometime this summer. Again, we are not quite there with the final schedule, but it looks like their contractor will be mobilized in early June and you will see some dirt being moved -- June, July time-frame.

Our interim remedial action, our IRA at Dunn Field, our groundwater, six out of seven recovered wells were installed and developed by March. One recovery well had some construction problems ... actually we had all seven put in but one of them didn't develop properly and a new well is now being drilled. So right now there are six wells that are in, by the end of the month which is only a week away, the replaced well should be in and hopefully developed and we will have all seven wells ready to put on line.

C. Gray: But none are on line up to now.

G. Kaden: Drilled and ready to go. We are still in the process of laying our 2000-something feet of trench. We are about 51% .....

End of Side 1

TAPE 1, Side 2..... (lead in lost) .....

G. Kaden: .... right now

J. English: It's also the electrical and control infrastructure that's just got to be put in up to date.

C. Gray: Could you explain what you mean by "the well didn't develop?"

J. English: We think we had a problem with grout getting down in the stream. We had extremely high pHs, it was returning high pH's. It cleared up after a while but it was also a low yield.

C. Gray: So you weren't getting enough water in and it was an abnormal reading relative to the other wells.

J. English: Right. The other wells cleaned up real good.

C. Gray: Not everyone knows what developing a well is ....

G. Kaden: And there was a possibility that it might have been a construction problem and right now the well company is putting the new well in and it could very well turn out to be at their own cost.

C. Gray: Right next to or in the immediate vicinity of ....

G. Kaden: In the immediate vicinity within 20 feet.

J. English: You don't want it too close.

C. Gray: No. I just wanted to make that clear.

K. Bradshaw: I came to a RAB about five or six months ago, when the pump and treat system was still being discussed. If my memory serves me correct, the presentation at the RAB said they were going to treat right there. Now there has been some kind of plan just to pump and let the city's waste treatment in. But I don't think this was ever discussed at the RAB to my knowledge .... the change in plan. And I want to know why the plans were changed in the first place. Because at the presentation they said they were going to build tents and insulate the community and all that kind of thing. Now from the meeting we had at the school a couple of weeks ago, I was talking to the people that were actually doing the work and they said it wasn't going to be treated on site, it would be pumped and that seemed like a contradiction or something like that of the plan, and it wasn't publicly announced.

G. Kaden: Yes and no. I think you are confusing with the tents and stuff ... that was the removal of our CWM and we were talking about that. But there was ....

J. English: He was right about a part of that. Originally.

S. Phillips: Originally have the extraction wells closer to the source areas and we felt like we would have a higher contamination level and would have to be doing pre-treatment. What they did, they moved the wells over to the fence line and it gave us a lower contamination level from where the extraction was going to take place and if everything works out the way it's planned, of course Murphy could still be around, we expect that the contamination level will be such that it can be pumped straight into the sewers. But, if there is a contamination level above the level of concern, above the level that the City would .... I guess he's gone now ..... but above the level they would accept, there would have to be pre-treatment ... before ...Then when we were doing the pre-treatment, the water would have been able to go right into the storm water system, it wouldn't have go to the sanitary sewer. So it would even be better this way.

M. Williams: What is the difference in the prices for doing the pump and treat on site and letting the city do it. Is there a great difference in the price?

(General laughter)

G. Kaden: You mean to treat? Basically, we are going to be charged the same rate as any industrial facility which is 58 cents per thousand gallons discharged and we looked into building our own treatment plant. We actually started designing a treatment plant just in case something happened .... we didn't want to start from scratch and get behind. And it was astronomical, impossible. Even if we ran this plant for 30 years paying the 58 cents per thousand gallons, it's cheaper than us building a plant. That's not to say we can't do some wellhead treatment, you know, if necessary later on, it won't be that expensive.

Groundwater Sampling - Update

G. Kaden: Two other quick things. We .... hopefully, everyone can talk quickly tonight. I'm sorry ....

Groundwater sampling. We are doing some quarterly sampling ... another round should start I think next week. It usually takes about eight to 10 days, we will have flyers going out as usually and the people who have the wells in their areas will .... you know

it's just time to see the CH2M Hill people out there again. We talked about that.

Dunn Field

G. Kaden: And last night, actually we are going to have a little show and tell here. Dunn Field, while we were putting in the recovery wells, guess what .... we found something. Old bottles of medical supplies. They dug in the ground up there, they found these things. We are trying to research our files and a lot of other different things to find out exactly what these could be. We discussed it at BCT today, we suggested sending photos of these bottles to other military facilities to obtain more information. The bottles were found anywhere from one to five foot levels. I'm going to put some pictures of what we found on the overhead. Up on the overhead, pass these around, if we can do all three at once, so you can get a reference of the size. There's no problem, no risk, because they are buried. There's no exposure at this time.

(Several comments and questions simultaneously)

K. Bradshaw: Finding something that you weren't prepared to find indicates that your archives is not as infallible as you thought they were.

(Several comments simultaneously with laughter)

G. Kaden: There's always a possibility .... I've always admitted that we might not be right on the money. Remember our January meeting when we had the presentation from Parsons and OHM and they went out with the magnetometers and stuff and they found some anomalies. You know they could tell from their instruments that the dirt had been disturbed and stuff and all. And they were expecting to find something, possibly. You know it could be something buried, the dirt could be moved. So the impaction would be different. At times, when they get to those areas, they actually put on a higher level of protection, just in case, to see what's out there. They've actually done testing on the stuff and the stuff is not hazardous. What we want to do is, in case someone in the community, you know, like yourself, asks "What was in those bottles?" Well we can show you that they are not hazardous and it's okay to ship them off but wouldn't you all like to know what it was exactly.

E. Brayon: But that is not really the problem. I think he has a legitimate point. There might be other things out there that are important.

G. Kaden: Oh, exactly, and we will handle it the same way.

C. Gray: Let me relate a story. They are doing some similar work up in Millington to try and get the airport ready.... you may have read

about it in the paper, with the instrument controls. As a part of that process, they've uncovered over 150 15-pound canisters of ethylene oxide, very ....

J. English: (interrupting) .... closer to 200 ....

C. Gray: And this is not uncommon at any site. But it is still, what you say is .... a little needs to make sure we recover all these things.

K. Bradshaw: But the point I was trying to get to is, it's like one of these test wells or something show cobalt contamination and yet, ... but now what is the source for cobalt ... and we know cobalt. There's three forms of cobalt and most of them are radioactive and this is the kind of thing the community is afraid for the community ... we are arguing that the community is afraid for the workers because there are workers here and now, and because the RAB is held here and now... That any kind of drilling, or any kind of disturbance out there, and we don't know what is out there because the records is not very accurate in these things. It may pose a great danger.

G. Kaden: I don't want to be Chicken Little. I don't think the sky is falling down ... but that is a distinct possibility, and this is why this is a long, slow process. This is why we have our interim holding facility, this is why we are spending all this money on pump and treat because we can't just going and start to dig up Dunn Field and attack the source of the stuff. So what you are saying, hopefully, you are way off base, but that could happen. And we're trying .....

(Several simultaneous remarks)

J. English: We're planning for this case in terms of a process to assess when we come upon something we don't understand and don't know what it is. We are formalizing a process to deal with these, and that process ....

(Several simultaneous remarks)

K. Bradshaw: .... this site began in 1942 and we know in other parts of the area, DOD conducted nuclear testing without adequate safeguards to the community, out in the open and things. And the community .... I'm afraid that there is something out there that is not in the archives that happened ... all of the present employees or the one's recently retired began the work here. And this is changed not only from the Army and the DLA thing. This was done in a period where they were having all types of biological and nuclear, and all types of testing and experimentation by the government all across the country.

G. Kaden: I'm not going to argue the point because you are right. And even when we went from Army to DLA, our mission has stayed the same, we never had the mission to do that type of stuff. Not to say that we weren't here; however, that is why we are spending millions of dollars here to get where we are going. We are being very, very careful. Worst case scenario, if we did find something like that, then we are all going to know about it and we are all going to be prepared.

Very quickly, so we can move on to the training. This is what we found. Little vials of .... packed inside other canisters. Whatever it is. ... we're fairly confident it could be some type of medical supplies.

C. Gray: How many of them?

G. Kaden: How many of them? Well, we have dug up so many from where we were and there are more in there. So we are talking hundreds of these little vials. Thousands. There's a lot of them.

S. Phillips: Hundreds doesn't sound so far ....

D. Bradshaw: How do you know they are medical vials?

K. Bradshaw: Just hopefully.

G. Kaden: The size and description.

K. Bradshaw: He doesn't know.....

(Several talk at once)

D. Bradshaw: ... but that's what I'm asking you ...how did you know they were medical vials?

G. Kaden: We don't. I said we suspect they might be. We're pursuing that route.

S. Phillips: Do you want me to mention what the contractor did to sample them?

G. Kaden: Yes, go ahead, you can probably do it better than I can. There has been some testing done on these because we are going to have to move the dirt and stuff. So we know they are not hazardous. We just don't know what they are.

(Several people talking at once)

K. Bradshaw: That's worse than everything else if you don't know what they are. If they were hazardous or not, I'd be more reassured, but then you say you don't know what they are ...

G. Kaden: We know what they are not. And we know they are not going to hurt us.

S. Phillips: We are still sending them to .... basically TDEC is the originator of this idea mail all photographs to different medical commands .... see if someone knows what these are and we are going to follow through with that. What we did, once we found them. The contractor took in an order of 50 or 60 of these smaller containers, and they are about the size of a photo film case ....

J. English: .... a little taller ....

S. Phillips: A little bit taller. And on the inside of them they have four of the smaller glass containers. What the contractor did is, he took those .... he dropped a metal block on them and smashed them and then he sampled what came out. And that's what we sent off. We didn't find anything and, frankly, I think what we sampled was rainwater that had gotten into it. Because the tops of them were sealed with a quartz stopper.

G. Kaden: ... and there's very, very, very little liquid in these things.

U. Truitt: Has anybody contacted probably the best source to find out what was in those containers. They look like those WW2 medical field kits. And Brook Army Medical Center is the place that .... Brook Army Medical Center in San Antonio, Texas.

G. Kaden: That was not a name that came up today ... we have ... we are not just going to send it to the one, we are going to send it to a lot of different places, and that's good .... we will make a note of that and that's one more place we can check.

K. Bradshaw: One more comment. Now it's been documented that you have found chemical warfare kits that have been buried out there.

G. Kaden: No, we haven't found them, we just know that they are there.

(Sever simultaneous remarks)

K. Bradshaw: .... there was some type of chemical warfare activity, because you have got the kits ... now I am not saying the sky is falling in and, and something real bad is going to kill us all out there but the fact that you found something that you never had dreamed, and your archives didn't indicate it ... that's a cause for me to worry.

G. Kaden: Well, we know there's medical waste out there, we know there's all kinds of warfare out there ... there's chemical warfare kits, we know there's a lot of things out there. But, as you know, we can't say where every single thing is, and what that is that we are standing on. And that's again, that's why we are doing what we are doing and that's why it's taking so long and so much money....

J. English: We took the step of getting the CWM clearance for Dunn Field. They gave us their clearance. Actually that's .... the reaction I can give at this point, for why we went ahead with our activities.

K. Bradshaw: Are you saying the Tennessee Department of Environment and Conservation are aware that you found some material that you didn't expect to find and they gave you permission to continue without any other investigation and things. Is that what you said.

J. English: No, Sir, I am not saying that at all. I said that we got the chemical warfare materiel .....

K. Bradshaw: When you say we, are you speaking for the DLA ... or the Tennessee Department of Environment and Conservation?

(General remarks)

M. Williams: .... Excuse me. At this table, no offense to anyone, but this is an organized table here and to speak at this table you need to be recognized by the Chair or the Co-chair. If you don't mind me saying because we have an agenda here and we are trying to get somewhere with this agenda .... we'll be here all night with this and I wish we could move along with the agenda and come back to this, but .....

G. Kaden: Let's let Mr. Bradshaw just finish with this one point and that will be the stopping point I think ...

(Unclear remarks by several people)

K. Bradshaw: I didn't mean any disrespect, because this is the first time I've been here. I've tried to be courteous and respectful and everything, but I think the issue I am raising is a legitimate issue ... and Mr. English made a comment about this situation wasn't expected ... but somebody .... I wanted to know who do we work with ... is he speaking on behalf of DOD or Tennessee Department of Environment and Conservation, who he works for. And I think I have a right to know that (background noise) ...I mean in Tennessee you've got the Sunshine Law .... that means nothing can be done and .... relating to the public health and everything, and I think everybody in this room got a right to know who gave permission to do what.

G. Kaden: That's why we are here with pictures and discussing what we found. We will probably find things that don't feel ... that have been buried for 50 years and you know are rusty and we are not going to be able to know what it is right away. That's a fact of life. You go and dig up any military landfill or industrial waste landfill, any landfill, any disposal area .... you are going to find

that. It's not .... we just didn't dig these things up, "Oh, here's some vials" and dump them in a truck and drive them off and keep on moving. You know, we went and tested everything to make sure they weren't hazardous. It was safe for us to be out there, because we've gone out there, the BCT went out there yesterday and looked at. I mean, yeah, we're pretty .... we care about our health too, I wouldn't want to go out there and look at these things if I thought there was a problem with it. So other people were suited up and they ... you know, took these things and did everything, you know, just in case. And we found out that it wasn't a problem. Are we going to find something else out there? We are going to find things that we know should be there, and yes, we may very well ... hopefully we won't ... we very well might find some more canisters or vials or something like that. Your point is there's CWM materiel buried out there. Absolutely. How do we know this mysterious thing is not CWM. Well we .... if we find something we can't identify, we want to identify it, we want to know. What you are saying is absolutely right. We are very concerned about our health, your health and the health of the community.

J. English: I just want to respond, because it was quite a long time ago I think when we were having a discussion in the BCT meeting and we were sort of mulling over ... well, we had heard about this mustard gas problem and all this and I remember very clearly that I said, 'well, I believe since mustard gas is a chemical warfare agent, that there are specialists who deal with that problem'. And at that point, the wheels were set in motion to involve the chemical warfare materiel experts and the United States Army, to be involved with this. We could do nothing up in Dunn Field and if you remember, that's why nothing was done in Dunn Field for a long time because we had to get their clearance before we did anything. We got that clearance. I'm not an expert on chemical warfare materiel. If chemical warfare people from the United States Army say it's clear, and there's no higher authority in this country for that particular problem, I'm not going to second guess them. That would be dangerous. They said it was okay, we went ahead with our work. We discovered these things up there. We said, "you will have to sample that." We didn't think it was chemical warfare materiel because it did not correspond to all the descriptions we had of what it looked like.

G. Kaden: And we did check. We know it is not CWM chemical warfare materiel. We had the OEP from Huntsville, who actually looked at the stuff, and then it's been tested and all so it is NOT CWM.

I would just like to say, hey (comment unclear) from these World War II kits and all ... that's what we are trying to do now.

C. Gray: OE ... the Office of Engineering? What is OE?

D. Richards: Ordnance and Explosives.

C. Gray: Ordinance and Explosives ... and so you took the pictures, faxed them and ...

G. Kaden: No, they were actually on site. They were there with Parsons and all and they actually saw the actual bottles.

D. Richards: I went out on site with Wilson Walters who is an OE specialist in Huntsville and he also teaches classes on CWM. He is an expert and he saw those bottles and he said, "I can't tell you what it is but I can definitely tell you it is NOT CWM-related".

G. Kaden: And we had them tested besides.

Field Sampling - Quality Assurance Training
Mr. Greg Underberg, Project Manager, CH2M Hill
Mr. Shawn Phillips, Remedial Project Manager, Defense Depot Memphis

G. Kaden: Okay. We are really, really behind. This is something that we asked for. It think we have a good presentation tonight on Field Sampling and Quality Assurance. If people have to leave, please feel free to do so. We hope you won't. I'm going to ask Greg Underberg of CH2MHill and Mr. Shawn Phillips, of the Depot Caretaker Staff to talk quickly. Do the best you can.

S. Phillips: About 6 months ago, Mr. Kaden brought to the RAB's attention that there had been some comments about training. Some requests that we took a vote on what did the RAB think we needed training on the most. I don't remember what No. 1 was but we did a session on that back last year. I don't even recall what the subject was .... oh, it was Risk Assessment. The gentleman who came from the EPA. The second highest topic was "Sampling" and plus, "How do we know the quality of the samples that we take?" So we are going to try and get through a 35 to 40 minute presentation here and probably get you out on time in... what 20 minutes?

G. Kaden: Ten minutes would get us out on time.

(General comments and laughter)

S. Phillips: Okay, I'm going to start it off. This is kind of like the Tim Allen Tool Show. But real quickly, there's basically five types of sampling that we have done here at the Depot. Surface soil sampling, and we are talking when we speak of surface soil, zero to 12 inches and includes the root mass and the topsoil. The

kinds of things we use to collect surface soil samples are spoons, stainless steel spoons, bowls, sometimes we'll use a hand auger; which looks like a little hand-driven screw press that has a hollow bit to it. You screw it in the ground, pull it up, take the soil from the hollow bit and throw it in a sample container. I'm going to pass this around. This is the other one ...

(General unclear comments)

.... no, but seriously, this spoon is kind of a modified spoon. You might want to check the edge on that. If we have to dig into soil sometimes, we have to get a little bit fancy.

The second type of sampling is soil sampling but it is at a deeper depth. Sometimes if the soil was loose enough, we can use a hand auger but typically here we use a drill rig to insert a device called a split spoon sampler. It's either hammered into the ground or hydraulically pushed into the ground. It removes ... and if 'Al' will open it up ... a valve opens it up. When this comes up out of the ground they take it off the drill rig and take it over to a table that's got a plastic cloth on it. They take this tip off and then open it up. The first thing the geologist can do is look at the soil that has come up into the tip and look to see if there's clay, or gravel, or sand. So he logs the well, he logs what soil material is beneath the surface. The second thing he does, is then he collects the sample. And he just puts it over into the stainless steal bowl. So that is sub-surface soil sampling.

C. Gray: And when you drill down, you are going to push all the soil in there to the bottom, so you'll know that it's the bottom that is the soil you are sampling?

G. Underberg: Right. This is set in intervals of sampling. They are usually two or three foot spoons and you will take a sample from that area of two feet, two more feet and sample it, two more feet and sample it.

S. Phillips: Yes. The way we definitely do it, we will sample anywhere from four to six ... 4 to 6, 8 to 10, 14 to 16. I think ... How deep have we gone here?

G. Underberg: As deep as .... about 60 feet I believe.

S. Phillips: Let us get into some of the other type. Surface water ... what we are talking about here possibly our pond, drainage ditches, streams. I don't think we've done any of this here, but surface water that has run off the tarmac or off an asphalt parking lot, that can be sampled in general. I'm not sure we've done that

here, we've sampled our ditches, and our ponds and that sample collection .... if you want to describe ....

G. Underberg: It's a very sophisticated device, it's called the sample jar, itself. You can be standing in the stream. I'm facing upstream and I would be taking the sample from the water before the water comes into contact with where I am standing. The purpose of this is not to disturb the water, or introduce sediment, and to get a representative sample of the flowing water. That's usually it.

S. Phillips: We do that because we want a discrete water surface sample, but we do sample the sediment beneath that, like at the bottom of the ditch or the bottom of the pond.

G. Kaden: Shawn, what's a discrete surface sample?

S. Phillips: Discrete? We don't want cloudy water that we've muddied up while we have been walking through the stream. We want surface water that's going through that ditch or in that pond, under normal conditions. Now, we sample the sediment and we don't have one of these devices. I will try and describe it to you. It's called a Ponar sampler. And we did use this in our ponds. You row out in the middle of the lake or pond, with a row boat. You do this in water deeper than two or three feet. There is a device that looks like a clam shell bucket from a crane. It will weigh maybe 15 or 20 pounds. It will have a cord and you lower it into the water and basically the last couple of feet you just let it go and let it sink into the mud. Then you send a metal weight down the rope and it triggers a device which causes this clam bucket to slam shut. You pull it back up and you collect the sediment out of it.

If we are in shallow areas, like drainage ditches, the sediment samples will be collected just like the surface soil sample. You know, with a little spatula or a little spoon.

The last type of sampling that we have done here is groundwater sampling and I am going to really ... I'll pass this down both sides. The first thing you do, and you guys can pass this around the room and take a glance at it. The first thing we have to make sure we do with groundwater samples is we have to get fresh water into the ground water well because if they are sampling .... if it's every three or four months, that water has been sitting in there for three or four months and is basically stagnant water.

So we have to purge the well. And we purge the well until we are sure that fresh water from the surrounding formation has entered the well. That is really what we want to sample. And the contractor who is purging the well will record data, such as

dissolved oxygen, temperature, the pH of the water, until it stabilizes and he knows he is bringing in water that is surrounding the well and is fresh in the well. Then he can pull a sample. And there are two ways he pulls a sample. They way that they hate to do and this device .... the same thing, I will pass this around the outside first .... it's called a 'bailer.' The reason this is not the preferred method is because this device ... you have a nylon rope on the top of it and you drop it into the monitoring well, lowering it with the rope and you have to lift up the water. And our groundwater from around here is anywhere from 80 to 90 feet deep. If you had to pull up 40 gallons with that bailer, that is a lot of work, so that is not the preferred method. The method that we are going to be using next week when we are sampling ground water from all the ones that we can sample this way, are using pumps. These are positive displacement pumps that you lower into the well and it injects the water off the top through a Teflon .... Teflon tube.

G. Underberg: I should say we do .... we use the pumps to evacuate the wells and to sample some parameters. However, the bulk of organic compounds can be lost in the pumps, so we always use one of these things to at least sample the bulk organic compounds.

S. Phillips: Okay. We grab the sample, we have it, either if it's water we have it up to the top or if it's soil we have it. Now one of the first things .... we are kind of getting over into the quality of the sample now. One of the first things we need to make sure is that the container we put it in is a clean container. To a large extent the containers that we get, we order them from the lab and they come clean from the lab. This happens to be a volatile or organic sample container; 40 milliliter vial. You notice there is a blue seal on the top of it. If the contractor has received that container in the field and that blue seal has been broken, we can't use that sample container because we don't think it's clean. So that's one way we assure that the sample in the containers that we use are clean. We buy them from the lab that way. We also use this equipment like we discussed earlier. The bailers, all the stainless steel equipment we use. I think this will probably be something we go over real quick. He basically does a soap scrub with Alconox™.

G. Underberg: We have used a laboratory grade soap for our cleaning material.

S. Phillips: He rinses it in tap water, then he rinses it with the de-ionized water which is metal free water. In case there was anything that stuck to what he is doing, stuck to the device he's using to sample, such as a heavier grease or something, he has to use Isopropyl

alcohol to get that off. Maybe rinses it again with ASTM Type II rinse water which is ....

(Question Inaudible)

G. Underberg: There's a specific type of water that's a laboratory grade water...that Type II indicates how much cleanliness the water has to handle. ASTM stands for the American Society of Testing Materials and it's an approved grade of water for laboratory work. We use that in the field for the final rinsing of our equipment.

S. Phillips: For a lot of this equipment .... he decontaminates the equipment in his lab here on the station. Like with the spoons. He will then wrap the spoon up in aluminum foil to take it out to the field for sample collection. It is just easier if he can decontaminate in a controlled structure instead of in the back of a pick-up truck. One thing that we do a lot of ..... instead of using ..... when we can do this, a lot of times we use sampling devices that come sealed. Pre-sanitized. There's a little number plate on here 'Disposable, Do Not Reuse. Any Reuse May Result In Cross-Contamination' .... so we buy this, it's then cleaned by the laboratory, it's filled up once we open it in the field and we use it at that particular location and then it's not good any more. These cost money but when you consider too, the contractor who is sampling takes 20 minutes scrubbing equipment, their labor .... a lot of times, this just ends up being cheaper ... to use disposable equipment.

(Comment Inaudible)

S. Phillips: We have talked about the containers and the equipment he uses. Now what about the people? There are certain ... there are protocols that are used in the field. A lot of it makes common sense: wearing the sterile gloves, no smoking or eating, whenever you are working on a grass or an asphalt surface, spread out a plastic wrap and work on top of it to prevent the chance of contamination getting up into your sample. And some of the things you wouldn't have thought about. You wouldn't have any running vehicle around your sample location, because of the exhaust of the vehicle can contaminate your samples. And, like today, we wouldn't have been sampling with the thunder-boomer we had. You cannot keep rain out of your sampling so we prefer not to sample during rain events. It makes it difficult, such as hard to keep your sample discrete, away from the rainwater.

Starting in the field, the field technician tracks information in a field notebook. This starts the paper trail that logs that sample in the instant that is collected in the field through the analysis process in the lab. In the field notebook the field technician will

take notes such as the date and the time of the sample collected; the weather conditions, whether it was windy; he will report the location. He will also take a photograph of the location.

G. Underberg: This is specifically one from DDMT. Photographs are important because these things get mowed over. And when you go back to resample, you can't ever find it again. So we take photos. Anything that happened in the field when the sampling technician is taking his notes. Anything that was an unusual occurrence, that is where it begins being noted ... he notes it down.

C. Gray: That would include unusual smells, funny colors?

S. Phillips: Well I had a funny occurrence where a duck landed on this sample. Anything where ....

J. English: They document things like climate, temperature and anything that could affect the analysis from a collection standpoint.

S. Phillips: Once we get the sample and are up to the ground surface of the pond, we have to containerize the sample then and there, because they move onto another sampling location and you want to make sure you don't cross-contaminate your samples between locations, so it's always the protocol to containerize it immediately. Some of the containers have preservatives in them. When they come from the lab, this container already has preservatives in it. That is to keep the sample from degrading from the day the sampler takes it until the lab analyses it.

E. Brayon: Is this hydrochloric acid?

G. Underberg: Yes, it is.

J. English: It keeps the metals or the volatiles or whatever from plating out on the glass, or otherwise degrading it.

S. Phillips: If you didn't use preservatives, when it got to the lab and they analyzed it and you got your results back, your results would be artificially lowered by it because you had lost some of your contaminants.

J. English: By some unknown fraction of what it really was.

S. Phillips: But you wouldn't know what that fraction is. So your sample is worthless then.

With head space analysis, or with volatile organics, the volatile organics will evaporate, they have a high vapor pressure. One example of a volatile organic would be gasoline. When you go to pump gas at a service station and you smell it, that's it

evaporating. When we collect volatile samples in groundwater, you can't have any air bubbles in your sample container .... this is one of the trickiest kinds of sampling there is to do because it takes two people. You will fill the sample container up and get a bubble on the top of it of water, and get all the air bubbles out and then you have to real carefully collect it, and then you have to tap it and look for air bubbles if you have any that sample's no good and you have to recollect. Probably the most hard sample to collect in an environment .... Jordan, you might be good at it, I'm not. Once you've collected it, you now have to start tracking that sample to make sure it doesn't get violated. And this is basically the beginning of this is what we call a custody seal. Written across the top of this paper that we just put across is the sample technician's name, the date he collected the sample, the sample I.D. ... you know which well it came from or whatever. That begins the paper trail for this sample, that and the field notebook.

G. Underberg: That seal is perforated and you can't open the bottle without tearing the seal. So it becomes obvious if the bottle has become tampered with.

J. English: Let me clarify something for everyone so that they don't think that every sample that is collected in every situation across the country and across our state is collected in the same fashion. The samples collected from the Defense Depot and other Superfund sites are collected according to what is called "Legal Protocol." And these samples are tagged and sealed in this manner for this type of responsible result that we want. We want to be very certain that those results are indicative of what is in that sample. But there is a lot of environmental testing that the State of Tennessee does and the EPA might do, that are called "Routine Samples" and they are samples out of creeks and streams that we don't necessarily believe have got a problem. Doing this kind of sampling in this kind of chain of custody is very expensive. So you may see or hear of sampling that is done by the State of Tennessee that does not follow these protocols. It is because that protocol is not required for that particular circumstance. If they collect a sample that has a problem, they may go back and collect another sample to confirm with that legal protocol. But I didn't want you to think that every time you see a sample collected, you are going to see the custody seals on them. But when you see them here, yes, you should. And if you see them anywhere on the Superfund site, you should.

K. Bradshaw: I've got a question. As far as the law is concerned, what is two US Codes .... 9601, otherwise known as Superfund? It requires all

this type of testing, all this the law requires, should have been done in the Hazard Ranking Survey System. And plus the Depot had another series of tests .... what the Law Environmental studies and everything ... That is the main thing, for the sediment, the air, and the surface water, the law requires the testing to have already been done. And I want to know why the Defense Depot hasn't been complying with the law?

J. English: Well, they have been. They've been doing the testing that they were supposed to do for all those different types of investigations. But they are all different levels of investigation. The Hazard Ranking System is a system that is designed to tell you very quickly that you have a problem. They did that testing, the results came back and they said, "Yes, you have a problem. You go to another level of investigation." And that's what happened at the Defense Depot. They have had several different levels of investigation that further define and further characterized the site at every step and turn. If we find at some point, our characterization is complete, we don't have to do any more. But we are still in that investigative mode.

K. Bradshaw: Was that a Monte Carlo Analysis they used for the probability?

J. English: That's one method to assess risk.

K. Bradshaw: There was one used at the Defense Depot when they determined they didn't need further .... (indistinct remark)

J. English: No.

S. Phillips: That would occur at the risk assessment stage.

R. Torres: That's in the phase .... is a process when you have to do an investigation. The HRS is just an indicator. Like Jordan will say, "There's a problem, we need to look at it." Then we have to develop a strategy to analyze and investigate the site. And that's when Monte Carlo, or IUBK Model, or all the methods that we use to identify it to develop risk assessment. Like you indicated.

M. Williams: Okay. Go ahead.

S. Phillips: Okay. Sample pack. Once it's in the container, the custody seal is over the container, we put it in coolers, we use bubble wrap, we wrap each sample container. We wrap it so it won't break. It still happens occasionally, but that's the goal. We pack it in ice because all the EPA protocol call for four degrees Celsius which is like 38 degrees, 37 Fahrenheit. The sample has to maintain that environment. We then put custody seals over the cooler to make sure the cooler hasn't been opened and that's it.

J. English: Are you all going to get into the dups, blanks, positive ...

(Several people talking)

G. Kaden: Tell what happens if a hurricane or FedEx leaves your cooler on a dock for a certain length of time?

G. Underberg: We send our samples using either FedEx or one of the competitor overnight services. We usually use FedEx. Sometimes we use our courier to drive the samples back to the lab if there is high volume. We track the sample, and FedEx is very good about this. We track the sample using the standard Bill of Lading which is basically the standard FedEx form. So we can track a sample and if it hasn't shown up at the lab we get on the computer, we call FedEx, and we evaluate why it hasn't shown up and where it is. I'll talk in a few minutes about the chain of custody, but when we hand a sample over to a carrier we sign a chain of custody, that we have relinquished control of the sample to the courier. They sign it acknowledging they have accepted it and they sign it again when they hand it back to the lab.

G. Underberg: What happens when the sample goes to the laboratory? The laboratory completes the chain of custody .... I'll show you a copy of that in a couple of minutes. It notes any non-conformance with the sample, and these are things like: was it within the allowable temperature when it arrived, were any of the sample containers broken, was the sample fizzing, was there any unusual circumstances with the sample. That becomes noted on the acknowledgment letter which stays with the sample and goes through to the labs. There is a history of all the observations of the sample to the laboratory and into the analyst's hands when the data is available. The laboratory sends out the acknowledgment letter to the project manager and the project chemists as soon as the sample arrives, that allows the project manager or the chemist to make a decision if there is a non-conformance to go back out in the field and re-sample. We get that within a couple of days that if there is a problem and the field team is still at the site, they can go back and re-collect the sample. Another thing we do to ensure quality in the lab is that a blind sample number is entered into the laboratory's main information system. And this sample number basically indicates that the chemists do not know what sample they are analyzing. The reason we do that is to eliminate any potential for operator bias on the sample. So, the person running a gas chromatogram for organics, for example, doesn't say, well that's DDMT and that's Well MW9, I know there was nothing in there last time, so we will just ..... so they have to maintain absolute quality

assurance on every sample. We prep the samples for analysis and of course, we record the date and time the samples are received, they are extracted, etc.

Shawn is passing around a copy of the Chain of Custody. What is this? This is essentially as Jordan was indicating, it's a legal document that becomes part of the sample package and it indicates who had touched that sample, who pulled it out of the ground, who shipped it, who had management of it. And if there is ever an issue with the sample, we can go back and evaluate who was responsible for it. You can see here. I will put one up quickly so we can discuss it.

(General remarks)

G. Underberg: This one is partly filled. You can see that it identifies the date the sample was taken, the time it was taken, the type of sample, what matrix it is, if it is obvious: water, soil or air. It allows entry for the standard sample I.D. that becomes entered into the system. The number of containers, identifies a matrix of which analytical methods are going to be run on the sample. Checks it off. You probably can't read this but there is a signature here by the sampler, date and time that he received the sample. There is a signature here for when he relinquished the sample. Signed-off that he relinquished custody at this date and time. Then there is a signature down here for who had received the sample and relinquished and then received. So you can see that we have a track of who had the sample and at what date and what time.

There is also a portion .... this portion of the form is filled out by the lab. It indicates the lab I.D., who the project manager was, the pH or acidity of the sample. We were talking about hydrogen chloride. Hydrochloric acid, is used as a preservative, we want to make sure that the pH of the sample was within the sampling procedures. Was there a custody seal, on ice, what was the temperature was ... all these things are recorded when the lab receives it.

S. Phillips: I wanted to mention, if this seems like it is fairly rigorous pertaining to custody. This guy collected the sample here, relinquished it here to FedEx, and they have to sign it and they relinquished it to the lab, the lab person signed it. If that seems pretty intense in the terms of paper trail, this is the EPA protocol that was established because sample results were criticized in court. And you have to have names. You can ... those folks that sign can literally be subpoenaed if they are ever in a case about a particular site. "Did that sample ever leave your possession?" "No it did not." And I signed it. So that's why this kind of

rigorous routine has been established. It might seem like overkill but it's not.

G. Underberg: Okay. What kinds of things do we do in the field to establish that we have the quality assurance of the sample. And this kind of .....

End of Side 2

TAPE 2 side 1 ..... (lead in lost) ...

G. Underberg: .... rinsing. And essentially what we do is rinse decontaminated equipment with the high purity ASTM Type II water and establish whether or not anything is coming off that piece of equipment during a rinse. What is that telling us? It is telling us that if our decontamination procedure is not correct, that we would be pulling things off the sample and you might be cross .... might be adding a chemical to the sample that is otherwise clean from the previous contaminated sample. You want to make sure that everything is perfectly clean between sampling events and this rinse will tell us that.

The next type of blank we take is the material blank and that is essentially a sample of this ASTM Type II water from the lab. We will run one of those for every sampling of that. Actually we do it for every week if we are using a column in the field to generate the water. We typically do the equipment rinseates, one per day, to monitor the decontamination process.

We also run the type of sample that is required by EPA procedure called a trip blank. And it is basically three of these volatile organic compound vials filled up with ASTM Type II water. We fill it up at the beginning of the sampling day, add it to the kit, you know the samples will go out in the field with the cooler. We put one of these in the cooler and take it with us in the field, it stays in the cooler when the cooler is open in the field, it's handled like all the other samples, brought back to the lab, sent in the courier. What it is doing is it is establishing whether there is any cross-contamination in the whole sample handling process. And so we take that into the lab and run for volatile organic compounds. Rarely do we ever see anything in a trip blank ....

J. English: Let me make a point on that. You said a minute ago that you can't have a vehicle or anywhere in the area. Where you do that. If your transport device is a vehicle like a state vehicle or something and they have got an engine that is not running right, or you have got anything else on the inside of that engine, you will be surprised what will show up in that trip blank from there. So that's why it's real important to make sure that you run those so you don't have any kind of cross-contamination. You want to

know that what you are getting and what you are reporting is from that site, from that sample.

(Indistinct question)

G. Underberg: No, the lab does not know if it is analyzing an environmental sample or a quality assurance sample.

Duplicates. This is essentially.... I indicated that if it evaluates the reproducibility of the field techniques and also evaluates the reproducibility of the data in the lab. What we do is essentially ... we are taking a ground water sample. This is taken one every .... one out every ten samples we take a field duplicate and that gets .... we basically fill two sets of sample bottles, send both off to the lab .... again the lab doesn't know anything about what they are analyzing .... and then we compare the data to make sure that the date is reproduced.

S. Phillips: I want to mention that on duplicates. In the two previous groundwater sampling events, we have had TDEC come out and they take duplicate samples and send it to their lab. And that's kind of a side check on our lab.

G. Underberg: That's actually called a split sample, versus an internal duplicate.

S. Durr: Is that a protocol in terms of how many samples will you stop at, one, after you compared one? Is there a protocol that says you go back and do another, and another one?

J. English: Are you talking about splits?

S. Durr: No, the number of samples that you take, period.

G. Underberg: The number of duplicate samples we take is set as part of the quality assurance plan for that program. DDMT have set it at ten percent. Now .... but the unfortunate thing with most sampling events have been because it takes 21 days to get the data back from the lab .... it usually, unless you are in a very long sample program, can't make corrections in the field right away. So what this does is, after the fact, allows you to evaluate your quality.

S. Durr: Is that the samples themselves, or whatever is in there?

G. Underberg: Quality of results.

C. Gray: Quality of results. I mean the sampling has got to be (indistinct) but what you have to make sure is that when you run it in that machine, that machine gives you the same answer to what should be the same question. How much acetone is in here. If you've got a few side by side samples taken at the same time, that machine had better give you the right answer within a certain range.

Looking at some of these low numbers, you know a 10 percent difference can be the difference between parts per billion and parts per trillion. And that's a big issue. So it's making sure you get the same numbers.

(Several indistinct remarks)

S. Phillips: No, that's no problem. I'll answer that because it's a very good question.

J. English: Would you repeat the question for the rest of us.

S. Phillips: The question is, why are we coming back up to sample the ground water again? Well, we are doing it because we wanted to look at seasonal variations of the ground water table. Some of the ground water table is lower during the spring and summer. That's why it's .... I don't know whether it is EPA protocol, but EPA recommends that we do that. And that's what happened here. Actually, since 1994 there have been .... one, two, three, four. 1990? .... this will be the sixth round of groundwater sampling we have done since 1990. Although the last three rounds have been within the last 18 or 24 months.

M. Williams: I think Mr. Bradshaw is recognized with a question.

K. Bradshaw: With all that duplicate testing, and all of that is good and everything, but did you have any blind testing, internal, or external, to guarantee the integrity of the whole system?

G. Underberg: Well, we do split samples with the Corps of Engineers laboratory which goes off to an entirely different laboratory.

K. Bradshaw: When I say blind testing, I mean people send tests there, to test for the integrity of the sample.

G. Underberg: Yes, the laboratory itself receives ... it's part of a QA/QC program, it receives samples from an EPA control laboratory, completely independent of this whole process. Those samples that run through the lab as part of the lab certification process.

C. Gray: So you use certified labs for your analysis and that lab has to pass a certain hurdle beyond just this site in order to be certified.

K. Bradshaw: Follow-up. Both of these are laboratories you can plan on using .... do they have an error rate?

G. Underberg There are set criteria for the amount of variance you can have in the duplicate samples. There's other internal QA samples that are done that have an approved error rate. The laboratory has to maintain its calibration and it's reproducibility within that rate, that's correct.

J. English: I wanted to further clarify that these quarterly sampling events are attempting to determine seasonal variability both in the water table if the water level is measured, but the main parameter is we want to know is when is the water from that well the most contaminated, when is it the least contaminated. Because it helps us to understand what is happening, what processes are happening. And we want to know the time of the year when it is the most contaminated. We want to know the worst case, so our attempt to try and define that is our quarterly sampling event so we can understand it.

G. Underberg: One last type of field QA samples. Actually it's more of a lab sample, but we actually take it in the field. It's called a 'Matrix Spike.' It's used to take the soil or sediment, other solid samples. What we do is take the sample, send it into the lab and the lab, before it actually sends it off to the guy that is running the instruments, will take the sample and inject a certain amount of a chemical. For instance, if we are looking for organic compounds, they will spike it with a known quantity of organic compounds that have a certain chemical behavior. It's not the same compound we typically look for in the environment. They will run that and evaluate how close the actual result is to the known quantity that went into the sample. The reason that is done is that there is sometimes interference with the chemicals and the actual properties of the soil or the material that you are sampling. So if a sample comes out and it is the same concentration, you know that interferences aren't happening. If it is different, then there has been something going on in the sample itself. And that has to be accounted for in the interpretation of the results.

S. Phillips: The way I've always understood matrix spikes because it's kind of confusing what they are for, is that we are looking at it to see if the sample has a high clay content or something. The sample matrix of the soil holding on to a contaminant and are we not getting that through the analysis. That's why that's done.

J. English: The lab also does lab spikes too. It's a part of Quality Control to make sure that their procedures are digesting the sample there by whatever processes they go through, is allowing the matrix to not be an interference, or to be a KNOWN amount of an interference from their procedural processes that they go through. So that's something that will happen too and the results have generally indicated in terms of percent recovery of the material that it was spiked with, that's the same thing as the matrix spike. So if you've got a recovery of 98 percent, I can tell you that's an extremely good recovery because there is a lot of variability.

Some compounds create a lot of interference and the recoveries are low, and for those compounds lower recoveries are accepted. There is just no method that has been found yet to be able to resolve that problem.

G. Underberg: This is the last slide. So what do we do in the laboratory? The first point is that the quality requirements of our laboratory procedures are well prescribed by EPA. They set a characterization program that is very mature and over the years EPA has developed procedures and quality criteria that we must follow.

All the work that CH2M Hill has done, most of the sampling since 1995 at the Depot, has been analyzed in the CH2M Hill laboratory in Montgomery, Alabama. That laboratory, before we ever started work, in fact before they ever signed a contract, that laboratory was audited by U.S. Army Corps of Engineers that determined that the laboratory was an acceptable tool in its program.

The same laboratory, and this is independent of the work we are doing at the DDMT, the lab takes samples from a lot of other government agencies and private clients. So it is audited by the Department of Defense, by certain state certifying agencies. If Alabama's doing work there, or Florida, they have their own state requirements, as well as Tennessee. And other clients, some of our private sector clients will want to make sure that the lab they are using is providing a quality data, so they do their own independent audit. So DDMT is not the only eyes looking on the performance of our lab.

We have written projects, specific laboratory instructions which are specific to the quality requirements for different samples. Calibration, which is the way that we tune the instruments to make sure they are producing the correct results. The calibration is performed and verified before the project samples are run. When a new batch of samples comes in, and we do a calibration check on the instruments. That usually involves running three or five standards, looking at the curve making sure the instruments are working right. We then recalibrate every 10 samples that are run and verify it. We also do a calibration after the sampling of a group is completed. And all that calibration becomes part of the sample documentation package and it's looked at after the samples are completed as part of what is termed a 'data validation'.

We produce a data validation report that goes back through all this stuff and qualifies all the data that the laboratory is

producing. And, by the way, we use method blanks within the lab itself to ..... Jordan was saying .... look at the process in the lab and we also evaluate potential input of a chemical in the lab. Things like acetone, methylene chloride, toluene, some of the chemicals of concern here are also used in the lab to clean glassware and other things and we have to run internal checks to make sure that that acetone is not entering the process and being interpreted as environmental contamination.

(General comments)

Rescheduling of April Meeting

G. Kaden: I'm very sorry we had to push through it. You know, it's a very important training session. We have one more order of business that is not down here. This might be some very good news, but ... It looks like there is a problem with the state and EPA and possibly the DOD representatives not being able to make the April RAB on the 16th. So the State and the EPA definitely won't be there. I may not be there either. If just one of us is missing or something like that, just like anyone else, we just run the meeting as normal. But with the regulators being missing, I should just like to bring it up to the RAB. I see three possible options: one, we don't hold a meeting next ... in April, or we hold the meeting without the regulators, and possibly myself and Mr. Mondell Williams will be happy to chair the meeting. Or we can move it back a week to the 23rd. So maybe we should leave that up to ourselves.

U. Truitt: Is there anything essential scheduled for the 23rd.

G. Kaden: What we want .... there are two things we have scheduled right now, that could be moved back if we didn't want to hold it .... we plan on doing the relative risks. Mr. Phillips will talk about relative risks on our site. There will be training on that. And I plan on presenting the new TAPP training -- Technical Assistance for Public Participation -- which, as we talked about, might be a way ... well it is a way that the RAB can maybe pick a project and ....

U. Truitt: So you can incorporate that into the May meeting.

G. Kaden: Yes, we could just move it back to the May meeting.

M. Williams: Do you all agree with that.

(General agreement)

M. Williams: Okay. So there's no meeting next month.

C. Gray: Have we got a burning desire to meet next month?

(General laughter)

Public Comment Period

E. Brayon: Are you aware of an article in the paper today?

G. Kaden: No, someone else has just told me about that. Would you all like to discuss that quickly?

E. Brayon: Well it was just, you know, the publicity in the section of the paper that affects South Memphis, concerning a grant, a joint grant isn't it Carter?

C. Gray: It's a grant from NACCHO which is the National Association of City and County Health Officials.... I call it 'nacho', they call it NACCHO.... to help us do the study that I think we have talked about before to do an evaluation of the environmental educational .... environmental health educational needs of the Depot community. Basically, they have been going on for four or five months and had just made the paper. Unfortunately Ms. Wheeler is on maternity leave right now so I would hope all that works out fine. We should be summarizing those results here in the next couple of weeks.

K. Bradshaw: Will that meeting affect, will be after the next ATSDR study .... will they ....

G. Kaden: I think that their study's not due 'til June.

K. Bradshaw: They pushed it back again. I think Dr. Warren at the meeting ...

J. English: He said June, June 30th.

G. Kaden: We'd love April 30th, I think we all would, but I think June is the best we can get.

(Simultaneous comments)

G. Kaden: So we will see you all back here in May.

C. Gray: But make sure that we make that known to the community who gets used to coming ....

G. Kaden: Yes, that's a problem, because in our newsletters we put out the dates and I thought about discussing this with our community relations people that maybe we shouldn't put the dates, but then we tell everyone on the third Thursday, so whether we put the dates, just leave it for the Thursday, so what we will do is run in the new paper where we normally have the thing saying the meeting is next week, ... and Terry's right, we also sent out to the mailing list a notice that it has been canceled.

J. English: And you may want to put a notice on the outside of the door here in case somebody shows up.

G. Kaden: Yes, and we'll let the guards know because that happened one time in February.

C. Gray: I would hope that we get the meeting minutes with that notice so we don't get it .... now these are pretty lengthy this time, and I got these yesterday, and so to the extent that we can get those out ahead of time, that's always useful.

G. Kaden: That's why we're talking about possibly going to another system.

End of Tape 2 Side 1

Next meeting
Thursday, May 21, 1998
The Depot
Commander's Conference Room
2163 Airways Boulevard
Memphis TN

Attendance List
Restoration Advisory Board Members

Mr. Glenn Kaden	Facility Co-Chair
Mr. Mondell Williams	Community Co-Chair
Mr. Dave Bond	Citizen Representative
Mr. Eugene Brayon	Citizen Representative
Ms. Elizabeth Young	Citizen Representative
Mr. John Garrison	Citizen Representative
Ms. Terri Gray	Citizen Representative
Mr. Carter Gray	Memphis/Shelby County Health Department
Mr. Ulysses Truitt	Citizen Representative
Mr. Ramon Torres	Environmental Protection Agency (EPA)
Mr. Jordan English	TN Department of Environment and Conservation (TDEC)
Mr. Kenneth Bradshaw for Mr. Kevin Clay	Citizen Representative
Ms. Margaret Currie for Ms. Willie Mae Willett	Citizen Representative
Mr. C. Truax for Mr. James Webb	MLG&W

Others In Attendance

Mr. Phil Amido	Defense Depot Memphis
Ms. Doris Bradshaw	Concerned Citizen's Committee (CCC)
Mr. Jerry Collins	City of Memphis Division of Public Works
Ms. Denise Cooper	Defense Depot Memphis
Mr. Jim Covington	Depot Redevelopment Corporation (DRC)
Mr. John DeBack	Base Transition Office
Mr. Safranski Durr	Citizen
Mr. Terry Flynn	Frontline
Ms. Carolyn Gaines	Defense Depot Memphis
Ms. Pam Gowdy	Defense Depot Memphis
Ms. Jennifer Hall	Frontline
Mr. Justin Jones	Citizen
Mr. Little Mason Lesure	Citizen
Mr. Paul Lewis	AFGE Local 2501
Mr. Benjamin Moore	Agency for Toxic Substances and Disease Registry (ATSDR)
Mr. Shawn Phillips	Defense Depot Memphis
Ms. Dorothy Richards	U.S. Army Engineering - Huntsville Support Center
Mr. Greg Underberg	CH2M Hill

Defense Logistics Agency
Memphis Depot Caretaker

Restoration Advisory Board

Agenda

March 19, 1998

MDC Conference Room
2163 Airways Boulevard
Memphis, Tennessee

Welcome and Introduction		Mr. Mondell Williams Community Co-Chairman
Approval of Minutes		Mr. Mondell Williams
Old Business		
Review of October Minutes	5 Min	Mr. Glenn Kaden Facility Co-Chairman
RAB Charter Committee - Status	10 Min	Ms. Janet Hooks Memphis City Council
New Business		
Report on Greater Memphis Work Group	5 Min	Mr. Glenn Kaden
Memphis Sanitary Sewer System	10 Min	Mr. Jerry R. Collins, P.E. Administrator, Env Engineering Division of Public Works
March BCT	5 Min	Mr. Ramon Torres EPA, Region 4
Field Sampling - Quality Assurance	40 Min	Mr. Greg Underberg CH2M Hill Mr. Shawn Phillips, P.E. MDC RPM
Public Comment Period		
Meeting Adjourned		

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