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U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
PROPOSED PLAN FOR THE COLONIE FUSRAP SITE
VICINITY PROPERTIES OPERABLE UNIT IN
COLONIE, NEW YORK

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THE STENOGRAPHIC MINUTES of the above entitled matter by NANCY L. STRANG, a Shorthand Reporter, on February 1, 2017 at 7:07 p.m. at the West Albany Fire Company No. 2, 36 Osborne Road, Colonie, New York.

PRESENT:

James Moore, Project Manager, ACOE
David Watters, Project Physicist, ACOE
Cliff Opdyke, Project Risk Assessor, ACOE
Maureen Schuck, NYS Department of Health
Redacted - Privacy Act
Redacted - Privacy Act
Redacted - Privacy Act
Redacted - Privacy Act
Anne Rabe
Darina Castillo
Redacted - Privacy Act
John Abunaw

MR. MOORE: I think we can start. If anyone else comes, we can just fill them in as things go.

Good evening. My name is Jim Moore. I am with the US Army Corps of Engineers, New York. I am the Project Manager for the Colonie FUSRAP site. We are here tonight for the vicinity property operable unit proposed plan.

The proposed plan document was issued to the public and mailed to many people in the community. There is also a copy that is in the library.

What we would like to do is have the public meeting in the middle have comments. That way, we have an opportunity to review the technical information that we want to share independent of the report and give you an opportunity to both comment here and also in writing.

With that, what I would like to is the presentation if you don't mind and not take any questions and then at the end of the presentation we can take questions and our Stenographer here, Nancy, will be documenting anything that you have to say as a matter of the public record.

With that, I would ask you to just turn your cell phones on mutes.

If you have any other comments -- if you want me to stop anytime to go to the bathroom, we'll stop and wait until you come back and go on from there.

Here's tonight's agenda. We are going to talk briefly about the FUSRAP program and that's Formally Utilized Sites Remedial Action Program. We'll talk a little bit about the Colonie site origin and use. We will also go over a little bit of the site history and talk about the vicinity property soil actions that were done not only by the Department of Energy, but by the Corps of Engineers. We will also talk about the vicinity property dust investigations that were performed by the Corps of Engineers in conjunction with the Department of Health and the Department of Environmental Conservation.

We will also talk about the risk assessments that were performed and conclusions and recommendations. After that, you will have an opportunity to provide public comments. Please remember, this is your meeting so this is your opportunity to comment.

I also want to introduce you to just a few members of the core team that are here to support me. Over here we have Bill Kollar. He is our community relations support person. We have Dave Watters. He is our health physicist for the project. And Dr. Opdike is our risk assessor for the project. All of these members of the team were intricately involved and work together on the proposed plan including all the documents that we will be discussing tonight.

What is FUSRAP? FUSRAP is the Formally Utilized Sites Remedial Action Program. This program was set up by Congress to address sites that handled or managed depleted uranium or radioactive material related to development of the atomic bomb.

It is important to note that Colonie is not a true FUSRAP site. Colonie is what we call a congressional add. So, what happened back in 1984 was Senator D'Amato, wrote into appropriation language that the government shall, through the FUSRAP program, perform remediation of this site. That is how it came to the Department of Energy.

The Corps of Engineers took over the FUSRAP program in 1997. Here is the Colonie site (indicating). This is Central Avenue (Indicating). These are the main thoroughfares. Most of the site is in the Town of Colonie with a small portion of it being in Albany.

We are going to talk a little bit about the operable units for the site. There are three operable units for Colonie. The short answer is because the lawyers told me I had to do it this way. It is a way to separate things out to prioritize sites. We have our main site and groundwater operable unit. So, that is a separate unit. Currently we have a remedy in place, which is natural attenuation. We will talk a little bit about that later.

That information is also in your packets.

We also have the Main Site Soils Record of Decision. That was signed in 2015. All that did was document all the work that was performed in 2001 and 2008 and document that all the work was done in compliance with that document.

Lastly, the purpose of our discussions tonight is the Vicinity Properties Operable Unit. When this site came over and DOE in the variety of investigations determined that there were 56 properties that have been impacted by FUSRAP contamination. The Department of Energy, as part of their work cleaned up 53 of those sites. Three of those sites, the Corps of Engineers addressed. That, again, is the subject of our discussions tonight.

Here's what the site looked like during remediation (Indicating). When we started the remediation, we started from this side of the site and went this way (Indicating). So, this is probably about vintage 2006. This green area means that was the part of the site that was remediated and that goes in place with vegetation cover. We were currently digging over in this area and this was our concrete line pad that we used to stage soil and then ship the material out by rail. This is a map of the vicinity properties.

I apologize for it being so small, but it is and a lot

of the documents are available for public comment.

Anything that is in blue indicate something that was done by the Department of Energy or the Corps of Engineers.

Let's talk a little bit about the history of the site.

Back in 1923 the site started out as a wood fabrication facility but was later converted into a smelter for railroad parts. They used to make a product called babbit metal which was important for railroad components.

Later in 1937, NL purchased the property and continued smelting operations, mainly lead and metals. It is important to note that as part of their smelting operation and disposal practices from the 30s well through the 60s and 70s they never took any material off-site. Any material that they didn't use and wanted to get rid of, they would just throw in these man-made landfills on the site and fill in any space.

From 1958 to 1984 NL Industries started working with uranium and thorium under a Department of Atomic Energy license. Primarily what they did was they took depleted uranium and they fabricated it to make armor piercing shells for tanks which was really important for the army at the time because this basically balanced out the

numerical superiority between Russian tanks having five tanks for every tank that the Americans had and with the armor piercing shells. It was very important at the time.

From 1960 to 1972 NL handled small amounts of enriched uranium for experimental reactors.

Most importantly, in 1984 the New York State Department of Environmental Conservation decided that they had enough of the environmental issues on the site and closed it. That's when Senator D'Amato wrote into appropriation language and put Colonie into the FUSRAP program.

From 1984 to 1997 the Department of Energy was working on the site.

In 1997 there was the transfer of the FUSRAP program to the Corps of Engineers for execution.

FROM THE FLOOR: Excuse me, what does FUSRAP stand for?

MR. MOORE: Formerly Used Sites Remedial Action Program. Unfortunately, you missed part of the earlier presentation. Colonie is not a true FUSRAP site because they didn't handle material related to the development of the atomic bomb, but they were handed into the program because they had radioactive material there.

So, this is summary of the DOE actions they took at the Colonie site. This gives you a site history. The DOE went and did a variety of investigations of vicinity properties. They do aerial flyovers based on the properties that might be impacted. They will do field scans and surveys. From those field scans and surveys they determined that there were 56 sites that were identified as eligible. They'll do things like - I'm going to take off six inches of topsoil on your front lawn or a part of your roof - anything that was impacted. They would take care of or remove and the material was disposed of at an approved disposal facility.

They also did removal of the Main Site buildings and decontamination of the materials that staged it all the way up until 1997.

When the Corps got involved in 1997 we took control of the site. We went back and looked at the documents from the perspective of CERCLA and this is the law that guides how we do all of our work.

We revisited the plan that DOE had and decided to amend it. That plan was purely for a removal action of all the contaminated material and disposal of the material at an approved disposal facility.

There was also a cap placed over the entire facility

and in 2001 was when we started excavation and removal actions at the site. Now from a vicinity property perspective, around 2007 to 2008 we finished work on the Main Site and then we started addressing the three VPs which is the Town of Colonie property and the CSX property, which is the railroad on the other side of the Colonie site.

We also did some investigations and studies at the NIMO substation. We determined through our investigations and our studies that it didn't have need to have any remediation done. The site was in compliance.

From 2010 to 2012 we then went back and looked at all the historical documents and all the work that the Department of Energy had done to make sure that the work that they had done was in compliance. In doing so and evaluating all of those 53 sites, we had to go back and look at two sites; one at 1118 Central Avenue which used to be Appletini's and I forgot what it is now. It changes all the time. That one - we did some investigations and studies, but we also did some work on 50 Yardboro.

What I can tell you is that we had to do a removal action at 50 Yardboro - some removal of soil. But based on our investigations we didn't have to do anything at

1118 Central Avenue. We've gone through and we've done the soil removal actions between the Corps of Engineers and the Department of Energy and determined that all of VPs, vicinity properties, are completed. All contaminated material have been shipped off-site. All unacceptable risk related soil contamination had been addressed. This is good. We're in 2010 and we think we are just about done and thinking that we might even transfer it back to the Department of Energy.

Late in 2009 a gentleman by the name of Redacted - Privacy Act collected some dust samples at four properties. Based on those results, the CCNL presented them to the Corps of Engineers and they said there is still potential problems and we want this investigated. So, as a result of that, we had to go out and figure out how to do something that we had never done before in the Corps of Engineers which is investigate dust contamination. So, getting that copy of the independent academic study, we went in and evaluated dust at the four locations and wanted to verify what the results were. Then, we looked at the locations that were sampled. Basically, they were looking at inaccessible areas or locations that people don't normally live in; basements, attics, garages and those types of things. Dust samples were not collected in living area spaces such as living rooms, kitchens and

bedrooms. The results did indicate that there was depleted uranium in their material. So, we went out and performed and developed a site inspection plan and coordination with the Department of Environmental Conservation and the Department of Health.

We verified the results of the study that was collected by Redacted - Privacy Act and used EPA methods for sampling of lead that is very comparable to sampling for uranium and then use that as a basis to develop a risk based dose level from a SI perspective.

When you collect the samples, you have to know what you're going to measure against and agreed to that early on. Otherwise, you're just collecting data and there's not much to do with it.

Again, we coordinated all these activities with both the Department of Health and the Department of Environmental Conservation. So, this is what our site inspection levels -- that we came up with it was agreed with the New York Department of Health. We have the most restrictive levels of six in the living areas and 138 in non-living areas. These were our target quotients. These were our cancer risk numbers and this is how they based the dose.

If you have any specific questions related to those areas, you can ask those later.

These are our results of our site inspection and verification of the four locations. For privacy purposes, we are only listing them as residences one through four. Samples were collected in attics, garages, feelings and basements.

The first location pretty much came back fine, but the other three indicated that there was material detected and as a result of this, we decided that we had to do a more intensive investigation of the work at the site.

MS. RABE: These are the houses that were done in 2011?

MR. MOORE: Yes, correct. Again, we concluded that more detailed study needed to be done and an RI was warranted. Limited sampling and high use areas and properties closest to the source were appropriate. So, we had to look at samples and results of where we are collecting the results. Are we collecting them in a place like a garage where you don't live in, or are we collecting them in a workspace or a living space like a kitchen or bedroom? So, we wanted to go back and look at those, but we also wanted to look at the differences between commercial properties and residential properties.

Our primary focus was looking at residential

properties. We collected samples following EPA protocols for lead. That is the scope that we did. We did residences. We sampled living spaces, kitchens, bedrooms and non-living spaces such as attics and crawl spaces for individual properties. We did commercial properties - high use areas such as office areas, retail space but not bathrooms and work areas, but also limited use spaces where they would store equipment or supplies just to get an overall picture about - was there differences between the two? We also analyzed samples for uranium and compared it against our conservative risk dose-based action levels. In addition to that, we also went out and collected a background sample outside of the area to see if there was depleted uranium within the vicinity that was unrelated to NL operations. So, that led us to the basis of how does dust get distributed in the community? We worked with the Department of Health to get a conceptual model of understanding of what is going on. This is really important because this guided the way that we did our study.

First of all, we had a specific source. We knew that the source happened from 1958 to 1984. That's when they first started handling this material and that's when they stopped. What they would do when they fabricated these depleted uranium shells is they would get chips of

the material left over and they would put these chips in what they call chip burner. The chip burner would incinerate the material and blow it out of the stack and the wind would carry it down and it would drop down from the site and the surrounding communities.

The initial deposition of dust was caused by NL stack emissions following predominant wind directions. We know what predominant wind directions are so we can figure out where it was.

We also used - and this is really important - the initial soil contamination from the stacks created locations where if we know that we found it on someone's grass or lawn in the past, it is likely that we are going to find it there, too. So, these were all means by which we used to guide our investigation to determine an answer the public's question which was: Is there any risk related to this dust material?

Airborne uranium entered structures and it depended upon how it was communicated. So, if it got in a residential structure, it would be in the eaves. If it was a commercial structure, it was settled on beams. This is just dust that we are viewing. So, we used all these factors to figure out how we were going to best study and answer questions.

Furthermore, there is a lot of human activity that

would take place. People always vacuum the house. I vacuum my house at least once a week in the living spaces. That's what I do. I don't know what other people do, but I use that in my own personal life as a guide. So, if you are in a living space, we have to assume that your vacuuming once, twice, three or four times a month. Are you vacuuming and high use areas and living areas? How often do you vacuum your attic? How often do you vacuum your garage? I added once a year to that. So, these are all different factors that we used to try to understand where we would find dust and how we would be able to analyze and look at that data. We selected properties for sampling. We used a random grid approach and we broke everything down in concentric circles away from the site. They were three groups that were established.

Potential contamination was assumed be proportional to soil contamination levels which we have a lot of data on. That helped us a lot. Then, we collected 13 representative properties that were sampled; eight residential, three commercial and one mixed-use and one background sample to answer our question. This will give you a flavor for how we collected the sampling data.

It is a vacuum and it collects the information in this

bag. It is then put in a container and shipped off to a lab for analysis. It has a certain amount of suction on it and a certain amount of PSI. We would vacuum for a certain amount of time. This all follows EPA protocols.

So, here were the results of our action level which we set in our site investigation. Seventy percent of the residential properties had material found in them. All of the samples from the commercial properties were less than our action levels. The results were transmitted to the land owners in August 2016.

I want to take a moment to just explain one thing to the public. We collected the samples in 2014. When we got the results back, we coordinated that information. Our risk assessor went ahead and compared his risk assessments on what was going on for that property and we all sat down and said okay, we have an idea of what's going on. We had to finish our report before we were willing to release the results because frankly if we didn't have an answer to a person's question who we had access to. We wanted to make sure we had that answer when we gave them the results. We actually explained that in the letter that we sent to everybody.

Also, anybody who allowed us access to their property for sampling purposes, got a copy of this report. Everybody knows it's going on. So, there was a delay and

I acknowledge that delay between when the samples were collected and limited results are reported. It was important for many reasons - for both privacy reasons non-technical reasons because this is a new area of study.

We're almost done. Can you just wait? Thank you, Tom. I appreciate it.

Here were the RI results. Here is our background location. Anything that is in purple indicates that it is above our screening level. So, limited use areas - you will see some of these spots where we have samples not collected. What that means is we were able to collect the sample in the limited use area like a basement or attic. When we went back and asked to go into the living space, we were not given access. So, we don't have that information.

As you can see, in some cases we found nothing. In some cases, we found stuff. The commercial properties were pretty good.

So, based on that information, we did a human health risk assessment, for both carcinogenic and non-carcinogenic risks. We looked at all the vicinity properties and every property had its own risk assessment. Due to the high number of elevated exceedences, all VPs were reviewed and we have receptors

for both child, adult workers. All the risks for cancer and noncancer numbers were within the acceptable range of CERCLA. In addition to that, because of the limited use areas - garages, basements and detached structures - we also did an adult garage user because we, as a team, were asking questions like how much time do you spend in your garage? All right, do I live in my garage? No, I don't spend 24 hours a day in my garage. Okay, but how much is a reasonable amount of time that we spend in that garage? Those were part of the very difficult technical discussions that we had as both a team and with the Department of Health.

We stepped through this with the Department of Health each step of the way. We didn't have an agreement on everything or they might have a strong opinion on something and we wanted to know that so in the end we could all stand behind the data that was collected.

Just as a matter of record, there is a complete copy of the risk assessment available in the remedial investigation report that is available at the library and I do have a copy here.

So, the results of the study indicated that yes, we found trace levels of depleted uranium. The facility had been closed to uranium from 1958 through 1984. We found it in some of the soil and we remediated that soil and

we did find it in some of the inaccessible areas. Property specific risk assessments all indicated that they were no risk to the public related to this material.

I am just about done.

In our discussions of our proposed plan we talk about our soil actions - the work that was done both by the Department of Energy and the Corps of Engineers. We also worked with the New York State DEC and improved the cleanup on all the vicinity properties and we worked with the Department of Health to conduct studies and investigations to answer the public's question.

The remedy for what we are saying right now is we are recommending as part of the proposed plan - and everyone will have an opportunity to comment - is no further action.

This is where the document is available. It is at the Sanford Library and we have copies of it here. We also have copies of the presentation.

With that, my presentation is done. I look forward to your comments. From a public comment perspective, the document was issued and the public comment period ends in a little under two weeks. This is an opportunity for the public to ask any questions.

Anne, I will be right there with you.

Also, to get any comments that you might have to make that part of the permanent administrative record.

Thank you for your patience. Anne?

MS. RABE: Thanks. My name is Anne Rabe. I am a member of Community Concerned about NL Industries. It used to be called Citizens Concerned about NL Industries. It has been in existence since 1982, monitoring the site and advocating for a full clean-up and health studies.

First, I want to thank the Army Corps for doing the remediation which they were not required to do but they did it and for looking at 50 Yardboro and 1118 Central Avenue where the owners had refused in the past to have testing done. They went back and did that on Yardboro. That's great. Also, for doing the dust sampling.

The history on the dust sampling is that British scientists came here and started the site and one of the things they did is they looked out a quarter-mile radius at the deposition of the toxic emissions that came out of the stacks. Many times that incinerator did not have filters. So, in a quarter-mile radius only 53 properties were cleaned out that were found to be above the cleanup standard of 35 millicuries per gram. The history of the clean-up standard, as it relates to dust clean-up, is not being done in this proposal which we strongly

oppose. That 35 millicuries per gram was done with the Department of Environmental Conservation, the Department of Health, and the Attorney General's Office working with the Department of Energy. They basically took the 169 millicuries per gram standard that was established back in the 1980s by three state agencies; the Attorney General and the Department of Health and the Department of Environmental Conservation working with the Department of Energy. It is important because it set a precedent that this site has always followed where there are safer state standards and it has always followed the standards. So, they established 35. What they did is they divided by five the State Department of Labor Standard because it was the only standard they had at the time. It was 169 millicuries per gram for exposure of workers to contaminated soil. They divided that by five because people were exposed 24/7 as opposed to workers who were exposed eight hours a day. They came up with 35. That was the standard used for soil cleanup that the Army Corps eventually took over. It was not based on complicated risk assessments and best guess estimates. It was based on the Department of Labor standard and also taking into account that people wanted it to be as low as reasonably achievable. Also the background level in that area for depleted uranium in

soil - we wanted as low as possible. So, our group and many other environmental groups and local politicians pushed for a very low protective cleanup standard for the soil.

Fast-forward a couple years ago when these British scientists came to Albany and they studied a number of things including the dust -- we went with them to these homes where we deliberately looked at areas where people had not cleaned. We wanted to look at those areas to see if when they go in to get their Christmas ornaments once a year in the attic - are they being exposed to depleted uranium in the dust? That was our concern. Are there pathways of exposure that still exist that could harm people, especially kids, that are still in these homes that were cleaned up? The scientists found it. Yes, that was the case. They were in the attics and garages and it was quite obvious because you could see this thick black dust.

So, we then went to the Department of Health and DEC and asked them to have the Army Corps come back to town and investigate the dust. We specifically asked the agencies and the Army Corps to let us know if they were not going to use the 35 millicuries per gram as a cleanup level. It is dust versus a different medium of soil. We thought well, they're going to use it for soil

because it kind of makes sense. It was already established at the site and is based on state policies which I will get to a just a second.

So, we didn't hear anything. We were told the last two years at another Army Corps meeting that you guys were having difficulty getting homeowners to agree to have their dust sampled. So, Tom and I and Tony from Yardboro Avenue put out a leaflet to everyone in the area on Yardboro and Central Avenue and encouraged them to open up their homes to have the them sampled. Why? Because we wanted people to have safe attics and basements. We wanted to have them tested and provide peace of mind to people and if they were contaminated above 35 millicuries per gram, we wanted to have them cleaned up. After we did that, we didn't hear anything. We provided the information along with the homeowners that were interested and we never heard anything.

Last summer, apparently, when you guys had your draft investigation report when the DEC and DOH were looking at it, none of us heard anything. We didn't hear anything about the dust sample results. We didn't hear anything about any public input on what the clean-up level should be - nada, nothing.

Now, here we are tonight and you're telling us that there are 17 properties that you tested for dust and six

of them are above the clean-up standard that has been used at this site for over 25 years, 35 millicuries per gram.

I want to step aside and talk about our state policy because what you did - the Army Corps, DEC and DOH much to their discredit and disservice went along with an EPA policy, which is in violation with our New York State policy. Our New York State policy which is enshrined in statute passed in 2003 for cleaning up contaminated sites is one in 1 million cancer risk. State Superfund Brownfield clean-up program law - one in 1 million cancer risk. We spent seven years fighting for that law - one in 1 million cancer risk because that is protective - the most protective we can be in terms of cancer risk assessment. That means one person is estimated to get cancer out of 1 million people at the levels you leave behind at a site.

What you guys did is you largely used EPA's range of one in 1 million to one in 10,000. It looks like you largely used one in 10,000 which means more people will get cancer at the levels of dust you are leaving in people's attics and basements - more people get cancer. You did it without any public input. You are basically in violation of New York State's policy on Superfund and Brownfield as well as other environmental hazards that

go with one in 1 million cancer risk.

We have measured the Department of Health on other cleanup standards like the respiratory commission standard which is one in 500 cancer risk in a suit that re-educated them about New York State's policy and how it is enshrined in statute -- they totally backed off and said they would go with one in 1 million cancer risk. That is the Director for the Center of Environmental Health Bureau last summer. If we had known that your agency was talking with the State Department of Health people and DEC people and cutting a deal to basically walk away from contaminated dust at six properties, we would have done something about it. We trusted that the agencies would involve the public because we asked you to do this, specifically to find out if they were areas that needed to be cleaned up.

So, what you have done now is whitewashed it with your risk assessment saying that basically six of these properties where you have as high as 630 millicuries per gram in someone's residential area - whether it's a garage or attic, I can't tell because the numbers -- it's more of a summary and not a detailed test result chart. We specifically are strongly opposed to the public participation and lack thereof in the slow process.

Second, to using federal guidelines which are not protective. One in 10 million is not a protective risk guideline and in violation of our state policy which is one in 1 million for any contaminated site in New York State.

We specifically asked that you come back to remediate the dust in the six properties out of the 17 that you tested. The main problem with the dust is that it can be inhaled very easily and it can lodge in your lungs and it can be an on-going radioactive hotspot in your lungs. That is the main concern. That is why we fought, but the Department of Health -- they finally agreed to ask the Army Corps to come back and test for dust. The inhalation is a main pathway of exposure.

So, what we are doing today is basically having our federal and state agencies say that they don't care if the families at six properties have their kids who are 20 times more sensitive to toxic chemicals breathe in contaminated with depleted uranium dust that could lodge in their lungs and give them a radioactive hotspot for the rest of their life. That is the bottom line. That is what we are really seeing in these charts. That is the bottom line. I think that the Department of Health and DEC - just like in Hoosick Falls, north of here where they didn't tell the people for over a year that they

were drinking contaminated water - they have done the same thing here by going along with EPA guidance from one in 10,000 cancer risk which is in violation of our New York State policy.

So, we would like to have the detailed sample results of all 17 properties and we would like to have the Army Corps step back, acknowledge the historical precedent of the site which has always been to follow state policy wherever it is safer and to redo their assessments based on one in 1 million cancer risk and cleanup six of the 17 properties based on the 35 millicuries per gram.

MR. MOORE: Good job. Let me see if I can try to address some of your concerns. I am probably going to ask Cliff to weigh in on some of the specifics. Let's deal with this in chunks. We have been working together for years.

The difference is we are doing a clean-up on a federal property where we own the land - the government. We can do things to address her concerns. Our one part of the problem - and that is the simple part -- but when we are dealing with private properties that we don't own and are doing testing on, we want to make sure that we had everything right before we released anything to the public because you recognize that as soon as this information gets out, it has an impact upon everybody in

the community; your property values, your lifestyles and yes, we want to be protective of kids.

As far as the issue of public comment - we follow very specific rules. The rules are that we are supposed to interface and to show this information to the public at the proposed plan phase of our work.

We have put the documents in the library and I have to go back and ask Bill -- I thought we sent a note to people that the RI was in the library, if I remember correctly -- we did that.

MR. KOLLAR: We sent the proposed plan to the mailing list and in the proposed plan it has a section on the availability of the RI in the library.

MR. MOORE: I thought that we had sent a letter out saying that the RI was out; I was wrong. As part of our processes this is when we solicit public comment.

I can tell you that in my experience working with both John and Maureen that we work very closely on all these issues; sampling protocols, locations, privacy issues, many of these things such as screening levels -- for things that there are no levels established. That is the thing you have to understand. That is what took us so long. We are doing things that they don't do. We're doing things when there are not processes in place. We

had to use EPA's protocols because we wanted to work with something that was established because to try to create something that would have created and made this process even longer.

MS. RABE: There are plenty of state Superfund sites where they have done lead sampling. You could have used those protocols as well. You should've let the community groups know they were sitting down with the Department of Energy and not using the 35 millicuries per gram site standard.

MR. MOORE: You're correct. We never went around and told you, Anne, or you, Tom, or you, Mike that we were using this protocol.

MS. RABE: We asked specifically, actually, three times when we first asked the Department of Health - we put the request in and we met with the Department of Health we asked Jude and a number of people - because we knew it was a different media -- please let us know if you are not going to use the site-specific 35 millicuries per gram and we never heard a word.

MR. MOORE: I cannot comment to your conversations with another entity. I can only comment about your conversations with me.

Maureen, would you like to address that? If not, I understand. Otherwise, I will continue on and ask Cliff

to talk a little bit about the risk assessment and how risk assessments were developed and what numbers would be used so that the public will have a better idea about how they were achieved.

MR. OPDYKE: Good evening, everybody. My name is Cliff Opdyke and I work for the Baltimore District Army Corps.

I know there was a lot to what was said and so I'll just take a shot at trying to explain sort of the basics of risk assessment and how we go about doing what we do and what risk assessment is used for. Risk assessment, for us, is a methodology by which we can use to inform us whether or not we need to take action or not.

MS. RABE: It's a best guess estimate, based on what you know today by the toxicology of depleted uranium, which there is not a lot because it was not a lot of studies done -- in terms of foundation for the risk assessment for these people who may not know -

MR. OPDYKE: I would say it uses what we know or can assume about exposures. It is what we know currently in the scientific literature, as you said - what toxicology is. Those two things are married up into what is called a risk characterization. That is the output - the algebraic output - very simple mathematics -- they give you values upon which we base

whether or not we are going to take an action or not.

The 35 value - Dave can speak to that a little bit better than I can -- I don't believe the 35 value for the soils was based on a risk assessment. It was a dose assessment.

MS. RABE: I just said that.

MR. OPDYKE: It actually was a dose assessment and it goes back to the NRC STMP clean-up criteria that was applied nationwide. That 35 may have conveniently been four times over or whatever it was - five times over the standard, but it was actually a promulgated standard from NRC that was used for years in the site decommissioning management program. It was 30 for enriched uranium. It was 35 for depleted uranium. It has been applied nationwide in the earlier clean-ups - most of them were in the times where the STM people program started sometime in the 80's.

MS. RABE: All I know is that the Attorney General's Office said it was a huge victory because he really had to fight the Department of Energy on it. That's all I know.

MR. OPDYKE: So, the 35 number is a little bit like comparing apples to oranges when you look at risk assessment results. They are similar, but not the same. So, the risk characterization will look at two things;

carcinogenic output and non-carcinogenic output.

Uranium is one of those constituents that has both effects. It has carcinogenic effects with radioactive properties and it has noncarcinogenic effects. Those two things were both evaluated based on the toxicology that we know that we get directly from US EPA. We don't make it up ourselves. This is not something that we do in-house at the US Army Corps of Engineers. All of the procedures that we use we take directly from guidance that is given to us from the US EPA and fed in through their processes.

MS. RABE: There is a range of one and 1 million -

MR. OPDYKE: Now, let me talk about that. That's the next thing I wanted to get to.

So, when we think of carcinogenic output - that range - the one in 1 million to one in 10,000 which is what the EPA calls the acceptable risk range for carcinogens, that's actually above baseline carcinogenic risk. Baseline carcinogenic risk - depending upon who you talk to, whether it be the American Cancer Association or Centers for Disease Control - if you vary anywhere from 25% to 33% - that's baseline risk. Throughout a lifetime somebody's possibility of getting cancer -- that is one in 421 in three.

MS. RABE: There is a lot of controversy over

that.

MR. OPDYKE: There is.

MS. RABE: Now a lot of organizations are saying that there is no safe level of exposure to carcinogens. Any increased exposure to carcinogens is an increase of getting cancer. There is also that. That's why we have a law -- as low as reasonably achievable in our radiation guidance policy, right?

MR. OPDYKE: Correct. There is no argument here. So, going from the baseline statistics through a lifetime possibility -- the restraints that we are talking about - one in 1 million to one in 10,000 - that is an additional chance above baseline. If we were to write that out, let's just take the 25% value. That is .25. Before adding one to the -6 - one in 1 million, that is .250001. That is your one additional chance in 1 million above that baseline. So, we are talking about something that is very, very small. Back in the 1970's the EPA came up with that one in 1 million number. Basically there were a few scientists discussing what would be considered no risk from a carcinogen.

MS. RABE: Did you use the one in 10,000 cancer risk in your assessment? That is my question.

MR. OPDYKE: The risk range is one in 1 million to

one in 10,000 above baseline risk, which is between 25% and 33% over a lifetime. So, the US EPA risk range for carcinogens is one in 1 million to one in 10,000.

For us, and the Army Corps on our jobs the action limits for carcinogens is at one in 10,000 because through statute the EPA gives us a risk range that is acceptable. Now, I can't speak to New York's acceptable or not acceptable ranges. We have somebody here that could talk about that.

From a federal level, that is the acceptable risk range. That is what we use to inform ourselves as to whether or not we need to take an action.

MS. RABE: So, you did use the one in 10,000 risk, which is in violation of the New York State's policy -

MR. OPDYKE: I can speak to the process. So, if you have questions about the process, I can answer those questions.

MS. RABE: There is a state law that specifically says one in 1 million cancer risk because our state agencies specifically saw - in terms of looking at the state and federal Superfund clean-ups over the last 25 years -- in 2002 they said were going to create a Brownfield program on top of refinancing the state's Superfund program. We don't like using one in 10,000 cancer risk. It is not safe. That's what our agencies

actually said in negotiations with the bill. That's why I am upset about the fact that your agency used one in 10,000 cancer risk because all of the environmental health organizations - the Nurses Association, the Doctors Associations and all of the groups that worked on toxic contamination issues and cleanup issues in New York State fought long and hard for that one in 1 million cancer risk.

MR. OPDYKE: I understand your concerns. I can't answer questions based on New York's laws and regs. I hope we have somebody here who can.

MR. MOORE: Maureen, did you want to comment on that?

MS. SCHUCK: No. Our toxicologists are not here, but we will definitely be addressing your comments.

MR. MOORE: Then, the best way for us to respond to this is now that this becomes a matter of the public record, we will prepare an official response and that will be included in the document and then we will research and coordinate that issue with the Department of Health and have a response.

MS. RABE: How did you come up with the noncancer hazard index less than one?

MR. OPDYKE: There is no risk range for non-carcinogens. The threshold is one. I believe that

is true for New York.

MS. RABE: I think that it said in the literature that the report came up with less than one.

MR. OPDYKE: It would have been one. Where does it say less than one?

MS. RABE: I will have to go back and look. Somewhere in 5-2 or 5-1 you talk about how you came up with the risk assessment.

MR. MOORE: We have the lifetime cancer risk -

MR. OPDYKE: It says our target is one.

MR. MOORE: Yes, sir?

Redacted - Privacy Act: I have three questions. Are you James?

MR. MOORE: I am James, but you can call me Jim.

Redacted - Privacy Act: Years ago we started going to these meetings with Lou -

MR. MOORE: Yes, where they used to have it down at the school. They were in the Colonie gym once. I was there when the ATSDR was there.

Redacted - Privacy Act: I'd like to add Lou has since passed away who owned this property. I spoke with someone who told us - it was my dad - that they placed a red line around the site. Before they did any testing or anything, they put a red line around the site until they could figure out what liabilities were,

etcetera. The person said that the red line was kinda sent to the bankers - which precluded us from selling commercial property until there was an answer to the dispute.

Is that true, number one and number two, has that red line been lifted? Do you know about the red line?

MR. MOORE: Do you know when your dad said the red line -

Redacted - Privacy Act : I think it was in the mid 90's.

MR. MOORE: I can tell you, sir, that I don't know about the red line. Back in the 90's would have been at a time when the Department of Energy would be at work here and not the Corps of Engineers. So, I'm sorry to say that I cannot answer your question.

Redacted - Privacy Act : So, to the best of your knowledge, this is non-existent.

MR. MOORE: Correct. What I would do - we can reference the document that we have in the library that shows all the work that has been done on all the vicinity properties. That should answer the question for any person or a banker related to that, or if they have an environmental person -- one thing that I have always suggested, sir, is to have them just contact me and I can put them in contact - usually with that guy over there and that guy right there (Indicating). We

can answer any questions about the issue.

Redacted - Privacy Act: My last question is: What is going to become of this project? What are the options available? Can I go over and buy it?

MR. MOORE: Let me put it to you this way: I'm going to be hypothetical for the group to give them an idea of what the options are. I envision that by September of this year, we will have completed all the necessary items and the record of decision will be place for this last operable unit. The review has been completed and all the records will be put together and given to the landowner. The landowner is the Department of Energy Office of Legacy Management.

Redacted - Privacy Act: They are the present landowners.

MR. MOORE: They are the landowner. We are the executing agent. So, we say okay, the property is ready for the transfer and provide the official notification.

The way that our organizations work is they can take up to two years to take possession of the site back and after which my understanding is that they would be working with GSA which is General Services Administration.

Redacted - Privacy Act: Of New York State.

MR. MOORE: No, this is a federal property. Then,

GSA will sell the property. It could happen a little bit sooner. It could take a little bit longer. A lot depends on how the DOE would like to take this -

MS. RABE: Don't they have to decide on first whether it's going to be commercial or residential or industrial? Can they sell it?

MR. MOORE: Yes, they can sell it.

MS. RABE: They have to decide on the land-use first, don't they? That's how DOE usually works its sites.

MR. MOORE: I will not comment on my sister agency's land practices. I would expect that it would be sold to someone for probably an industrial use, whether that be a parking lot, whether that be a solar power field for power generation, whether that be a highway maintenance yard -- but I doubt that it will be for residential. I'm going to go with this gentleman next. Could you just say your name please?

Redacted - Privacy Act: Redacted - Privacy Act. I have information about what you're talking about. Usually in records of decision - there is some indication future use restrictions are. I have often seen either deed restrictions on environmental easements that will limit the property as to what could be done there.

MR. MOORE: Yes, there will be an environmental

easement on this property. There are a couple of small spots around the site where you have - like it's lead and copper -

MR. WATTERS: Arsenic and lead.

MR. MOORE: Arsenic and lead - which is just above the residential standard, so we were required by New York Statute to put in an environmental easement. If you were a developer and you want to put a parking lot there or you want to put a building there, none of those things would have any major impact.

Redacted - Privacy Act : Can you explain environmental easement?

MR. MOORE: I can, but I want to make sure that I answer your question.

Redacted - Privacy Act : That was more clarification. I had more questions. You can talk about the environmental easement and then come back to me.

MR. MOORE: I didn't mean -

Redacted - Privacy Act : It's okay.

MR. MOORE: An environmental easement - all that really says is there is a map of the property. On the map of the property they surveyed in specific boxes and locations about where they know there is contamination that is above residential standards. If it's above industrial standards, we would have taken it out, but

this is something that where it's being above residential but below industrial standards. We have two areas that are in there with relatively shallow surfaces that we couldn't take out so that box will go and transfer with the property, so the new landowner that wants to buy the property says oh, this is an environmental easement. This is the area here -

Redacted - Privacy Act: That I can't build.

MR. MOORE: No, they can.

Redacted - Privacy Act: Oh, they can.

MR. MOORE: There are many ways to manage these issues. It could be a parking lot. It could be just about anything that you could think of as long as someone is not growing vegetables there and eating those vegetables for 30 years.

Redacted - Privacy Act: In that soil.

MR. MOORE: In that soil.

Redacted - Privacy Act: If you have three feet of soil on top of it -

MR. MOORE: But Redacted - Privacy Act I believe that you had a question.

Redacted - Privacy Act: My name is Redacted - Privacy Act . My reading of the report is that eight indoor dust samples were taken at 12 different sites. So, there are 96 samples; is that right?

MR. MOORE: I don't know the specific number per property. I would have to ask Dave.

MR. WATTERS: Most properties there were eight samples collected. Some are more; four in the living areas and four in the non-living areas - high use and low use type. There were four properties. Actually, the initial four we surveyed back in 2011. We couldn't get access to go back and get four samples of the living rooms and bedrooms.

MS. RABE: I can tell you one reason why. You guys never cleaned it up.

MR. WATTERS: If you do the math, we had done 12 properties. Four of them had four samples and the rest of them had eight samples. So, there was a bunch of samples.

Redacted - Privacy Act: Were the dust samples analyzed for enriched uranium or for total uranium or only for depleted uranium? The reason that I'm asking that is because as your presentation made clear and as we all know that NL used enriched uranium for many years. I don't know how much they used, but I imagined that some of it got to the atmosphere as well.

MR. WATTERS: It could have and we would have seen it because what we did was isotopic uranium. So, we saw uranium 234, 235 and 238 - all of which were

components of depleted uranium and natural uranium. The results were indicative of depleted uranium in all cases. We didn't see any indication that would make me think that enriched uranium - in fact, it always looked like depleted uranium.

Redacted - Privacy Act : The site inspection levels, as I understand, were developed based on using risk assessment precedents. Starting with toxicology numbers, working through scenarios and you came up with these numbers - how did the assumptions change the risk assessment when you look at the final results?

MR. OPDYKE: The easiest way to answer that is that the screening levels for action levels described in here were the most conservative exposure assumptions - going into the derivation of those. So, we made a list of assumptions where they were action specific. That's the difference. All that is in the risk assessment itself, which I encourage you to look at I guess in the library.

MS. RABE: You're allowing 630 millicuries --

MR. OPDYKE: Keep in mind that particular level would be typical in a garage.

MR. RABE: The front and back lawns are 35 millicuries. Based on the studies, that considered the safe level that was stored at the site for almost three

decades. Now you're telling us to believe that it's safe to have 630 to breathe in the garage. For some people, a garage is their workplace.

MR. MOORE: Where was that sample - in the rafters, right?

MR. WATTERS: That was in the rafters of a detached garage.

MS. RABE: It doesn't matter. It's the same as a front and back lawn, in terms a pathway to exposure. You don't live on your front lawn, do you? They said that 35 is the dose level that was safe.

MR. OPDYKE: So, you're asking me how does it matter? It matters because the possible exposures would be completely different. Soil is in your front yard and rafters are in the garage.

MS. RABE: I guess I would respectfully disagree that both pathways of exposure - one is more serious in terms of breathing it in and inhaling the dust that is up in your rafters and if you disturb it - which you will eventually some time - you'll disturb it and you'll breath it in - versus in the soil when your kid is out there and he's less than two years old and he eats soil. There are different pathways for exposure. I think that it's really hard for us as a community that has been impacted by the site that fought for 35

millicuries per gram based on dose. We think that it's a pretty decent protective clean-up standard based on what we have looked at with the sites around the country. For you to say that 630 - we should believe you that it's safe when it's many times more than what we have soil, you have not convinced me whatsoever.

I think that you have used the one in 10,000 that's been displayed here and not the one in a million. You picked the one that would fit the formula and you set the clean-up standard for dust after you did the testing when by rights agencies should for public trust purposes establish the standard for clean-up before you test. So, in other words, you set the standard so that you could say that you don't have to clean up anything. You did that after you did the testing, right?

MR. OPDYKE: I understand your concern. We did our risk assessment -

MS. RABE: It was ass backwards. It's not protective. I'm ashamed that our Department of Health and DEC for agreeing to it.

MR. MOORE: We will agree that the 35 is protective.

MS. RABE: Yes, we accept that is the best that we can do. We accepted it back in 1982 when it was established.

MR. MOORE: The 35 is protective for a residential scenario.

MS. RABE: Yes, that's what we believe and accept. We know that it's a compromise, but we accept it. That's why it's especially frustrating is that you're asking us to now accept 630, 426 and all these much higher levels for a pathway of exposure which is dust which gets into people's lungs.

MR. MOORE: You will also agree that there is a different exposure between someone who is a resident and sitting on the ground with their child and consume soil and ingest it for 30 years and then would have a potential cancer risk - between that and then someone's attic rafters where we were vacuuming up dust there that no one had ever cleaned in more than 30 years. You think that the dose standard should be the same for both?

MS. RABE: I know that some of the homeowners - the first four that you tested -- I know that some of those houses, they're trying to sell. I think of the next homeowner. The next homeowner might have a fifth kid and they decide to renovate the attic and make it into a fifth bedroom. In the process of the renovation, they have a teenage son who may end up inhaling a lot of contaminated dust that may impact

them. If they already have asthma or they are already have a sensitive metabolism, they're going to get a dose that they shouldn't get. When all we can easily do is clean up six of these 17 properties and eliminate those pathways of potential exposure that are going to be toxic. We can't say what is going to happen to these house in the future. That's why we have protective standards to protect future populations. When we leave contaminations behind, like you said, we have deed restrictions and easements.

I bet you're not going to have in those houses deed restrictions saying that you found contaminated dust and you whitewash it away with risk assessment policy and federal policy that is not protective. People are not going to know.

MR. MOORE: Let's go back to some of the basic premises. That's where I think that it's important to point out some of these conceptual model discussions. We're talking about contamination that occurred between 1958 and 1984. So, we're going back and we're sampling 30 years after the last bit or particle of material that could have been deposited in their space. So, reasonably one could make the case anywhere between 30 to 60 years that no one has really done anything about the attic or rafters of the place in question.

My point to this I think you make some valid points but I also think that you're not looking at some of the specific issues that are bigger environmental problems if someone doesn't clean their place in 30 years that is depleted uranium that is sitting on the eaves and the rafters.

MS. RABE: Then, the Department of Energy should not have cut a deal with NL Industries and sold the property for $10.00 and a waiver on any future liability. You should get the Department of Justice involved in doing cost recovery action then you wouldn't have to make clean-up decisions based on cost. NL would reimburse you and you would have plenty of money to go back and cleanup six lousy properties. By the way, that should be on your agenda. As soon as you finalize this in September -- we were told during the Clinton administration by the Department of Justice officials that we met with -- and we will go back and meet with them again in September under the Trump administration - but we will still do it because they said that as soon as all the remediation is complete at the site, the Department of Justice by rights can go back and look into a cost recovery action.

NL had nothing to do with the Manhattan project. It was a political deal that Senator D'Amato got campaign

contributions from NL, added them to the FUSRAP and we believe it illegally and rushed it through in two and a half weeks. So, you guys should go up to the Department of Justice for the cost recovery.

MR. MOORE: I can't comment on Senator D'Amato's actions. I can't comment on the Department of Justice. I also cannot turn around and talk to the Department of Justice because I am not the property owner. I am the property owner's executive agent in charge of cleaning up the site to the best of our abilities. That, I am sorry to say, is probably wholly in the purview of the Department of Energy. With regards to your other comments, you do make some good points that we will address in formal responses back to you.

All I can tell you is that we have worked together many years and we have always been able to figure out a way for a path forward. I think we have a path forward here tonight. I will leave it at that. Anybody else?

Redacted - Privacy Act: Can you tell me what the highest contamination is that you found in the living space areas?

MR. WATTERS: The biggest is 630. The living area is the highest that we found. It was 4.2. The highest residential was 4.2.

MS. RABE: That's because people vacuum all the

time. That's great.

MR. MOORE: It is great because frankly if they didn't vacuum there's a bigger problem there. I agree.

MS. RABE: Just think of Soho and all of those industrial areas and all those industrial places - they are people's apartments. And as some of those houses change over hands people are going to start building basement or attic bedrooms or whoever. Whatever is renovating that plus whoever is living there - they are living there in a place is dust of 630 and it just gets mixed into the general environment of that room and it's just not a healthy thing.

MR. OPDYKE: There is something else to consider and this is certainly beyond what I do. It might affect how you and others think about this and that is that there is not a lot of uranium in dust as compared to soil. The total amount -- dust, by its very nature, is fluffy. There is not good density to it as there is with soil. So, when you're talking about a total amount of uranium and dust because that's what we're talking about here - that is what you're most concerned about --- a beam of dust - the amount of uranium --- maybe Dave is smarter than me on this, but how much stuff would you say would be in a test beam about 10 feet long -- 12 feet long maximum, as opposed to how much

soil with that holds do you think? The point that I'm trying to make is that we are talking about if this were the equivalent to soil there would be a very, very small volume of soil which is what we're seeing now in the rafters.

MR. WATTERS: When you look at how much weight of dust that you have, it is very, very small. Even when there is a thick amount of dust -- because I was out there vacuuming and we struggled in many cases to get a sufficient mass to sample. Because the limits -- and you look at millicuries or measure radioactivity, there is such a density difference in such a small mass, the total amount of the uranium that is available to be brief is so much smaller.

MS. RABE: If you had to say a ballpark figure -- if you had to say a percentage - the percentage would be in the soil versus and it dust beam, it would be?

MS. WATERS: It's so small. This is one of the things that we wrestled with when we talked about doing this study at all. The potential for exposure for people is so small when you talk about the total dose - the amount that you could get -- the total amount possible because of the difference between soil and dust is that soil, you kind of assume, is an inexhaustible supply. It's always there to be consumed.

Dust is not that way at all.

Let's say you are intensely snuffing that dust, to put it in a nonscientific way. It is not going to take long before all that dust is gone. Does that make sense?

MS. RABE: I hear what you're saying.

MS. WATERS: So, in terms of the actual overall risk through time in terms of what we extrapolated risk wise -- and what we didn't do - a really conservative measure - we didn't put into the model that the source would be used up over time. In reality, the source would be used up over time and it wouldn't take long for all of that contaminated dust to be gone. We joked about this a little bit, but it is true. Most of what we did in sampling got rid of the problem entirely. If you were to go back to those areas you wouldn't find any at all. It was completely vacuumed out by what we did. You really have to keep that in mind. I'm sorry I didn't think about this earlier and I was just sitting there and I thought about this because now, how much time is gone by. We've been doing this on and off since 2009. It's not necessarily executing the work but in terms of thinking about it -- think about it. Then, of course, we have to put a contract in place and we have to get somebody to actually do the work.

In this case, we did the work. It's a little

different. It still takes time. So, another couple years have gone by since we have actually done the risk assessment and done the work itself, gotten to the point where we have a feasibility study. Then, we have a proposed plan. Now at the stage where we have a proposed plan in all of this time has gone by because we have to follow our process which is the CERCLA process and it takes time.

MS. RABE: As I remember, we had trouble finding an adequate amount of dust in the attic. We were concerned about taking too much of the lower basement windows because we were hoping you guys would come back. We used wipes. We didn't use a vacuum.

MR. WATTERS: We use a special designed vacuum.

MS. RABE: You vacuumed up a good part of the attic?

MR. WATTERS: Yes. There were couple that I remember were pretty dirty. I wouldn't be surprised if they were even accessed much if even at all over decades.

To go back to what Cliff was saying before, I think it is putting it in perspective. Let's say you took one of these properties - a dirty one, and you vacuumed up all the dust -- every little bit of dust that's in there. You're going to have a few pounds of dust.

MR. MOORE: Less than 5 pounds - probably the size of the sack of flour.

MR. WATTERS: You look at the soil cleanup standard and its 35 millicuries per gram and were talking about per a gram of soil. A piece of soil this big - the cubic foot - is one hundred pounds.

MS. RABE: One hundred pounds, you say?

MR. WATTERS: One cubic foot is 100 pounds. When we looked at the risk-based numbers we did in fact do renovation of the attic spaces. So, we did look at. I was a much smaller risk component than the routine use because it happens like once. Whereas, the other ones have the whole lifetime. So, we did specifically address.

MR. MOORE: Just to close your point, Dave's true point in the end is when you look at the volume of material now, there is not a lot of volume. They are probably well below your number when you look at the mass of material in these are the types of things we had long conversations with these two people back and forth for hours about these issues -- working through each technical nuance.

So, we have thought long and hard about the community and everyone involved to try to the best thing that was right and appropriate.

MS. WATERS: I just want to reiterate that we almost didn't do this at all simply because of the argument that there is so little stuff there to cause a problem. I just want to emphasize that.

MS. SCHUCK: I'm Maureen Schuck; S-C-H-U-C-K. I am with the New York State Department of Health.

Anne, a lot of your points were arguments that the department of health did make. We did a lot of the sampling and the whole process. We were not necessarily in agreement on a lot of the details, the risk analysis. I think the bottom line is that when we looked at the data - you didn't show the background sample but the background result -- we were not using the risk assessment. We were looking at the data for what it is. I think we're looking at the high use area and the fact that those numbers were very low. We had concerns with those levels in the 69 and 150 and 270 and 630 and certainly made recommendations for that to be removed. Those were the risk numbers to justify the Corps removing that. I think in concession we made recommendations to the Corps to make recommendations to the property -- we didn't just want to leave that - like you said, should they renovate or should they move - they be given clear instructions of what to do to safely remove that if they are going to renovate prior to the

renovation.

MS. RABE: Do you know if that's going to happen?

MR. MOORE: We put in the letters that we sent to each individual party guidance on what to do and to also call us to say okay, this was what was found. If you have questions about how to deal with this, just call us.

Redacted - Privacy Act : To follow up, you sampled 13 of the 56. I know that your sampling was random sampling and somewhat focused on -

MR. MOORE: Focused on the highest probability of finding that material.

Redacted - Privacy Act : So, of the 56 original properties how many of them were in the pool for selective statistics sampling?

MR. MOORE: The way that we did it is we set up concentric rings around the site - not the red line that Mike was talking about. We said okay, these properties within the close proximity of the site -- those with a high priority ones. That is where the deposition of dust would be directed. Then, those secondary ring outside of that going further -

MR. WATTERS: Actually, the first ring was the properties that we initially looked at. It's obvious why you would pick those when they were looking to try

to find material? We included all of those and that was the next two groups with the concentric circles -

Redacted - Privacy Act : You basically followed the path -

MR. WATTERS: That's correct.

Redacted - Privacy Act : Just one more follow-up question.

You said that you had sent out letters to the residents where you had done testing suggesting potential methods or methods to use for future renovation. Are similar letters envisioned for all the residents of potentially affected 56 properties?

MR. MOORE: No. The reason I say that is because of the way that we did our work, the properties that are the most likely impacted were all the ones that we already have looked at. We don't envision, based on the review of the soil results - because the soil results and the dust results compare very well. If you had a location that had high soil results, then you should have a location with high dust results.

So, when you went and did that analysis and came back with the same conclusion which is what Cliff was talking about all along, there is not that level of stuff out there.

Redacted - Privacy Act : I'm a little confused by your

representation that you had 13 representative properties and you did a representative sample and there are some properties that are in the same area that you may not be sampling that could have similar results.

MS. RABE: Just so you know we leafleted all the immediate streets and let each property-owner know that there would be a dust testing. Some people refused.

MR. MOORE: Many people refused. This guy was the one that did all that work.

MR. WATTERS: We did this random process where we had the first four properties since we knew that they had the highest potential and we had already sampled and knew that there was elevated uranium. We anticipated that people were going not let us on the property. So, for each of those zones we ranked them all. We basically used a random number generator in Excel and put them in order and then we would start with the first five because in each of those two groups we had scheduled to do five properties. So, we would go in and we would try to hit those properties in the order that they are listed, but sometimes we went to the bottom of the list and we didn't even get as many properties as we initially wanted to. I think that we ultimately contacted everyone that was on the list.

MR. MOORE: There were dozens.

MR. WATTERS: We sampled - and I believe and could be wrong here but I do believe that we sampled everyone that let us in. We exhausted our resources for the residential properties. Commercial properties - we only targeted two and we ended up doing three. Somebody said hey, you can come on and do it so we did.

MS. RABE: So, what would you recommend if someone calls you?

MR. OPDYKE: A standard vacuum with a HEPA filter and a dust mask.

MR. WATTERS: A good HEPA filter vacuum. The way you can decide that it's good is if they say it's an allergy protective one. I don't know the exact term but there is some kind of certification that the national allergy - whoever they are. They'll say that this vacuum has been certified to be protective -

MR. OPDYKE: Dust down to like 4.5 microns - that type of thing because it has a type of filter.

Redacted - Privacy Act: It's kind of like Asbestos abatement.

MR. OPDYKE: Yes, but even some of the commercially available ones I think would be fine for this purpose. You can buy those at Home Depot. They're available everywhere. What happens is those

vacuums will suck it up and they won't blow it out the back because they have a filter on it that is a catch-all.

MS. RABE: Is that how you do it for lead?

MR. WATTERS: Yes, it's the same. There is one point that we did want to make. When we talked about how we followed the lead sampling guidance for EPA, one thing that we didn't follow was they don't recommend looking into non-living areas. It actually specifically states in that guidance that you really don't go into an attic. To be thorough, we did. It's for a lot of the reasons that we talked about tonight. It's just the total amount of the material.

I did want to mention the 35 millicuries per gram limit - to put it in perspective, this whole mass quantity of material that you have - the reason that the 35 came out is a big part of it was to be protective of the ground water. When you have so many grams of soil each that have 35 millicuries, you have a whole bunch of millicuries that uranium will ultimately mobilize in certain circumstances and will get to the groundwater and cause a groundwater problem. If you were to say that I will never use the groundwater, that 35 is more like a 100 or more. It depends on who you talk to.

MS. RABE: That's exactly what we wanted to do.

They wanted to do 96.

MS. WATERS: At the end of the day that would probably be almost as protective because when you end up cleaning up soil like that, you tend to get it all -

MS. RABE: I understand, but still - you say back in the 80's was based on groundwater.

MS. WATERS: The inhalation of uranium and soil doesn't become as much of an issue. Uranium is bad to inhale, but when it's in soil with those concentrations, you can have that 96 picocuries per gram and it's not going to be as much of an issue but it does become a problem when it gets to groundwater. You have so many inventories because you have so many tons of soil that ultimately, it all goes into one spot. Ultimately all that material somehow gets to the groundwater and now you're drinking that. That's what brings those numbers really down. I have seen NRC clean-ups where there were hundreds and hundreds of picocuries per gram. So, 35 is very protective.

I have a Master's degree in health physics and I do believe that these levels are protective. I do believe that anyone that lives near an industrial area and has stuff that is settled in their house should be using the appropriate methods to clean it. That's a standing recommendation if you've been around - or if

you are in a place that has industrial emissions, when you clean up material like that which has settled over the years you really want to do it with a vacuum that does have a HEPA vac. EPA has in fact, over the years - they would go up in some houses and you could see how the emissions changed over the years. If they had real undisturbed dust, they would figure out a way to --- because the best tell of what was in the air were these places in the eaves and stuff where it's designed to communicate, but it's protected enough so that it's not getting blown away, so you can get a good layer of dust that over the years -- this is like dioxins. Remember we found one study when we looked all over the world and it took us a long time. There was a study in Germany.

MS. RABE: We did tree bark testing - when we were doing that back in 2009. We found three trees that were over 50 years old. One was on Central Avenue right next to NL and there was a SUNY Albany scientist who specialized in testing bark and plants. Jon [SIC] Arnis and Randy Parish who were the British scientist - they ran out of money, so it's still in a lab in England. We tested three trees and they wanted to look at the exposure and the sedimentation levels.

MR. WATTERS: We can see uranium really good. That's why they can see it so far out. Even the trace

amounts, you can tell -- NL emissions were almost always depleted uranium. I never have seen an indication otherwise, even though they did process enriched uranium. Enriched uranium is very expensive. You wouldn't want to throw that out the stack. The depleted uranium wasn't because it's like a by-product. The analytical techniques - what happens is that U-238 and U-234 -- the U-238 is normally the same as the U-234 but it's higher in depleted uranium.

MS. RABE: You know the urine test that the Department of Health did, right?

MR. MOORE: Yes.

MS. RABE: So, could send me a calculation - if it's five pounds of dust in an attic or basement versus 100 pounds of soil?

MR. WATTERS: Absolutely.

MS. RABE: In terms of the levels and how they relate to the 35.

MR. OPDYKE: We can definitely do that.

MS. RABE: Thank you.

MR. MOORE: The simplest way to do that -- we can do this one of two ways. We can have an agreement that we'll take care of that on the side. If you make that a formal comment, we would have to provide a record of that information to you. Either way, I'm committing to

you that my team will work on this issue and answer that question for you.

So, I think that we can let the Stenographer rest her hands and we can conclude our meeting for tonight.

Thank everyone for participating and coming out. It was a pleasure meeting all of you and all of this information will be included within the transcripts. Also, if you have any official comments that you'd like to send us, please do so. The closing date on the proposed plans is the 13th. Again, thank you so much and have a good evening.

(Whereas the above entitled proceeding was concluded at 8:50 p.m.)

CERTIFICATION

I, NANCY L. STRANG, Shorthand Reporter and Notary Public in and for the State of New York, hereby CERTIFY that the record taken by me at the time and place noted in the heading hereof is a true and accurate transcript of same, to the best of my ability and belief.

NANCY L. STRANG

Dated 3-3-17