St. Louis North County
Feasibility Study/Proposed Plan Meeting

Hazelwood Civic Center
Hazelwood, Missouri

7:00 P.M. - 9:00 P.M.
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FACILITATOR CHARLOTTE O'NEIL: Good evening and welcome to the North County Feasibility Study/Proposed Plan public meeting. We're glad to have you here.

Before we start, I want to point out the emergency exits. We have two here on the left, my left, your right, two here on my right, your left. Please note that the two on this side of the building are wired and alarmed. So unless it's a real emergency you don't want to use these exits. But please do if there's a crisis.

Also we would appreciate it if you would turn off your cell phones and pagers so that we can proceed undisturbed by that for the next hour or so.

The first thing on our agenda, I'd like to introduce to you the St. Louis FUSRAP Program Manager who has been responsible for this project, Sharon Cotner.

MS. COTNER: Hi. Good evening tonight. Can everybody hear me okay? I'm going to get real close to this so you can hear.

My name is Sharon Cotner. I work for the St. Louis District Corps of Engineers and I'm the program manager. Thank you for coming this

evening and we're going to get started in just a moment. But before we do, I would like to introduce a couple of folks that are at the meeting tonight. First off, if you'll raise your hand or stand up that would be great.

This is Mr. Bruce Smith. Bruce is the Assistant for Interagency International Affairs with the Secretary of the Army for Civil Works Office. He's here from Washington.

(applause)

MS. COTNER: You might want to hold that for a minute. We don't have that much time.

The next person I'd like to introduce is Ms. Sharon Wagner. Sharon is the FUSRAP Program Manager from Headquarters Corps of Engineers in Washington.

Ms. TommiAnn McDaniel. TommiAnn is our team leader. She's also from Headquarters Corps of Engineers in Washington. Those are the Corps of Engineers folks except for the last one.

Mr. Dan Wall is here. Dan is the Project Manager from U.S. -- I'm going to try not to use acronyms tonight, this is going to be tough for me -- the Environmental Protection Agency Region 7 out of Kansas City.

We also have Art Kleinrath. Art is here, he's the Department of Energy's manager for long-term stewardship. He's here from the Grand Junction, Colorado office. He's here because ultimately the long-term stewardship responsibilities will be turned over from the Corps of Engineers to the Department of Energy for these sites.

The next individual I'd like to introduce is Mr. Fred Johnson. Fred is here from Congressman Clay's office. These projects were recently transferred to Congressman Clay's district.

And the final person I'd like to introduce, last but definitely not least, is Colonel Kevin Williams. Colonel Williams is the District Commander for the St. Louis District Army Corps of Engineers. And Kevin -- Colonel Williams, would you like to say a couple of welcoming remarks?

(applause)

COLONEL WILLIAMS: Thank you all very much. We're really impressed with the turnout and the involvement that you obviously have shown by being here tonight. I know it's not easy

sometimes on a night during the week with all the activities and everything else that's going on. But this is clearly a very important next step in this process of getting these sites cleaned up.

And the public involvement comment period and your comments back to us on how we plan to go about this is vital to us all getting to a solution to this problem. So again thank you all for being here. It really is meaningful to all of us that you're here and will be providing us with comments either on the mike or in writing or both. But we really look forward to your input as we take this next step in this process down the road to ultimate cleanup. So thank you all very much for being here tonight.

(applause)

MS. COTNER: I'm now going to turn the microphone over to Charlotte O'Neil. Charlotte is our facilitator for this evening. She's going to briefly go over some ground rules and kind of give you the layout of how things are going to be going on this evening.

We also have Mr. Jim Werner here. Jim is with the Missouri Department of Natural Resources.

(applause)

FACILITATOR O'NEIL: Okay, rules, rules of the road. The focus of this meeting, the subject matter that we're talking about, is the St. Louis North County Site. So we would appreciate it if you would limit your comments to that. We know there are other sites in this area that you are concerned about. And if you want more information, the Missouri Department of Natural Resources table has a handout with points of contact for you on those issues. But please do limit your comments tonight to the task at hand.

We'll begin with Sharon, our FUSRAP Program Manager, providing a presentation on the feasibility study and the proposed plan. There were copies of the presentation available on the sign-in desk. If you didn't get one on your way in and you would like one, please grab one after the meeting. There were plenty for everyone.

We're going to be certain -- we're committed to making time for everyone to have an opportunity to speak. If you did not sign up to speak it doesn't matter, we'll get to you. If you think of something that, you know, two-thirds through the meeting that you just want to say,

once everyone who did preregister to speak has had their turn, we will call anyone else up after that who wishes to speak. So don't worry.

Only oral comments are being taken. We're not taking questions. This is a hearing format. We're taking your input. It's being recorded verbatim.

If you have questions that you want answered, if you want them answered tonight we have technical folks in the back of the room who are happy to step outside and answer any questions they can for you. Or if you want to wait until after the meeting, we'll have folks here then as well.

If you issue a question in this room, it will become part of the verbatim transcript and it will be addressed in the responsiveness summary. So you'll get an answer that way in writing or personally right here on site.

We're also accepting written comments and questions. If you brought any or if you want to jot something down and don't want to speak, leave them with the girls at the sign-in table.

And I told you about the verbatim record. The verbatim record will be posted on the

FUSRAP website probably within 2 or 3 weeks and you can download it then. If you have problems with that, just call the FUSRAP office. They'll be glad to get you a copy.

Okay. With that, we'll go back to Sharon for her presentation.

MS. COTNER: What I'm going to do is I'm going to give a brief 20-minute slide presentation. What I'm actually going to cover are what I would call the highlights of the Feasibility Study/Proposed Plan for those of you who didn't make it through those very voluminous documents.

These are the general topics that I'm going to cover; the purpose of this meeting if you will, a very brief history of the site, what our objectives were for the Feasibility Study/Proposed Plan, a summary of the alternatives, a more detailed discussion of the preferred alternative, some important dates you might want to jot down or make sure you remember, and a little bit of input as far as what's going to happen to your comments, both the written and the oral comments, and how you can contact us for additional information.

The purpose of this hearing is to allow

the Corps to receive comments from the public on the Feasibility Study and the Proposed Plan. And specifically what we're after are your supporting comments, any reservations you would have, and any other issues that you would like us to address or consider.

The Corps is required to use 9 criteria in selecting the final remedy for this site. And these are spelled out in planning guides. And one of those 9 criteria is community acceptance. And that's why we're here tonight. We need to get your input as to what you believe should be the preferred alternative and what your concerns are.

So what happened and how did it get to this point. First off, we're here because of a federal program. We've thrown the word FUSRAP around quite a bit so far and there's a good reason for it, and that's because it stands for the Formerly Utilized Sites Remedial Action Program, which is quite a mouthful.

FUSRAP addresses contamination resulting from activities at the Manhattan Engineer District and the Atomic Energy Commission in support of the nation's early atomic weapons program. In this case we are particularly concerned about those

activities that occurred in North County.

The types of activities we're talking about are storage of processing residues, migration by wind and water, transportation between the sites in uncovered trucks.

As part of this program in the past, and it will continue in the future, we accomplished extensive coordination with the Environmental Protection Agency and the Missouri Department of Natural Resources.

Specifically in the case of these sites, the story begins with the Mallinckrodt Chemical Plant in North St. Louis City. And just to give you your bearings on this, this right here is the McKinley Bridge area. This is Highway 70. And the Mississippi River is over here.

In 1939 Einstein wrote President Roosevelt that he believed a bomb could be constructed to set off a nuclear chain reaction. In 1941 the United States declared war on Germany and Japan. And in 1942, one year later, an atomic physicist at Washington University contacted Edward Mallinckrodt of Mallinckrodt Chemical to ask him if his company could refine uranium ore -- or uranium from ore using an ether extraction

process. Mallinckrodt agreed, and the processing continued from 1945 until 1957 at the Mallinckrodt facility.

Within a year, Mallinckrodt ran out of space to store the residues or the left over material at the Mallinckrodt plant. At that point in time, the Manhattan Engineer District in 1946 purchased 21.7 acres in North St. Louis County adjacent to Lambert International Airport to store these residues. The airport area is right over here.

Most of these residues were contaminated with uranium, thorium and radium. And they were stored in bulk on open ground at that site. There are some photos at the historical table in the back that will give you a feel for what that looked like.

In 1966 and 1967 most of the stored residues were sold to a private company for materials recovered. The residues were moved from the Airport Site to the Latty Avenue site. On-site structures at the airport facility were razed, buried on the property, and covered with clean soil.

And although this covering reduced the

surface dose rate to an acceptable level at the time, buried deposits of uranium, radium and thorium remained on the property. In the last 5 years the Corps has removed some of this material under an interim action. However, material still remains to be addressed. And that material is the first part of what is being addressed in this Feasibility Study/Proposed Plan.

As I stated earlier, the Airport Site residues were purchased and moved to a storage site on Latty Avenue. And this is -- Latty Avenue is running this way right up here. And Highway 170 is over here. So this is actually an area west of Highway 170 for those of you familiar with the area.

At the Latty site the material was dried and subsequently shipped out of state to a mill in Colorado. The property was sold, and the new owner, in preparing for the property for use, demolished one building, excavated portions of the property and paved areas. The excavated material was piled on the eastern part of this property.

In 1984 and 1985 the Department of Energy added additional material to this site. The material came up from cleanup action that

occurred along Latty Avenue in support of road and utility improvements in the area.

At this point, those large piles became known as the Hazelwood Interim Storage Site. And that's where the name HISS comes from out here, HISS, Hazelwood Interim Storage Site.

In the last 3 years, these large surfaces piles, which originally were located here, and you'll see them in some of the photos as being covered with a green -- what appears to be a green fabric, in the last 3 years these large surface piles were removed and shipped off site by the Corps of Engineers as an interim action. However, once again, subsurface soils remain to be addressed. And that's the second component that's addressed in the Feasibility Study/Proposed Plan.

So that's two of the three components. The third component is the Vicinity Properties. Now when the material was transported from the Airport Site to the Latty Avenue site, it was moved in uncovered trucks along roadways. We find it amusing. They found it standard practice. Material fell off of these trucks and into the roads and ditches along the road, contaminating several of the private properties located along

these transportation routes.

In addition to the spillage from the trucks, material migrated via wind and water from the Airport Site and Latty site onto adjacent properties and into Coldwater Creek. And these properties are identified in this map. This right there, that little funny looking wedge, is actually the Airport Site that you saw a photo of a moment earlier. This is Coldwater Creek, this little line there. And this area right here, there's Latty Avenue, and these are the Latty Avenue Properties.

And that is the third component that's being addressed by this Feasibility Study/Proposed Plan.

This slide presents a schematic breakdown if will you of the North St. Louis County site. There are three sites circled. And the circles indicate that those sites were placed on the Environmental Protection Agency's National Priority List. And because these three sites are on the National Priority List, the Corps has been working very closely with the Environmental Protection Agency and the State of Missouri to develop a Feasibility Study and Proposed Plan.

So what's in this Feasibility Study and Proposed Plan? Well, there are four primary objectives of the Feasibility Study and Proposed Plan and they are as follows:

The protection, first and foremost the protection of human health and the environment. Secondly, outlining a proposed approach for cleanup. Third, evaluating the various alternatives that have been identified. And fourth, minimizing adverse impact to the areas' businesses.

Now I'd like to briefly run through the six alternatives that are presented in those documents.

The first alternative is a no action alternative. This is a legal requirement that we have to include in the document. And essentially it is no action. None of the material would be removed or disturbed. What you're really talking about here is leaving everything as is and instituting periodic environmental monitoring to make sure that the material stays where it is. The cost for this is 1.5 million dollars.

The second alternative is partial excavation and capping at the Airport Site and at

the Latty Avenue HISS site. Again, a cap is essentially placing an engineered cover over the soil. What we're talking about with this alternative is excavating soils from the Vicinity Properties and disposing of them at an out of state licensed facility. The soils located at the Airport Site and the HISS Latty site would be capped. And institutional controls, such as fencing and deed restrictions and zoning, would be used to make sure that access was limited to those contaminated areas. The cost for this plan is 205 million dollars.

The third alternative is partial excavation and treatment. And treatment essentially is referring to soil sorting and soil washing. They're very limited technological tools that can be used to treat the rad (radioactively) contaminated material. Soil sorting is essentially separating the soil based on the amount of radioactive contamination. And soil washing is essentially washing the soil with liquid so that you remove the soluble contamination.

What we're talking about in alternative 3 is excavating the impacted soils from the

Vicinity Properties and the HISS Latty property, consolidating them, and treating them at the Airport Site. Then we would use institutional controls to limit access to the contaminated areas of the Airport Site. The cost for this alternative is 284 million dollars.

The fourth alternative is exclusively institutional controls. Institutional controls, such as I mentioned a minute ago, are deed restrictions, land use restrictions and zoning restrictions. And what their purpose is is to limit the future land use at those areas. These institutional controls would be applied at the Airport Site, the HISS Latty site, and for all of the Vicinity Properties. And the cost estimate for that is approximately 129 million dollars.

The fifth alternative is the preferred plan. So I'm not going to go into as much detail on that right now. But essentially what it is is excavation of impacted soils from the Airport Site, the HISS Latty site and the Vicinity Properties, and shipment off-site with institutional controls on areas that are difficult to access beneath roads, bridges, railroads and other permanent structures where contamination is

known to exist. The cost for that is 223 million. And again in a minute I'll address that in more detail.

The sixth alternative is excavation at all properties. It's very similar to alternative five except that institutional controls would not be applied and material underneath roads, railroads, bridges and permanent structures would be removed.

I'd like to point out that although this includes excavating under the roads, railroads, bridges and permanent structures, it assumes that the local municipality or land owner makes the soil available as a result of road improvements, building demolition or other types of activity and this may not occur until sometime in the future. The cost of 286 million only includes the cost for the Corps to go in, pick up the soil and dispose of that soil off site.

Now what I'll do is go into a little bit more detail with regard to alternative number 5. Alternative number 5 is the Corps's preferred plan. And what it consists of is excavating accessible radium, thorium, uranium contaminated soil to meet the following criteria:

Surface soils -- and surface soils are the first 6 inches of soil just so everyone kind of knows what the definitions are here -- surface soils and sediments would be remediated to a criteria of 5 picocuries per gram for radium, 14 picocuries per gram for thorium, and 50 picocuries per gram for uranium.

And just so everyone understands, a picocurie is the unit of measure that we apply to measure radioactivity in soils and sediment. And to give you an idea, a picocurie is 1 times 10 to the minus 12th curie, which is a decimal point and 11 zeros and a 1. Now that's kind of hard for most of us to fathom. So here's a visualization; imagine 6 Busch stadiums stacked one up on top of the other, 6 of them. Fill Busch stadium with white one-inch ping pong balls all the way up. And place 1 blue one in there. And that's one picocurie. That's the amount of measurement we're talking about in this case.

For subsurface soils and sediments the criteria would be implemented of 15 picocuries per gram of radium, 15 picocuries per gram of thorium, and 50 picocuries per gram of uranium.

Coldwater Creek sediment below the mean

water gradient -- and again, mean water gradient is a fancy way of saying the average water level in the creek -- those sediments would be remediated to criteria 15 picocuries per gram for radium, 43 picocuries per gram for thorium, and 150 picocuries per gram for uranium.

These cleanup criteria are based on different exposure scenarios in ensuring that the cleanup is protective when completed. So, for example, on Coldwater Creek we went through a modeling analysis to make sure that a child playing in the creek would not be harmed by any material left behind. Or another example would be that if you plant a garden in your back yard and you grow tomatoes and you eat those tomatoes, you will not be harmed. Those kinds of scenarios are what are examined as a part of this analysis.

When the excavations are complete, the Corps would go back and sample the areas to ensure that the criteria have been met and to document the protectiveness of the site.

Inaccessible soils -- and by that we mean soils that are currently under cover, such as roads, bridges, railroads and structures -- would be addressed under this alternative with

institutional controls. Institutional controls would be put into place to ensure that these areas remain covered and continue to be used for their current purposes. For example, areas currently used for roads would continue to be used for roads in the future. These controls would be documented in a long-term stewardship plan which would be coordinated with the local, state and federal government entities involved, as well as the stakeholders.

The protected groundwater aquifer is not impacted by FUSRAP contaminants. However, groundwater monitoring is included in this alternative to assess the effectiveness of the remedial action and to ensure that the excavation itself does not create any problems.

Regarding structures, criteria is being developed based upon an equivalent dose from the 5 picocurie per gram standard which is used for the radium in the soil.

All above-criteria soil and sediments would be sent out of state to a properly permitted disposal facility.

Finally, extensive personnel monitoring and site monitoring would be conducted during the

excavation to ensure that no contamination moves off of the site.

So that's what we have as our preferred alternative. And the question you may be asking yourself is why. When the Corps of Engineers examined all of the alternatives that were on the table, our analysis indicated that alternative 5 actually best balances cost, permanence, which is another way of saying the degree of certainty that the plan will be successful, and the long-term effectiveness.

Alternative 5 is protective of human health and the environment. It's highly implementable from a technical and from an administrative standpoint. It's doable. It minimizes economic impact to businesses, utilities and communities. And it does not include on-site disposal which was previously rejected by the public.

Here are some important dates. First off, I'd like to point out that the public review period had originally been scheduled to conclude tomorrow, May 30th. We had a request from a public entity that we include a 45-day extension. And we are going to go ahead and follow up with

that. So the comments will not be due until the 14th of July now. So the concluding date, if you have a newsletter you'll note on the back there's a sticker on there that indicates that the public review comment period has been extended until July 14th.

However, this public meeting will be the final opportunity for furnishing oral comments officially. No additional hearings are scheduled before the 14th of July. However, written comments may still be submitted. And we'll talk in a moment about where you can send those to. The comments will be considered, and in conjunction with the United States Environmental Protection Agency, a Record of Decision which will identify the selected plan will be issued in early 2004.

So what happens to your comments if you send us a letter, send us an e-mail or make an oral comment tonight. Well, we'll respond to each comment as we write the Record of Decision. And the way in which each comment is addressed will be recorded in a document entitled a responsiveness summary. Now the responsiveness summary is going to be an attachment to the Record of Decision.

And these documents will be available to the public in early 2004.

They will be available in a number of different ways. You can get the documents or any other information regarding FUSRAP from these sources; you can consult the web and this is the St. Louis District website. This will take -- this specific address will take you right into the FUSRAP page. You can e-mail our public affairs officer, Jacque Mattingly, who is here at the table up here. You can visit or write us at the Latty Avenue office and this is our address. You can also visit the public library. This is the address for the city library. Our documents do go there. But they also go to several county libraries. And we have a list of which of those libraries they go to also. So if you would prefer to visit the county library you can do so and pick up the documents. Or you can call one of these phone numbers here and those are direct lines into the office.

Your thoughts are very important to us. So I encourage anyone, if you have any reservations or just questions, to send them in. We would very much like to hear what you have to

say. And use any of those methods that I previously identified. They will all work. We will get back to you.

And having said that, I think I'll turn it back over to Charlotte and Charlotte is going to start the oral comment period.

FACILITATOR O'NEIL: I've been provided a list of everyone who signed up expressing a desire to speak. I'll call you one at a time, and when I call you if you would come around and down this side to the microphone. Be sure you can be heard. Introduce yourself. Make your comments and then go on back to your seat around that way. Does anyone have any questions?

WOMAN IN AUDIENCE: Yes. Will we be hearing from any other groups tonight informationally like MDNR or EPA or are they scheduled to speak or is this just open to the citizens right now?

FACILITATOR O'NEIL: It's open to anyone.

MR. WERNER: We came prepared with our analysis.

WOMAN IN AUDIENCE: Well, I had a question and I don't know that it would be

pertinent if I heard from them. I just wondered if it would be more useful to hear from whoever has anything to say from our agencies so that we could then maybe make more sense, make more intelligent comments.

FACILITATOR O'NEIL: That makes sense. Is that all right with you? Jim Werner from the Missouri Department of Natural Resources.

MR. WERNER: Thank you very much. I think we heard a very good presentation, an overview of the plan.

The Department of Natural Resources has a special role, as many of you know, as an independent technical reviewer of the plan here. And I just want to outline that. Then I want to talk a little bit about what I think we've accomplished all together and then go into the comments.

The Department of Natural Resources as a state regulator has been involved in this site since the beginning. And as many of you know, because it's a federally -- it's a federal cleanup responsibility, that is, the Army Corps of Engineers is dealing with what is a Department of Energy waste product, the EPA doesn't have the

normal regulatory role because of something called the unitary executive theory where one federal agency is not allowed to regulate another federal agency in a normal manner.

So that means the state government takes on I think an added burden, an added responsibility here, and we have been doing that for nearly 20 years now. My role in this has gone back I think 15 years.

Sharon I think aptly provided you a time line. I'm not sure if people appreciated the time line and how important tonight is as part of that time line. Again, 1942 the first uranium was extracted here in St. Louis that went to the Enrico Fermi reactor in Chicago. In 1986 the FUSRAP program begins. In 1994 the critical decision is made to not entomb the waste but rather to clean up the waste. In 1997 the decision is made to turn the program over from the Department of Energy to the Corps of Engineers. And now here we are tonight in 2003.

So I think it's an extraordinarily important historic landmark that you should keep in mind as we go down this road. I guess one of the first comments in terms of process I might

offer is rather than have this be really the last opportunity for a public involvement process, that assuming that the cleanup plan goes forward and is funded and all, and then things go and the cleanup occurs, that we don't just step off into infinity forever and this is the last time the public has an opportunity to speak on it. But rather that we circle around when the cleanup is done and that we review the cleanup that's been accomplished, and then have an opportunity for public comments before the hand-off is made between the Corps of Engineers to the Department of Energy.

There are an enormous number of questions to be answered once we assess what the results of the cleanup are and then how are we going to handle it here on in. Because as you appreciate, this is not only a public health question, but really a community development question. How will the community be able to live with whatever residual radioactivity exists under the roadways or whatever is left. I think the community is going to continue to need input on how that is done. It's just extraordinary just from my perspective having been involved in this for quite some time. So that would be the first

comment in terms of process.

Let me, before I get into the comment, also let you know, Colonel, you've been here, we met when you first arrived at the district. This is a district that will do you proud. This is a site that some of you have been involved in that languished for quite some time. Nothing happened for too long. And there's a lot of impatience and people have been more than patient about the movement of the soil.

The Corps got involved, and the Corps knows how to move dirt. And the Corps has done that. And resulted in a lot of action that didn't occur before. So from my experience having been involved for 15 years, I can look at the patterns, and the Corps has really accomplished a great deal up 'til now. And I think that's something for the Corps to be proud of. However, we're now faced with this decision dealing with the cleanup criteria.

I'd also from an historical perspective, Dan, I remember being in meetings with you where 5 and 15 was just another item on the list here. Here we are in 2003 where 5 and 15 is what's before us. 5 and 15 is not complete background

greenfield cleanup, but it is the best cleanup that has been -- it's the best standard that has been involved at that time. So the fact that we're here now is also a credit to this process. Not to get involved in that too much, but I know you guys worked very hard on that and it's a credit to you.

Finally, I want to give a lot of credit to the citizens here. Colonel, you talked briefly about the important role of citizen input. But this has been a poster child for citizen input. Sally Price. Kay Drey. Sally mentioned that her son was 2 years old when she started this process and he just graduated from high school. I hate to think of how much hair I used to have when I started this process. But these folks have been at it a long time. They've been involved. They're not getting paid for this. So I think that an enormous amount of credit goes to them.

Having said that, giving a lot of credit where credit is due, we are here tonight to consider not only the decision about cleanup criteria and the options that Sharon may have, but trying to address you know, how do you deal with implementation, how do you deal with the number of

questions left. There's a number of issues and I'm not going to go into them in detail. I'll just try to tick off some of the issues we still need to deal with.

I guess first in terms of the overall format, I guess the plan that many people have in a sense is only half a plan, because the plan is dependent on the subsequent long-term stewardship. And the long-term stewardship hasn't been dealt with. It's like the third leg of the stool. And the long-term success of the plan is going to be dependent on the long-term effectiveness of the stewardship plan.

And I know that you said the current understanding is that the Department of Energy will take that over. But clearly, for anybody who's been following it, there's a lot of uncertainty about the Department of Energy activity in that area. There's been several reorganizations that have gone on. There's no longer a long-term stewardship office as of the next fiscal year in the Environmental Management Program. It's now subsumed within a new office. I don't know what the funding or responsibility is. There are a whole lot of questions about how

that will work. Again that's why I think we need to cycle back on that.

So as much work that has gone on into this, it's directly dependent on the long-term stewardship plan and we'll need to see some more work done on that.

But, remember, that this is a unique circumstance that the Department of Energy has not dealt with very often. This is generally not federal property we're talking about. This is private property for the most part. Whereas a lot of the Department of Energy facilities is government owned, contracted out facilities. And there's a whole world of difference in terms of how you manage it and the assumptions you make in terms of long-term stewardship.

Even down to the standards, 5, 15 picocuries, all those standards, a lot of them were developed where you had government-owned property, not privately owned property. And I think that needs to be considered. And I know you guys may know that, but there's got to be some internal process on the implications of that, particularly inviting the land owners and the community development as they consider future use.

WOMAN IN AUDIENCE: Could you be a little louder for us old people?

MR. WERNER: Sure. Sort of just to summarize what could really be the topic of another meeting, -- and I suggest that it should be in the future -- the whole long-term stewardship issue. The sort of language that I think might be very useful to the community here could really be cribbed from what the Corps has done at downtown sites to address long-term stewardship. And I think that provides a good point of departure that you've worked with Mallinckrodt on that sort of language for long-term stewardship.

The soil and the groundwater of course offer very special and different circumstances. We're talking generally here of 5/15 in the soil, 5 picocuries per gram for the top 6 inches, 15 picocuries per gram for 6 inches and below. So obviously it's not a walk-away standard if you only meet 5 and 15 because anything below 6 inches has to be -- you have to deal with that with a different land use obviously. That's just implicit in the way the standard is designed.

However, it doesn't necessarily mean

that every 5 and 15 cleanup will require long-term stewardship. Our sense is that it's possible to implement this in a way that will result in an unrestricted use cleanup. That's why it's important that the long-term stewardship post remediation risk assessment be done carefully, really an integral part of the cleanup, not to particularly stand alone. And I think that many of the aspects incorporate that in the current plan.

Finally, the groundwater question. Right now the plan appears in some cases to suggest that the groundwater will not be monitored for long term. We believe that it's prudent to assume monitoring unless you can demonstrate on line that it's not required. I think it's possible to do that. But right now I don't think we can assume that the groundwater monitoring will not be required. That's to be seen.

Finally, the roads, the assumption in the plan is that the roads are permanently inaccessible. That's not necessarily a reasonable plan because of road repairs and changes. And you can look down the road here about 100 yards and see changes in roads going on all around us.

Again, it goes back to how we deal with the institutional controls for long-term stewardship if it's not fully integrated in that or there's funding for it. Who is going to pay for when a roadway changes in the future and how is that going to be incorporated. That's not something that the Department of Energy has generally dealt with with many of the sites they've done in the past where you have these very remote uranium sites largely in the western United States for the most part.

Finally, buildings contamination. There are some concerns about we know at least some buildings have identified the contamination. Most of the plan deals with just soil. So I think we need some more attention to what process will be used for dealing with contaminated buildings. For example, when you replace a roof on a building and find out all your roofing shingles are contaminated with uranium. How do you deal with it, how do you monitor it. That has to be part of the plan and the long-term stewardship.

And finally, as to the cleanup, Missouri, as many states do, has policies no rad added in landfills or for backfill for

landscaping. And already in the United States we've paid hundreds of millions of dollars for cleaning up sites where people move radioactivity from one site for a cleanup and then it got used for landscaping in other areas and then the landscaped areas had to be cleaned up again and spend more money and more time dealing with that.

Downtown Grand Junction actually is a beautiful downtown because of all the additional landscaping that was done to put in nice pedestrian ways because of the contaminated soil that was found in the area. It's not something I think the community wants to go through here. It's a low criteria contaminated soil that we can dispose of in an appropriate way and not use it as backfill or in a landfill.

The Corps has addressed doing an ecological risk assessment for Coldwater Creek. We believe that a more rigorous job technically needs to be done with regard to risk assessment and focus on the special concerns regarding Coldwater Creek.

Finally, the Corps has appended what's known technically as an applicable or relevant and appropriate requirements and feasibility study.

And it's not clear that we agree with their analysis there. That's something we'll be commenting on in the future.

I appreciate the opportunity to comment and applaud you for the hard work and the long distance you traveled. Wish you Godspeed and we'll be with you for the rest of the journey because it's still a ways to go as we all address this. And particularly applaud the citizens who have been with it for this long. And we'll keep doing our job since you guys have been with us for this long. Thank you.

(applause)

FACILITATOR O'NEIL: Okay. The first speaker I have is Sandy Delcoure. Please forgive me if I pronounce your name wrong. I'm good at Irish names only.

MS. DELCOURE: Good evening. Can everybody hear? My name is Sandy Delcoure and I live on Coldwater Creek. There's tremendous increasing development along the creek that will add to future flooding along the creek. Dust from radioactive creek sediment deposited along the creek's banks from the rise and fall of the water can become airborne, give off radon gas and be

inhaled. This is why it is important that Coldwater Creek be given attention and be cleaned up where it's contaminated.

Coldwater Creek is an urban stream with homes, schools, churches, businesses and parks all along its banks. Children play along the creek's banks right up to the edge of the water. It would be very much appreciated if Coldwater Creek were checked and made safe for the community. And from what I've heard, it sounds like you are really doing a good job and trying to do that. Thank you very much.

(applause)

FACILITATOR O'NEIL: Alf Stole.

MR. STOLE: Evening. My name is Alf Stole and I'm a citizen of Bridgeton.

It is good to see that the Corps of Engineers has taken an active and leading role in removing the waste from the various sites in the North County. When we saw the picture a while ago we heard that the waste originated in St. Louis. It was moved to a site next to the airport. From there it was moved to Hazelwood to Latty Avenue. And as I understand it, it was moved from that place and some of it was moved to the Westlake

Landfill in Bridgeton where I live.

I was on the City Council in 1973 when this took place. I also served as a mayor for four years shortly thereafter. But I don't understand why this was done. It doesn't seem right to move this material so much around. And now quite a bit, I understand as much as 170,000 tons of radioactive material is located in the Westlake Landfill in Bridgeton. And this is also in the Missouri River watershed. And some of it could possibly move from this landfill and get into the water in that Missouri River plain.

So what I'd like to see is that the Corps of Engineers would take over the responsibility and the lead to move on getting the radioactive material out of our city, out of Westlake Landfill.

And thank you very much, all of you, for listening to me.

(applause)

FACILITATOR O'NEIL: Byron Clemens.

MR. CLEMENS: My name is Byron Clemens. I live at 100 Arundel in St. Louis County. My zip code is 63105.

I too applaud the action that's come

from the Corps of Engineers as opposed to the Department of Energy that sat on these wastes for so long and did little to nothing.

I'm a member of the Coalition for the Environment. I've been actively studying, testifying, suggesting, hoping, that all of the waste, all the U.S. government's waste, these are not our wastes, they belong to our government, be moved from all of the St. Louis FUSRAP dumps since 1979 is the first time I took any action on this.

A friend of mine who is a St. Louis city police officer came to me as an environmentalist and said they want to put a police driver training school on top of the Airport Site, is that a good idea. And I read the plan and looked at the site and came back to him and said no, I don't think that's a very good idea, as a matter of fact they should clean up the site. It's a ludicrous place to have a radioactive waste site. It's in contact with groundwater with Coldwater Creek. It's on a floodplain across from the Khoury League Baseball Field. Then when I looked at the plan, some of the highest radiation sites around there were outside of the site, in a ditch along McDonnell Boulevard, on the Khoury league field itself it

had some hot spots.

That was when I found out about the Latty Avenue site. At that time the site was unfenced and had no signs. I went to a hearing with the Department of Energy, the NRC, the EPA and DNR, they were all there. And people asked about the kids who were playing on top of the uranium mill tailings at the site, riding their dirt bikes up and down. And no one would say they would fence the site or put up signs. So I and two of my friends went out and put up signs at this site. Soon they found the money to fence the site and start monitoring.

There's uranium, thorium, radium and radon at the site, all the daughter products. We all know the litany of the ballfields, Coldwater Creek itself, the sediment which had 10 times background radiation in the sediment of Coldwater Creek, the industrial sites.

I grew up along Coldwater Creek. My father worked for McDonnell Douglas which is now Boeing. The ventilation for his building came from off the site.

There's been a long history -- and one of my concerns is voiced by the gentleman from DNR

is what happens after the site is cleaned up. The history up to this point about funding, switching titles from the City of St. Louis, quit claim deeds, who owned the site at that time, what will happen later on. And I don't think the history of institutional accountability up until this point has been very credible.

I think the site for any remaining wastes, it's still in a populated area. It's still in a 100 year floodplain. There's still bubbling springs on the site and near it. I think any possibility of future contamination of drinking water and children would say that alternative 6 is the best one to remove all the waste from the site, including the stuff from Westlake Landfill.

And I would like to see after the site is cleaned up that it's clear who has the responsibility and ownership, and that it have independent monitoring outside of -- you know, for example, I think the Corps of Engineers, if they could do oversight along with the DOE, if the DOE is taking over these sites again, I'd prefer that wasn't the possibility, but I'd really like to see plans for what future monitoring will be.

And this history has been somewhat personal on some levels. I've gone to these hearings, there was a man in this building who had a colostomy bag. He said his family had a family farm, had taken water from Coldwater Creek and had a well, they used it for irrigating their farm but they drank the water all the time. Both he and his father had cancer.

At a hearing, I guess this was in '97 at the Clayton Hotel, there was a young woman who sat next to me who said her little boy was 6 years old, had childhood leukemia. I think she lived on Nyflot. I believe that's site 41 up on the map there. She said there was a cluster of leukemia with kids in grade schools in that area that was all contaminated by the trucks that you talked about that had no coverings as they went back and forth.

I met some Mallinckrodt workers who worked down at Broadway and Destrehan were all exposed to this waste. So, you know, 60 years of the St. Louis area putting up with this, it's time to relieve us of this waste. And we do appreciate that we're getting closer.

I looked at the plan today and page 10

of the Corps's proposed plan says: Coldwater Creek is not significantly impacted. I don't agree with that. I think there's previous studies that show that it is impacted on and I think it needs a lot of remediation. I hope that would be part of the final plan. And the uranium itself we know is Belgian Congo pitchblende. That's a higher level of uranium 238. It wasn't refined very well.

So I know there's still hot spots. I have faith that you guys are going to do a good job of trying to find those spots. But I think some of them could be in those institutional areas we're talking about, roads, bridges, the sediment of the creek. And I really hope before anyone walks away from responsibility that we really thoroughly document the area.

Page 12 of the plan admits its CERCLA risk range could be exceeded at many of the sites in the future. And I think that's a real issue. I think the only acceptable alternative other than removing these wastes to DOE's Headquarters in Washington is number six. And I would include the Westlake Landfill site which I believe was illegally dumped under an NRC license by B & K

Construction Company.

All the sites should be cleaned up to as low as technologically feasible. Once again, I have to say 60 years has been a long time for this area to be exposed.

And I would like one more thing, looking at that creek again, could we possibly look at the same criteria of 5/15 picocuries in the sediment of the creek for the entire length of the creek, is that a possibility. Thank you very much.

(applause)

FACILITATOR O'NEIL: Fran Sontag.

MS. SONTAG: Hi. My name is Fran Sontag. Let me say at the outset that the cleanup of the contaminated sites which has already been done is greatly appreciated. And your interest in continuing to do a good job is evidenced by this meeting.

However, I have some concerns which I feel need to be addressed. These involve answering a question which you could call how clean is clean. And it's, you know, kind of a judgment call there.

Since these sites are in highly populated urban areas, and since the way we answer

the question will affect our children and grandchildren for hundreds and thousands of centuries, I feel strongly that we should go for the cleanest clean which is possible.

And I choose the word possible rather than feasible because I do not think we should take the easy route in a manner which will have consequences which last longer and are more serious than we really would like to imagine.

A big problem factor is that Coldwater Creek runs through the area. And during and after a flood, sediment is spread over a wide area outside the creek banks. Then after the water subsides, this contaminated soil would naturally tend to erode and get dry and blow about over an even wider area. And then the next flood and drought cycle would spread the dangerous stuff more, and so on and so on, for a long, long time.

So I hope you can see my logic of removing as much as humanly possible now while it's relatively close to where we can identify it and deal with it. Because this dust is not just any dust. As we've mentioned a number of times, it contains uranium and thorium and radium particles. And these eventually break down into

radon gas. And this gas or the dust containing these particles is inhaled. It gives off radioactive particles and rays within one's body which cause havoc of all kinds. These are especially damaging to children I think. And I'm a grandmother of 9 and I have concerns for their future, and even more immediate concerns for the families who are really living close to these dangerous sites.

So I would urge you to dig more deeply all along Coldwater Creek and its bank for quite some distance. And when you finish that, I guess you would include this, remove the gabion wall or whatever that is, that rocks and chickenwire which is there now and replace it with something more permanent which can be monitored for nuclear contamination regularly on and on into the future.

I would urge you to dig more deeply where the big piles of contaminated soil have already been removed. Maybe somebody just said that they were going to do that, I'm not sure. Because surely some has already leached into the underlying soil.

And one more thing. I visited that site fairly recently and I felt like it was very poorly

marked. It's almost indistinguishable from the many industrial sites that are really close by. Perhaps some larger, more colorful and clearer signs would give a better warning to the uninformed visitor that this is a real hazardous waste site.

I thank you for the consideration of my concerns, and one more time would urge you to do the right thing and do a really thorough job. Thank you.

(applause)

FACILITATOR O'NEIL: Kay Drey.

MS. DREY: First, I have to find my legible copy. I was hoping I'd be all at the end and then I'd have everything nice.

My name is Kay Drey. I live at 515 West Point Avenue in University City.

In April 1942 the United States government contracted with Mallinckrodt Chemical Works to purify tons of uranium needed for the highly secretive goal of creating an atom bomb. In only 50 days Mallinckrodt was successful and went on to purify all the uranium used in the world's first self-staining nuclear chain reaction in Chicago on December 2nd, 1942.

The atomic age was born, and so was nuclear waste. But as I have said often, after first learning in 1978 about St. Louis's pivotal role, the brilliant scientists who carried us into the atomic age were never asked if they could get us out.

Mallinckrodt processed uranium at its downtown plant for 15 years, and then for about another 10 years at Weldon Springs in St. Charles. More than a billion dollars have already been expended trying to clean up the radioactive wastes that were generated as the result of Mallinckrodt's 25 year participation in the production of nuclear weapons for the Manhattan Project and the Cold War, and as the result of the 36 years since then during which these wastes have eroded, leached, blown and spilled throughout our metropolitan community.

I'm here tonight to urge the Corps of Engineers to seek the funding first to undertake a thorough radiological survey to evaluate the groundwater, surface water and lands known or suspected to be contaminated using the best available technology, and then to seek funding to clean up all those sites that exceed the 5/15

picocurie standard where the public currently has access or is expected to have access in the foreseeable future, including the sites from which contamination will continue to migrate onto accessible land and water. And also to seek funding for the exhumation, transport and disposal of the wastes, removing them from our densely populated urban area situated where creeks and rivers flow and overflow, threatening the further dispersal of the contamination.

The proposed final remedy for the North County site should be as final as our state of the art monitoring, extraction, isolation and transport technologies can provide. And should be based on standards that reflect today's knowledge of the hazards and risks of those wastes into the far distant future.

I always -- just it's mindboggling to me to think that uranium 238, the predominant material here, has a half life of 4 and a half billion years. You have to multiply that times 10.

I guess one of my main concerns is Westlake Landfill which has been mentioned this evening. It's only I think -- I'm sorry, I left

the numbers at home, the river miles -- but I believe it's about 6 miles, maybe it's a little more than that, upstream from the North County drinking water treatment plant in Florissant. I think it's Howdershell Road. Coldwater Creek meanders through residential neighborhoods, past parks, churches and so forth.

It is -- I'm sorry, I'm getting a little confused. Now I want to talk about Coldwater Creek. Okay, Westlake Landfill impacts upon the Missouri River upstream from where the Florissant drinking water in-take is. And then the Coldwater Creek concern is very basic to all of us. I think we all would like the creek cleaned up as well as possible. I think it's even hard to monitor it accurately. But it does flow through populated areas, past schools and churches and homes. And I just think that, as the speaker right before me said, it's going to continue transporting all these wastes.

I think the gabion wall at the west end of the Airport Site should be removed and not, I don't know, washed off. I was talking to somebody earlier this evening. I think it should just plain be removed. The gabion wall is chickenwire

with rock in it. But they put it onto the land right where it's extremely contaminated, very high levels of radioactivity when they installed the gabion wall.

And I at the time said that I felt that not only were they badly exposing workers with no protective clothing, a little bit of some overalls but that was about it, no breathing apparatus, but I said why are you putting this stuff into this contaminated shoreline along Coldwater Creek when you know this is very, very highly radioactive dirt. And I knew they would have to remove it some day. Well, I certainly hope now that that time has come that they will remove the gabion wall because it is highly -- it is filled with sludge and so forth from the Airport Site.

I think even to hint at using institutional controls for anything would just be a laugh when you're talking about half lives that we're talking about. I mean the paper won't even last for 25 years that the institutional controls are written on. And I have wonderful documents at home that the Department of Energy and other agencies have paid for that are entitled things like how to communicate with people 300

generations from now.

And this is just supposedly the only requirement for these sites is to have a 1,000 year protection or at least 200 years. I've never understood that sentence. But I think when you're talking about the materials that are as hazardous for as long as ours are, institutional controls and 1,000 years are just not acceptable.

I guess I should say that my number one wish is that we should stop generating more of this stuff until we figure out what to do with the first 61-year accumulation that we already have.

(applause)

I do want to say that I realize -- I unfortunately didn't write down, I think it was Sharon Cotner who did something about the baseball stadium filled with something like ping pong balls or something. I was trying to do something else at the same time. And then there would be one ball that would be blue or something and it would be a picocurie.

Please don't discount picocuries. I'm not saying this to Sharon Cotner but to all of us. We should realize that, A, a picocurie gives off 2.22 radiation particles or rays, disintegration,

2.22 every minute. And when we have materials as highly radioactive as we have, that's a lot of radiation particles to have to be concerned about. Particularly again going back to Coldwater Creek when you're talking about water that can overflow into people's backyards where they have gardens perhaps with vegetables.

Because another concern about our St. Louis sites is that we have a lot of alpha emitters, alpha radiation. And some people say well, alpha radiation is no big deal, it can't even penetrate a piece of Kleenex. However, if you inhale uranium, thorium, radium, radon gas and so forth, and that gets into your system, into your lungs, for instance, and those materials give off alpha particles, an alpha particle is considered, even by the Nuclear Regulatory Commission that likes all radioactivity, an alpha particle is considered 20 times more hazardous than beta or gamma. So a picocurie of alpha-emitting radiation is not insignificant.

And I guess I just want to sort of repeat again that our -- we have been involved in the creation of materials for nuclear weapons. Our nation is the only nation fortunately to date,

I mean it's good no one else has done this, but our nation is the only nation that has used atomic weapons of mass destruction against real people.

We all hope of course that this will never have to happen again. But I think the ultimate irony of continuing to have to deal with these materials is that we are -- we have been killing our own as a wonderful book is called.

And now the administration in Washington, D.C., if you can call it an administration, is proposing to generate more nuclear weapons and test them. And I think that is just an outrage.

So let's try -- and I do also join with the others in thanking the Corps of Engineers for working as hard as they are working. I hope they take good care of the workers. I continue to worry about the people who are cleaning up these materials.

I will just add one fact that I've been hearing from one man who is dying who worked at the downtown site, the Mallinckrodt site. In nature you may be exposed to let's just say 10 or even 20 counts per minute, radiation particles per minute in natural background. And he was, in the

work he was doing, digging below the ground at downtown Mallinckrodt, he was exposed to a 1,300,000 counts per minute.

So this is hot stuff. It's dirty stuff. And let's get on with the cleanup. Thank you.

(applause)

FACILITATOR O'NEIL: Rebecca Wright.

MS. WRIGHT: My name is Rebecca Wright and I live in the City of St. Louis on Rutger Street.

Much of the radioactive waste has been removed from the North County site, including contaminated soils and other materials from the various sites, and the radioactive materials have been shipped to facilities in Utah and Idaho. That in itself is a tremendous accomplishment. Even though the waste still exists, hopefully it is and will remain isolated, and hopefully no workers were exposed to radiation in the cleanup process or the storage process or ever.

However, now it is important to complete the task. Many areas in the North County site, including Westlake Landfill, still have surface and subsoil contamination and sediments that contain high levels of radium, thorium, uranium,

protactinium and actinium. Some of these elements will emit radioactive particles for millions of years and have the potential to be taken up by plants and to poison or mutate human beings and animals now and virtually forever.

Perhaps long after institutional controls, origins and presence of the waste will fade from recorded history. That's why all of the remaining contaminated materials should be removed as soon as possible while there are still means and funding and the will to do the job before the contamination spreads and affects present and future generations.

I urge the Army Corps of Engineers to press for the most complete and technologically feasible cleanup of these wastes. And this should include excavation and removal of all the contaminated material from all the sites, and include appropriate monitoring of a site before, during and after cleanup, and include cleanup of the inaccessible sites as soon as possible, and to include cleanup of Coldwater Creek, banks and sediment to a 5/15 standard because of floods and the water levels and the potential to spread the contamination. Thank you.

(applause)

FACILITATOR O'NEIL: Sally Price.

MS. PRICE: Good evening. I would like to just first mention that I became involved in this issue at the radiological contamination at the Airport Site as the result of my son's activities playing in the creek when he was 10 which was quite a while ago at this point as Jim Werner said.

But at any rate, I also want to mention to my fellow citizens here tonight that I have served on the task force that was sponsored by the Department of Energy, and subsequent to that the Oversight Committee that is sponsored now by the Corps.

So because of my activities on those two community groups, I've been pretty well informed about what's been going on and processes that have been used to clean up to this point. And I also want to echo the remarks and I applaud the Corps for the cleanup that they have accomplished.

Tonight I do have a couple of comments, and I must say I haven't had a lot of time to totally in depth look through the document, but from what I can glean with what I have looked at,

my questions or comments tonight concern the creek.

First, in my review it appears that the radiological analysis that was done last was done in June of 1999, and that it was kind of subsequent to data that was done through the 80's and 90's as stated in the document.

My comment is that in view of all the construction that's happened along the creek side at the SLAPS area and again at HISS where they removed the piles, much to our delight, perhaps the sediment finding analysis would be different today than it was in June of 1999. Certainly different than what it had been in the early 90's.

The risks and assessments that have been done to calculate this idea of below the mean water gradient appear from what I can see to be based on numbers of those dates. So I question whether that's, you know, the most accurate, and maybe there is a shortcoming in that analysis. So I am asking for a re-evaluation of that or a response on that.

The second point is that this mean water gradient, the application of that to this cleanup where you're going to clean a certain level above

this and a certain different level below it, seems to me to be logical but not practical. And the reason I don't believe it's practical is because I can recall how my son dug rocks and golf balls out of the middle of the creek bed. And a 10 year old child who is always drawn to creeks will not know where that invisible line is. And so that's my concern about the logic of using that kind of a process to this cleanup.

So I've been satisfied with the SLAPS. I think the HISS has gone well. It's just the creek is what affects this community. And it affects everybody. And I don't think there's been enough addressed to give me the assurance that safety has been ensured. Thank you.

(applause)

FACILITATOR O'NEIL: Sally Price.

SOMEONE FROM AUDIENCE: That was her.

FACILITATOR O'NEIL: Pamela Todorovich.

MS. TODOROVICH: I'm Pamela Todorovich. I live in St. Louis County.

For about 60 years people in North County have been unknowingly exposed to the radiation in this area. As a child my family lived in Berkeley. We traveled Brown Road, now

called McDonnell Boulevard, often. We played in Coldwater Creek. We went to school at St. Bartholomew's on Latty Avenue.

There was a time when the public didn't understand the true dangers of radiation. A time when children were encouraged to put their feet on X-ray machines at the shoe store to see the bones in their feet. We now know there is no safe dose of radiation according to the studies.

This danger left behind from the Manhattan Project continues to threaten the health of generations who live and work here, and will forever, unless it is removed from where these people live. There's a saying; you did then what you knew then, when you knew better you did better.

It is well past time for the Corps of Engineers to finish their obligation to this community and do a better job and remove all the radioactive waste left from the project of the bomb before it contaminates more areas and exposes more unsuspecting citizens. Alternative 6 might be a good option. Thank you.

(applause)

FACILITATOR O'NEIL: Donovan Larson.

SOMEONE FROM AUDIENCE: He had to leave.

FACILITATOR O'NEIL: How about Leon Steinbach?

MR. STEINBACH: I'm Leon Steinbach. I'm a Hazelwood resident. I'm retired U.S. Army of the U.S. Army Aviation Troop Support Command.

And one of our responsibilities when I was a federal employee was to develop and produce protection -- uniforms that protected against radioactive and chemical warfare. The Army looked out for their troops in the field.

And I think the delay in action for the public welfare since the manufacture and storage of radioactive materials in this area, that we've waited too long and I think we should act now.

In 1965 daily for about 5 years on the way to work I traveled on Latty and Buddy, Nyflot. I sold real estate in this area. And I'm a little irritated and upset that I was one of the people that could have been exposed to this radioactive material.

I disagree with the study that the creek has a low priority as far as resolving and cleaning up radioactive material. I think the creek all the way from the site here at the

airport to where it goes into the river should be retested, not only the sediment below the water but the banks. Because when the banks flood or over a period of years, you could have had cumulative radioactive dried dirt, and even in cases where basements flooded that could be a possibility of radioactive.k.

I'm currently -- I sell real estate, do some real state appraising. And one of the factors we look for is environmental hazards. And I think this is a key concern of a person that wants to sell his house. I know that from the questions asked it's probably more serious than even having a house in a floodplain.

So I would recommend a concentrated effort on cleaning up the creek, Coldwater Creek area, and the banks and possibly the houses that have been flooded, test it.

I don't agree with some of the future findings as voiced by the previous speakers that are in your study.

I do appreciate speaking here tonight, but I think the Army's motto is take action and I think you should take more immediate action and just implement the plan. And I agree with your

alternative number 5. Thank you.

(applause)

FACILITATOR O'NEIL: Daniel McKeel.

MR. MCKEEL: Hello, everybody. I want to thank the organizers of the meeting for allowing the public to comment on this important feasibility study and the proposed plan.

My name is Dan McKeel. I'm a human pathologist who works on the faculty of Washington U School of Medicine in the Department of Pathology and Immunology. And that's located where I live in the City of St. Louis. In my work I direct a general pathology laboratory for the federal Alzheimer's center.

And in recent years I've been engaged actively in the citizen oversight of what's going on at the Weldon Springs site. I think I have by now a pretty good idea of the Mallinckrodt Chemical Works uranium division operations. And basically flowing from that, I'm very active these days in supporting the efforts of the former workers at MCW and their survivors to gain their long overdue compensation under the federal EEOICPA 2000 law and endorse their efforts to become a special exposure cohort.

My comments tonight I guess are a little different from what anybody else has brought up. But first, before I have that, I have a very simple comment and two brief questions related to it. But I want to say that I favor the idea of alternative 6, that is cleaning up as much as possible. And under the roads and bridges, when that dirt becomes accessible, I think we ought to try to clean it up.

I also strongly endorse what Jim Werner said, that the groundwater just has to be monitored unless it can be absolutely proven that there's no need to do that, and I think that's basically impossible.

So I have a comment and two related questions. And they're very specific things.

On page 18 of the proposed plan is the following statement that has what I believe to be major factual errors. Since the major point of the proposed remedy number 5 and 6, and all of them really, is to protect the public health and environment, I feel that these are very serious scientific and medical errors in the document which must be addressed and the statements must be modified. The particular passage at issue reads

as follows and I'm quoting:

> At the North County site 11 non-radionuclides are identified as contaminants of concerns or COC's for soils. And they are antimony, arsenic, barium, cadmium, chromium, molybdenum, nickel, selenium, thallium, uranium and vanadium.

It goes on to say, and this again is a quote:

> These non-carcinogens have different effects on systems or organs in the body.

End of the quote.

My first related comment is that uranium 238 is definitely a radionuclide with a half life, as has been pointed out, of 4.47 billion years, in addition to its toxicity as a metal. So calling uranium a non-radionuclide must therefore be corrected in the document.

My second comment is that the listing of 11 contaminants of concern for soil as non-carcinogens is substantially incorrect. In fact, perusal of carcinogen listings for the named substances published by EPA, the ATSDR, National Toxicology Registry, and the International Agency

for Research in Cancer reveals rather that 6 of those substances are established human carcinogens. In particular, arsenic, cadmium, nickel, hexavalent chromium, uranium and selenium sulfide. I don't really think there's any argument about that. The plan does not state which forms of chromium and selenium are being referred to on page 18, and it is true that some of those compounds are not recognized human carcinogens.

Listed as not classified in the same sources, however, because of insufficient human data with respect to carcinogenesis are antimony, barium, molybdenum and thallium. However, for example, in the ATSDR tox fact on antimony it notes that this substance has produced lung cancer in rats.

So I need to stress that not classified is different from being classified as not carcinogenic since it means that insufficient data exists to decide conclusively one way or the other of the carcinogenicity of the substance.

The single compound that all agencies characterize as not being a human carcinogen is vanadium. Even so, the EPA and the IARC note that

this compound can cause irritation of the eyes, skin, nose and throat. It can also cause respiratory distress and labored breathing as well as allergic skin reactions. So like most of these heavy metals, there are toxicities other than cancer and they also need to be considered.

So I have the two related questions are, I'm interested what sources were used to classify uranium as not being a radionuclide, and what sources were used to say that the 6 known carcinogens were to be labeled as non-carcinogens. And I understand that questions aren't to be answered tonight, but I hope to get an answer to that eventually.

The related question number 2 is on the following paragraph after the excerpt that I read on page 18 of the plan is this statement, and I quote again:

> Toxicologists evaluated the primary effects of 11 metals in the soils of North County.

End quote.

So my question related to that is who were the toxicologists, and I would like to have their name, their degrees, their agency or

institutional affiliations, and what were their job titles.

Second, it mentions primary effects. And I would like to know what is meant in the document by primary effects that apparently were used to classify these 11 metals as non-carcinogens. And by primary, I think that's important to define what that means since all of the known biologic effects of the 11 compounds may be operating on citizens exposed to them to harm human health and the environment by imposing a cumulative risk from many diseases that are too numerous to go into detail here tonight.

I do plan to submit more extensive written comments to amplify these comments and I thank you very much for allowing me to speak.

(applause)

FACILITATOR O'NEIL: Kathleen Logan-Smith.

MS. LOGAN-SMITH: Hi, I'm Kathleen Logan-Smith with Health and Environmental Justice St. Louis.

And I have a lot of questions and I'll submit a lot of these in writing. But it seems to me that, first of all, we'd like to thank the

Corps for taking action. After 61 years of living with the stuff it's nice to have something happening.

But I would have to say that if I were a teacher I'd have to give you a C because you've turned in a piece of incomplete work. It seems like we have some big holes in the plan and it looks like Coldwater Creek is one of those big holes, that that's not adequately addressed in the plan and people have already raised those concerns, I won't go into those details. And it looks like Westlake Landfill is a really big hole considering the amount of waste at that site.

The idea -- I'd like to also address the idea of permanent structures. Those of us who have ever driven Interstate 70 know that there's really no such thing as a permanent road, especially here. And people who thought that, you know, certain areas were going to be permanent roads going into wheat fields are now driving into subdivisions in North County.

So I think that remediating all the sites and all the soils that are contaminated is going to be the best plan in the long run. And how ever we have to do that, if we have to wait

for roads to be moved, but they will be moved, I assure you, because that's just the nature of things. The only thing constant we know of is change.

So one of my questions is what happens in 20 years if a road or bridge moves, who pays for the cleanup then. And that's something that people have been talking about with long-term stewardship issues, you know, what's going to happen if they hit a hot spot when they're moving a road in the county or somebody is moving a driveway or something that you considered permanent today, we've discovered is not nearly as permanent as the radioactivity underneath it.

I think that a more thorough survey of the creek definitely needs to happen. We had a lot of discussion already about high water events.

The thing that's not addressed here, and it's not necessarily a Corps of Engineers area of expertise, is the health risks. You know, communities that are exposed to elevated levels of radionuclides experience leukemia. Nationally brain cancers in children are going up. We have increases in immune diseases and cancer. And all these health effects are happening to us

nationally and locally. And what kinds of health surveys, health studies, analysis of data has been done on residents and people who have worked around this site.

I know at least one McDonnell Douglas engineer who developed leukemia. Did that happen because he worked at a building that was, you know, ventilated near the SLAPS site? I don't know. But it's questions that need to be asked somewhere.

The issue that Jim brought up I thought was important for us to consider is the long-term environmental stewardship office funded long term? Because if it's not it won't happen. And those of us who have ever dealt with anything relating to government know that if it's not funded, it's not going to happen.

The thing that's often overlooked when you're assessing risk is cumulative risk. So your risk of exposure to this particle of uranium or this amount of arsenic might be acceptable, but if you're exposed to arsenic and uranium and several other things all at one time, who is doing the math on those numbers? And the answer generally is nobody.

I have a question about the term unlimited use and unrestricted exposure. Can sites that get that designation and have been deemed cleaned up, can they -- can sites get that designation without being totally clean, can you get that designation if you've got institutional controls on a site? Because I think that shouldn't happen. And I want some clarity there. Because if a site is going to be called unrestricted use, it needs to be completely safe.

I really, really am interested in knowing why the landfill is not included in this plan. I think it's a tragedy.

And I would like to suggest that as a matter of national policy we all consider the efficiency and the speed at which we were able to conduct a war. And compare that to the efficiency and the speed at which we have been conducting this cleanup and dealing with the wastes and the fallout of our warring practices for the last 60 years. We need to apply the same strategies, the same tactical, you know, successful ability to solve problems. If we can do it at war, we can do it at this war on pollution. So I think we need to challenge our national energies and our talents

into solving the problems from the first 60 years of the atomic age. And I would suggest that the money for the cleanup come from money that's channeled into building bombs right now.

(applause)

FACILITATOR O'NEIL: Rick LaMonica.

MR. LAMONICA: I'm Rick LaMonica. I live near 703 Crompton Court in Crestwood. It's close to Webster University. I'm very unfamiliar with all these North County sites. I'm familiar with where the Mallinckrodt stuff is, but I don't really know the locations very well.

I do know that much in North County is in a floodplain. Experience from the last 10 years shows that they have had massive flooding, particularly in the spring. I'm not really happy that the standard of cleanup for Coldwater Creek and their term of mean water gradient. I would encourage them to clean up the area along Coldwater Creek and include Westlake Landfill which I understand is also an area that can flood. And remember that water can move this stuff around and shift around the sediments faster than the Corps of Engineers has the ability to clean it up.

And so the cleanup should be better.

This is no longer rural. It's very urbanized. It's going to be harder and harder each year that we let it sit around there and move around further.

And I would encourage them to do better than they did with the work that they did at Coldwater Creek several years ago. I can remember reading some articles in the paper and was kind of disgusted with the way they were using the cleanup. What we want to do is clean up the area, not make further contamination by just shifting the stuff around. We've already done that for 60 years. I understand you can still follow routes that trucks were taking with a geiger counter a long time ago.

So we know we can do better and we need to have better standards. For the minor difference between alternates 5 and 6, considering comments from people that live up here, I would also recommend that they do it to level 6, clean up more of the sites, make sure that they're cleaning up the areas along the banks of these creeks. If this is like South County there's little creeks running all over the place. And the use of storm water runoff and heavy rains. So

we need a little bit better cleanup and make sure the next time the stuff floods, it just doesn't move the stuff into the river where the creeks run into the Missouri River upstream from some of the water in-takes. Thank you very much.

(applause)

FACILITATOR O'NEIL: John Bunn. Mr. Bunn not here? That's the end of our list. Is there anyone else that would care to speak that I don't have listed here? Yes.

MR. HENSEY: My name is Walter Hensey. I used to live one block away from Latty when the kids were growing up. I live in Des Peres at present.

I just wonder why the government doesn't have more control over that land and why it's in private hands. It seems to me there should be some way to keep that land tied to the contaminated waste category so that in future generations it won't be forgotten about. There must be some way to put it on record that whole -- not just that particular site that we're identifying for cleanup, but going beyond that area where contamination has probably spread, and especially in Coldwater Creek and down stream from

Coldwater Creek.

I think definitely that Coldwater Creek should be monitored regularly until there's a finding of no longer any contamination. That could go on for centuries possibly. But I think it could be continued until there's no more contamination in the creek. Also I think there should be better designation of that area, posting of signs of the contaminated area.

And I believe that even though you consider 5 to be the preferred option, I would think that you ought to at least cover the area under the roads and put it in your plan some way that it's covered so that it won't be forgotten.

And I'm just wondering if you don't clean up the contaminated area under the roads and structures, how are you going to keep that contamination from migrating into the area that you've considered cleaned up. You'll have to go back and clean up the whole area if it does. So I would say why don't you just do the whole thing.

So I appreciate your giving me the opportunity to speak. Thank you.

(applause)

FACILITATOR O'NEIL: Is there anyone

else that would like to speak? If not, we'll go back to Sharon for a wrap-up.

MS. COTNER: I will keep my wrap-up comments very short. It's getting near 9:00. I'd like to thank everyone. I know we all have very busy lives and it's very pleasing to see this many people who are that interested in taking time out of their lives and their busy schedules to come here and make statements. We do value your statements. We're very much interested in what you have to say.

You still have, if you wish to make written comments, until the 14th of July. We will be taking comments until that day. If you're interested also in seeing the responses to your comments and how they're incorporated, be sure to touch base back with us or come to an Oversight Committee meeting. We do hold those the second Friday of every month at the Latty trailers at 11:30. You're welcome to attend. They are a public meeting. Please touch base with us and find out what's happening.

If nothing else, touch base back with us in the October, November, December time frame. The Record of Decision and responsiveness summary

we hope will be issued in early 2004, January and February 2004, and at that point in time we'll be able to see how your comments were incorporated and specific responses to all your comments.

And having said that, thank you for coming this evening.

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REPORTER'S NOTARIAL CERTIFICATE

I, Sandra L. Ragsdale, a Registered Professional Reporter and Notary Public within and for the State of Missouri, do hereby certify that I was personally present at the afore-mentioned public meeting and that the proceedings were stenotyped by me at the time and place and for the purpose in the caption stated; that my shorthand notes were transcribed by me personally or under my direction; that the foregoing transcript consisting of 81 pages is a full, true and correct transcript of the said proceedings so had; I further certify that I am neither of counsel nor of kin to any of the parties involved in this matter and am in no way financially interested in the outcome of said matter. Witness my signature 6-27-2003.

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Notary Public

Notary expires 7-21-2004