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PROPOSED CLEANUP ACTIONS FOR REMEDIATION OF
HANFORD WASTE SITES
CONTAMINATED WITH PLUTONIUM AND CESIUM



VOLUME III
MEETING
Tuesday, July 26, 2011
Best Western, Columbia Room
Hood River, Oregon

REPORTED BY: Michele J. Lucas, Court Reporter

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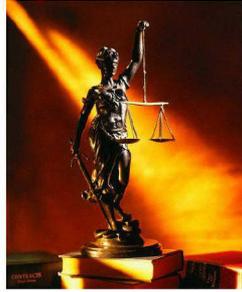
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VOLUME III

MEETING

Tuesday, July 26, 2011

7:01 p.m.

MR. NILES: Thank you all for coming it was a gorgeous evening out there. Thank you for giving up your summer evening and talk with us tonight.

It is always encouraging to see the support we get --

(Brief interruption)

MR. NILES: It is always encouraging to see the support we get in Hood River and the mid gorge. Always get a consistent group of folks to come out and provide some comments.

My name is Ken Niles. I work for the Oregon Department of Energy. I head up the State of Oregon's oversights of the Hanford cleanup, and a lot of you have seen me at meetings like this in my state role. A little bit different role for me tonight in that when the Department of Energy approached me a few weeks ago asking whether or not there would be interest for a meeting in Hood River and in Portland on this topic, and I said

1 absolutely. And they said: Well, we are a little
2 bit tight in terms of our budget. We really can't
3 afford a professional facilitator. Would you mind
4 doing that.

5 So they are saving some money, which is a
6 good thing, and I will ask for your help in making
7 this a good meeting tonight. So, again, thank you
8 for coming.

9 We are here to talk about -- you know, a
10 lot of you have been here. We have talked about
11 bits and pieces of Hanford cleanup. Hopefully this
12 will make sense tonight in terms of how it all fits
13 together, but tonight we are talking about 21
14 different waste sites and a proposed plan by the
15 tri-parties as to what to do with those waste sites.

16 And there is a lot of information around
17 the room. I know a lot of you have received
18 information via E-mail and otherwise. And we have
19 got a couple of speakers here that are going to
20 explain some of these things for you. What we would
21 like to do is, we have got a speaker from the
22 Department of Energy who is going to talk a little
23 bit about this, a speaker from one of the
24 regulators, in this case, the Environmental
25 Protection Agency. I will step out of this role for

1 just a couple of minutes and provide you some
2 comments on behalf of Oregon. We have an
3 alternative public viewpoint that is going to be
4 joint shared by Columbia River Keeper and Heart of
5 America Northwest.

6 We will take some time, hopefully not too
7 long but as much time as we need, to clarify things,
8 to do a little Q and A to answer things or clarify
9 things that might come up during the discussion.
10 And then really the purpose of the meeting is for
11 the tri-party agencies to get comments from you
12 about what they are proposing to do. So we will
13 have a formal public comment period as the last
14 thing that will run through the remainder of the
15 meeting.

16 So that is our plan. Our plan is to be
17 out of here by about 9:00. I think we have a few
18 enough people that we should be able to do that
19 without cutting people's testimony time too much.
20 But we will try and see if three minutes or so works
21 for everybody to do that. So that is the plan.

22 Does that sound right with everybody to do
23 that?

24 Yes, sir.

25 **MALE SPEAKER:** You are referring to the

1 tri-party.

2 **MR. NILES:** Yes.

3 **MALE SPEAKER:** What's that?

4 **MR. NILES:** The tri-parties is the U.S.
5 Department of Energy which is the owner and
6 operator, if you will, of the Hanford site, and it
7 is two regulators, the State of Washington and the
8 U.S. Environmental Protection Agency. Together they
9 form the tri-party agencies and have an agreement
10 that sets up cleanup milestones at Hanford. So that
11 is the tri-party agencies.

12 So before we get started with our DOE
13 speaker, let me just write this down here for you
14 real briefly just because the official thing we are
15 here for tonight is to comment on the draft proposed
16 plan on the CW-5 and PW-1, 3 and 6 operable units.
17 And I know what I just said made no sense to most of
18 you, and it barely makes sense to me.

19 But what I want to tell you is it is
20 really not important that you understand what PW-1
21 is versus PW-3 or an operable unit. It is really
22 not important. What is important is to understand
23 there is really six groupings of waste sites -- and
24 they are going to explain this all to you, but I am
25 trying to give you kind of a preview -- six

1 groupings of waste sites that they are proposing to
2 do some things at Hanford. There is some plutonium-
3 contaminated ditches that they are proposing to dig
4 up. There is some other plutonium waste sites
5 called low-salt waste group that they are proposing
6 to dig up as well. There are some pipelines they
7 are proposing to dig up, and there are some tanks
8 they are proposing to empty.

9 The things that I think you will probably
10 find more interesting is the other two waste groups.
11 One is three different waste sites that have large
12 amounts of plutonium, and JD is going to talk about,
13 and the others is going to talk about what the
14 proposed plan is. The other group of waste sites is
15 five waste sites that contain cesium, which is also
16 radioactive material. And they will talk about
17 those as well. So if you break it down it is kind
18 of what we are talking about tonight. And hopefully
19 it all will make sense and come together for you.

20 So our first speaker is with U.S.
21 Department of Energy. He is the assistant manager
22 for the central plateau. Correct title? From the
23 Richland office of Hanford is JD Dowell. JD.

24 **(Brief interruption)**

25 **MR. DOWELL:** I would like to echo the

1 thank-yous for everyone coming out tonight. We
2 serve the public in our role in the Department of
3 Energy. We are here to get your input and to hear
4 what you have to say about what we consider to be
5 the options that we are presenting for the
6 remediation of these sites that we are going to talk
7 about tonight.

8 I want to quickly go through who is here
9 from the team. It is combined contractor and DOE
10 team. I have Briant Charboneau here. He is the
11 FPD, the federal project director for many of these
12 sites, the groundwater and soil.

13 I have got Bill Burk from the contractor
14 group. I've got Dale McKenney off to his right,
15 Sonya Johnson who does communications and community
16 outreach, Moses Jaraysi, and back at the other table
17 I have got Paula Call, and I think I have covered
18 everybody. Am I missing -- no -- Cameron Soloney.
19 Where's Cameron?

20 That is my group that I have tonight. So
21 if you have questions, grab one of us afterwards if
22 the period is too long. We are going to be here as
23 long as it takes for you to get your questions
24 answered even after the 9:00 time when we are trying
25 to achieve finish. I am here with Emmy Laija, and

1 she is going to cover a few of the slides here from
2 EPA.

3 Before I get started, a brief comment on
4 what you saw before this. I know Gerry Pollet had a
5 seminar going in back. Hopefully you had a chance
6 to look at some of the placards and get the
7 background information on some of these sites we are
8 going to talk about. I also courage all of you to
9 look at the Hanford site story which really kind of
10 does a good job of wrapping up the size and
11 magnitude of what we are trying to achieve with the
12 remediation and cleanup of the Hanford site. In
13 addition to that, every time I go out and every time
14 I take any speaker that comes with the Department of
15 Energy we are going to put out slides of progress
16 over the last year, and if you haven't had a chance
17 to go out to the site you probably don't have a real
18 good concept of it. It is massive, very large and
19 huge. And we had the slides going at the beginning
20 of the brief or beginning of the public comment or
21 open house period just showing that. So I courage
22 you all to take a look at those things, and I hope
23 you enjoy them and understand a little bit better of
24 what we are talking about.

25 So from the standpoint of tonight, I

1 talked about the purpose. We are here for you. We
2 are here to get comments from you. We are here to
3 find out what the adequacy of the options that we
4 are going to show you are and see what you think
5 about those. We are going to split it out into an
6 agenda. I am going to talk briefly about the
7 Hanford cleanup approach and kind of take you from
8 the big picture down to the areas that we are
9 talking about and mention remediation tonight. So
10 hopefully I will go at a level where you all
11 understand that, and I am not going to move speak
12 simplistically, but we are going to have to move
13 through that material fairly quickly.

14 Then we will talk about the actual
15 operable units which are -- just think of those as
16 the areas that we are talking about, and you can see
17 those broken down into 200 CW-5 which is cooling
18 water -- that is what CW stands for -- and 200 PW,
19 which is process water, 1, 3 and 6 of the sites that
20 we are talking about the remediation plans tonight.

21 We will go into some detail on those. I
22 won't do that now. And, lastly, we are going to
23 talk about how you can provide that -- provide input
24 to us and the many ways that we take that input, and
25 if you don't think we take it seriously, change that

1 paradigm. We are listening to you. I just came
2 from Seattle last week. Came from Richland last
3 week and we are here for you. We serve our public.
4 That is the way I look at it, and we all take that
5 very seriously. So please give us your input.

6 A brief talk about Hanford cleanup
7 approach. These things are kind of expensive to
8 print, but we do have them available in DVD for you
9 to take tonight. If you want understand how the
10 Department of Energy and the government is looking
11 at the cleanup of this place strategically, this is
12 a pretty readable document, and I encourage you to
13 look at it so you can understand how we looked at it
14 and what our strategy is to mitigate this mess and
15 remediation of these sites that we call Hanford.

16 So that is a pretty good framework. It is
17 called -- I didn't talk about what it is called. It
18 is called the Hanford site cleanup completion
19 framework. And if you can see one of our
20 communications and outreach personnel, they will
21 help you get a DVD of that tonight.

22 Looking into the gross area of Hanford,
23 you probably all have seen this before, but I am
24 going to kind of briefly cover it. 586 square mile
25 area north of the city of Richland and the tri

1 cities to the south about 20 miles. If you look at
2 the green area that you see here, that is called a
3 Hanford Reach National Monument. Those sites are
4 being cleaned up as we speak. I am just finishing
5 those. My division is responsible for that, and
6 those sites are being shrunk. That footprint is
7 going to be shrunk this year so that we will finish
8 final cleanup on the Hanford Reach National
9 Monument. Sounds like a big deal. It is a big
10 deal, but those are not very highly-contaminated
11 sites. That is where a lot of junk was out there.
12 There was missile sites that they used to protect
13 the site with, that kind of thing. So that
14 footprint is shrinking. That is about 290 square
15 miles, and it includes not only the monuments to the
16 north but also the Arid Lands Ecology Resort which
17 is Rattlesnake Mountain. If you have ever been by
18 that area you will see a big large mountain area in
19 that part.

20 The next stage is the river corridor which
21 is shown here in the yellow. It is about 220 square
22 miles. We are focusing on river corridor right now
23 because it is close to the river. It makes a lot of
24 sense. We looked at those fields and the
25 remediation sites, the buildings, the nine reactors

1 that were used to transfer uranium into plutonium.
2 Those were along the river because they had to be
3 close to the river for cooling water. We are
4 looking at that first so that we remove the risk to
5 the river as soon as we can. So that is the
6 strategy here.

7 Next you look at the central plateau, and
8 that is my area. When you look at the central
9 plateau, it is broken into two areas. The total
10 area of 75 square miles broken out into an outer
11 area that is 65 square miles in the light brown and
12 an inner area, that reddish brown, of 10 square
13 miles. Very important concept is that the inner
14 area is an area that the Department of Energy will
15 have continuous presence until we remediate and
16 finish the cleanup. And what that means is that we
17 will be there as long as it takes to protect human
18 health and the environment. That is the concept. I
19 will come back to at the end of the night, but it is
20 an important concept. That means that as we looked
21 at the land use of these areas, as we looked at how
22 the land is going to be used along the river,
23 eventually we are going to want to see that turned
24 over to other agencies of the federal government
25 like Fish and Wildlife, and we are looking at the

1 processes for doing that now.

2 Much different for the industrial area.
3 The industrial area is ours. We are going to be
4 there for a long time, and I will talk to you
5 specifically about how that area was designed to
6 minimize the footprint to as small as we can make,
7 and we will talk about that in a second.

8 Last thing I want to leave you with is
9 think of this as a concentric circle shrinking, and
10 we are trying to shrink it down to the inner area
11 footprint. That is what we are all about. We are
12 all about making that as small as possible
13 concentrating the material that is going to be there
14 for a long time in that area so that we can monitor
15 it and have a long-term presence to monitor it to
16 make sure that the human health and the environment
17 is safe.

18 So as we looked at the central plateau
19 area, there is three areas to it, and when I talked
20 about the river corridor one of the goals for the
21 river corridor is we are trying to return that water
22 to drinking water standards, drinking water
23 standards. You can pump that water out and drink
24 it. In the central plateau we are trying to achieve
25 the same thing, and if we can't achieve it we will

1 continue to pump and treat but we are going to at
2 all costs stop any plume that exists right there
3 today from reaching the river. So our goal is to
4 target trying to get drinking water standard in the
5 central plateau. If not, we are going to stop plumes
6 from reaching the river.

7 Those are two very important concepts for
8 groundwater remediation which is one of the three
9 strategies for the central plateau.

10 The other one is the outer area which,
11 again, compared to the inner area is less cleanup,
12 but that is where you are starting to get into more
13 of the radioactive sites that we have to remediate,
14 but it is much less complex than the inner area.
15 The areas that we are going to talk about tonight
16 are in the inner area, and that inner area is where
17 we are going to drill down now.

18 So when I look at the inner area and you
19 look at the decisions that we came through to get
20 that inner area, if you think about it as a
21 progression of decisions, and you can see where they
22 started. In 1965 Hanford site was still operational
23 through 1989. Department of Ecology needed a
24 radioactive waste disposal site, and that was the
25 first site we established right here. In 1986 naval

1 reactors, not Department of Energy, Department of
2 Defense needed a place to put burial of submarine
3 corps, and that was established up in this area.
4 1992 was the next time we actually started
5 establishing disposal remediation sites. In 1989
6 Hanford went to coal operations. We were no longer
7 operating at that time. We became a cleanup project
8 at that point.

9 So you can see those decisions and
10 recommendations came in various times throughout
11 this, up through 2006, to show exactly how we got
12 the footprint we have today. Pretty odd looking
13 footprint, isn't it? It is not a rectangle. It is
14 not pretty. We call it the soup bowl. I don't
15 know. You can call it whatever you want, but it is
16 defined by only those areas that we think we are
17 going to need to monitor and take custody of long-
18 term. And, again, it is going to have a continuous
19 presence there until there is no longer a need to
20 protect human health and the environment. So that
21 is a very important concept about the inner area.
22 We are not going to release it for farming. We are
23 not going to release the water for irrigation. We
24 are not going to build condos. That is an area that
25 we are going to probably, fence and as we talked

1 about before CERCLA will determine inside the final
2 decision exactly what measures we will take to
3 protect the public, but there is going to be control
4 in that area that prevent the general use and
5 protect not only the public. What I am really
6 concerned more about is a worker that is in there
7 that can dig down in the soil. That is really what
8 we have to protect at that point because that
9 material is all going to be engineered. The DNF
10 plates like the ERDITH, the ERDITH disposal
11 facility. If you don't know what that is, you know,
12 we will amplify that. But these are some long-term
13 storage areas that are engineered to be for a long
14 time. We have to monitor those and have a presence
15 there as the Department of Energy long time.

16 So as we look at the inner area, I talked
17 about the argument is that to make it as small as it
18 is and as small as it can be, but it has that kind
19 of ugly footprint to it. Is it not perfect. It
20 might be challenging to manage, but that is really
21 what we should be doing is minimize the amount of
22 area that it has. We have the commitment to long-
23 term DOE presence in that area. When I say long-
24 term I am talking hundreds of years if not thousands
25 of years.

1 **MALE SPEAKER:** It's not tens of thousands?

2 **MR. DOWELL:** What's that?

3 **MALE SPEAKER:** It is not tens of
4 thousands?

5 **MR. DOWELL:** You know, we can go there,
6 sure, tens of thousands, but it kind of becomes
7 funny money when we start talking about 10,000
8 years.

9 But the commitment is going to be as long
10 as we have to protect human health and the
11 environment. So if it is 10,000 years, that is the
12 commitment.

13 Okay. Then as you look into the inner
14 area approach, some of these decisions are going to
15 have to be risk based. Risk based means we look at
16 the risk, and you will see that tonight. We will
17 assess what that risk is to the public. We will
18 assess what it is to a co-located worker that is
19 working in that site, and we will make the decision,
20 not cheaply, not based on just budget, but a more
21 kind of holistic balanced approach. And the way
22 that we get to that is that we meet a threshold
23 criteria in CERCLA. When we conduct a remediation
24 and we recommend a proposal for how we are going to
25 remediate a site, it meets a threshold criteria. It

1 is a balancing criteria is what we call it. And
2 really it is a very simple process. It looks at
3 five different areas once we get to the balancing
4 decision. Long-term effectiveness and permanence,
5 you know, if it is going to last and be durable, the
6 short-term effectiveness, well, it is going to
7 provide the protective measures that are designed to
8 in the short-term as well; the reduction of toxicity
9 mobility or volume as necessary, again, to protect
10 human health and the environment; and implement
11 ability which means the ability to actually
12 institute the control, engineer it and deploy it;
13 and then, lastly, cost. Those are the balances that
14 we have to look at.

15 It is not overdriven by cost. It is not
16 overdriven by cost. You know, you all read what is
17 happening in the American economy, the rescission
18 and the budget. It is not a good news story for us.
19 We are not going to live in the means of \$10,000 and
20 \$100,000,000 there and be able to throw money
21 around, not that we threw money around in the past.
22 I am down to the point now where I have to make very
23 critical decisions at the \$10,000 and less level.
24 We have always done that. We have always been good
25 custodians of taxpayer dollars as long as I have

1 been there at least and recent memory, but it is
2 going to be more acute, as you know, with the
3 recession, but it is not going to drive these
4 decisions. These decisions have to be made to
5 protect human health and the environment.

6 On that note, I am going to turn to this -
7 - well, actually, I am going to go through the
8 CERCLA process and then turn it over to Emmy.

9 So the CERCLA process, this is important
10 because this will kind of drive home why we are here
11 tonight and why your opinion matters and why your
12 comments matter.

13 We start with the process of doing a site
14 inspection. We do personal interviews. We look at
15 record reviews. We look at the data and the history
16 of how these sites were developed, how they were
17 operated. We go into remedial investigation where
18 we collect all this data. We collect the samples
19 that we have in place. We determine and get a big
20 data package of what we think is there. As you look
21 at those placards and they summarize the materials
22 that are in these areas, that is what that does. It
23 actually roles up all that material in the remedial
24 investigation to kind of give us the information
25 that we need to make decisions. Then we look at

1 feasibility studies, and this is where we actually
2 develop our alternatives. We lack at the risks. We
3 try to balance those risks with the different
4 alternatives, and then we go through a process, a
5 CERCLA process, to evaluate those risks.

6 Two years ago we came out to the public,
7 and we got input from the tribes, got input from the
8 State of Oregon. We got input from our other
9 partners of TPA, and we got input from the public,
10 and we actually made some real changes in the
11 remediation, the sites we are going to talk about
12 tonight.

13 So it matters. That is all I am trying to
14 say from that. Right now we are at the proposed
15 plan, step three. We are at the time where we want
16 to select an option, and we have a preferred option
17 that we are going to present to you tonight, and
18 then we will take your comments and then go back to
19 the tri-party agreements and make decisions off
20 those comments.

21 Lastly, we will get to -- or the next
22 three steps basically take it to closure. We have
23 developed a record of decision. It is a record of
24 decision that we go out, and we are going to
25 describe our remediation actions. So when we come

1 to that decision and we determine which alternative
2 we are going to use, it comes into a design and an
3 engineering process to deploy that action for
4 remediation of the site.

5 After that we are not done. Again, this
6 is that long-term stewardship I talked about,
7 especially in the inner area. As we make these
8 decisions, we have to revisit the effectiveness of
9 those decisions in the future. It is a commitment
10 by law. So it is a legal standard, if you will,
11 that bears us to this obligation, and that is a very
12 important concept to understand. We can talk about
13 the specifics as we get to it later.

14 I will turn this over to Emmy. She is
15 going to set us up on basically the background of
16 these areas.

17 **MS. LAIJA:** Good evening, everyone. My
18 name is Emmy Laija, and I work for the Environmental
19 Protection Agency. I am the project manager for
20 many of the waste sites that we are going to be
21 discussing tonight. I just wanted to take a few
22 minutes to give you some background information on
23 how these waste sites became contaminated.

24 So the waste sites are located in the
25 inner area. That is a central area in the dark red

1 colors. The inner area is basically divided in two
2 halves. We have the 200 west area, which is on the
3 left-hand side of the inner area, and then the 200
4 east area, which is where the cesium contaminated
5 sites are. The ones at 200 west are the sites that
6 are contaminated with plutonium. I will talk a
7 little bit more about that in a second.

8 So let's take a closer look at the inner
9 area, what else is going on there. There is
10 numerous waste sites located there. Tonight we are
11 looking at 21 waste sites.

12 As I mentioned, the ones in 200 west are
13 the plutonium-contaminated waste sites, and the one
14 thing with the inner area, as JD mentioned, it is a
15 different type of cleanup that we are doing here.
16 We are looking at an industrial cleanup. So that
17 makes it unique to Hanford. This is one of the
18 first decisions that we will be making in this area
19 that has industrial cleanup standards. So that is
20 one thing to keep in mind when we are discussing the
21 cleanup alternatives later on tonight.

22 One thing, JD hinted at this. We are
23 looking at soil-contaminated sites. There is also
24 contaminated groundwater at Hanford that is located
25 beneath where these sites are located. That is

1 being remediated under different decisions. We are
2 currently constructing the 200 west pump and treat
3 system. It's the nation's largest pump and treat
4 system which will be sucking up contaminated
5 groundwater, treating it and then reinjecting the
6 clean water back in into the groundwater. So there
7 is other cleanup actions that are going on to
8 address contamination in the area. We are looking
9 at a small piece of it tonight.

10 So let's go ahead and see what these waste
11 sites are. There is 21 waste sites, and this
12 graphic here is depicting how they became
13 contaminated. In that central part of Hanford we
14 had processing facilities where plutonium was
15 processed, and those activities generated large
16 amounts of liquid waste which was disposed of in the
17 soil.

18 So with these 21 waste sites, we grouped
19 them into operable units, which is kind of
20 confusing. 200 PW-1 has no meaning to anyone just
21 hearing that phrase for the first time. So we
22 looked at the waste sites and said how can we group
23 these better? What are the similarities between
24 them? So we divided them into waste groups based on
25 the type of waste they received, and then with the

1 similarities between those waste sites we were able
2 to look at cleanup alternatives that we could apply
3 across the waste group. So these are similar.
4 Ideally the same type of cleanup approach would be
5 applicable to all of these waste sites. So we broke
6 them down, and some of the waste groups are listed
7 here.

8 This first little shape on the bottom is
9 looking at the Z ditches and the low-salt waste
10 group. So these waste sites received liquid waste
11 that was contaminated with plutonium and americium.
12 So these sites we are looking at things like ditches
13 or cribs or trenches where the liquid was disposed
14 to.

15 In these cases the waste didn't travel
16 that deep into the soil column. In the Z ditches it
17 went down about 15 feet below ground surface. For
18 the low salt sites, it went down to about 25 feet.
19 So it didn't travel too far down into the soil
20 column. However, for the high-salt waste group,
21 which is the third little graphic on the bottom
22 here, this was highly acidic, and that allowed that
23 wastewater to travel down into the soil column to
24 about a depth of 100 feet below the surface. So
25 that makes those high salt sites unique.

1 We know there is a lot of interest around
2 these sites. So we will be interested in hearing
3 about what you have to say about cleanup of those
4 sites in just a little bit. But, again, those stand
5 out from the other waste sites we are looking at.

6 We also have tanks in the PW-1 and 6
7 operable units. There is two tanks overall, and
8 these tanks were used to collect solid when
9 wastewater was discharged. Think of it as an old
10 septic system. You flush the toilet; the solids are
11 separated into a tank and then the dirty water is
12 discharged into the soil usually over bed of gravel
13 or tile or something similar.

14 So that is a very simplified version of
15 what happened here, but it is the same general idea.
16 So that is what is in the tanks, sediments
17 contaminated with plutonium and americium from the
18 activities that were occurring when we were
19 processing the plutonium.

20 The next waste group is the cesium-137
21 waste group. Those were located separate from the
22 west and 200 east and here the waste contaminated
23 with cesium traveled to a depth of about 28 feet or
24 so.

25 We had two other sites that we are not

1 really discussing tonight. We tested them. We
2 found that the risk levels there were not a threat
3 to human health and the environment. So there was
4 not a remedial alternative identified for those.

5 And I will go ahead and hand it back to JD
6 so he can talk about the alternatives we evaluated
7 for these waste sites.

8 **MR. DOWELL:** That is a really good
9 background.

10 And Ken talked about six areas. This is
11 the first of six areas, and we are basically going
12 to go through these. I hope we have a handout
13 because the handout is fairly self-explanatory.

14 First is the current 200 cooling water 5
15 area. This is a good picture of that. It shows, if
16 you look at the back map, these are very long
17 trenches. One goes up to 4200 feet. This actually
18 shows normal salt for the trenches that we are
19 talking about in that area. Not a very clamorous
20 photo, but that is what we see out there, and that
21 is how we looked at these fields every day, and we
22 don't really determine much from that, but it does
23 show you and kind of characterizes what is out there
24 now, and you can see what it was designed to be
25 earlier.

1 These are pretty shallow open ditches.
2 They are known as Z ditches. They are very
3 rudimentary in their design. Some of them were just
4 ditches in the ground. Some were engineered. Some
5 have French pipes, as Emmy talked about, the
6 different kind of configurations.

7 I kind of find it fascinating that there
8 were so many variations out there. It is not a
9 really a good thing because it seems like it was
10 somewhat an undisciplined process, but they were
11 looking at different technologies at the time to get
12 the stuff in the soil, and that is what it was all
13 about at that time.

14 There was a tile field and an unplanned
15 release site. Unplanned release site sounds really
16 bad, but actually it was a site where they got too
17 close to one of the trenches that existed and
18 decided that they couldn't use that but still used
19 it and then moved and did another trench. So it was
20 just a site that we found or knew about that
21 actually wasn't a complete trench but ended up being
22 used in that manner.

23 Again, these received cooling water from
24 the plutonium finishing plant. It also received it
25 from the Z plant. So if you see a Z or a PFP, it is

1 the plutonium finishing plant where we did the final
2 processing of the material before it was weapons
3 grade.

4 The contamination is located primarily at
5 and below the bottom of the trenches. So most of
6 these fields are fairly shallow, shallow being less
7 than 15 feet or shallower, and the primary risk
8 drivers were, as you can see, americium, plutonium,
9 cesium and radium.

10 When we looked at the remedial
11 alternatives, CERCLA by law describes us to look at
12 these, for instance, the no action option where we
13 don't do a thing. We always look at that option as
14 a base. We looked at maintaining the existing soil
15 cover with institutional controls, which is not
16 doing anything but making sure people can't dig it
17 up. It's making sure we have a fence around it, if
18 you will.

19 Remove, treat, as needed, and dispose --
20 RTD is the acronym for that -- where we actually
21 remove the soil that is contaminated, backfill with
22 clean soil and remove the contaminate from the
23 ground and then process it to the appropriate waste
24 site.

25 Engineered surface barriers, and you know

1 that surface barriers are what it sounds like. It
2 is basically a way to provide a barrier on top of
3 the material, stays in the ground, that prevents
4 water from penetrating the soil and acting as a
5 motive force for driving that material back down
6 deep into the water column.

7 Again, job one: Do not let this stuff get to
8 the water column. Do not let it get into
9 groundwater. That is exactly what we are trying to
10 achieve here. That is what we are trying to make
11 long-term in our decision process with these
12 alternatives.

13 The next one is in-situ vitrification.
14 Vitrification is a fancy word for glass. So
15 basically what this does is it puts electrodes into
16 the ground. Between 30 and 40 feet I think is the
17 maximum extent you can do this to. It drives an
18 electric charge through these electrodes on opposing
19 field and it actually vitrifies the soil, turns it
20 into glass to hold the material in the soil.

21 So there is some question about
22 effectiveness of that, but it is an option, a
23 definite option.

24 The last thing we looked at, a combination
25 of alternatives. For this decision we are -- our

1 proposed alternative is to remove, treat and
2 dispose. So we are going to remove the contaminated
3 soil. I talked about about 15 feet. We will treat
4 it as necessary and then take it to the appropriate
5 disposal site. That is either ERDITH, on the site
6 low enough or it is true. True waste goes down to
7 the waste isolation pile plant down in New Mexico,
8 WIPP.

9 So that was the first area. Now, for this
10 slide this gives you a general overview of the five
11 areas that we are going to talk about. Ken talked
12 about those as well.

13 There is 16 engineered liquid waste
14 disposal sites in 200-PW-1, 2 and 3. They are
15 broken down into these five types of areas, and they
16 are not all grouped in the same. For instance, we
17 have high salt, low salt. We have settling tanks
18 which is a geometry problem to dispose. We have
19 cesium-137 which is a specific radionuclide of
20 concern, and then we have other sites, which is kind
21 of a miscellaneous site that we have grouped
22 together because the remediation is the same.

23 These were just Hanford site operations to
24 introduce how to dispose of plutonium-contaminated
25 water. It was just kind of stepping grounds, if you

1 will, and the primary risk drives are plutonium,
2 americium and carbon tetrachloride.

3 Lastly, the current PW site is the only
4 one that we really focus on with cesium-137. It is
5 a little too early.

6 I am going to go through these
7 alternatives and what we looked at. The only
8 difference between this and the other list, we have
9 the no action alternative. The second one is a
10 little bit different. We maintain or enhance the
11 existing soil cover, and that means that we are
12 adding material on top of it to enhance a barrier to
13 prevent access to that material or give it a higher
14 stand-off to protect workers.

15 We have an engineered surface barrier as
16 we have talked about. We have in-situ vitrification
17 as an option, as we have talked about.

18 We have remove, treat and dispose, as we
19 talked about.

20 And, lastly, we have soil vapor
21 extraction. This is a highly effective means of
22 extracting carbon tetrachloride. So we basically
23 just put a vacuum on the ground, and we pull out the
24 vapor. It is vapor form, and then we basically
25 condense it. So that we are pulling out that carbon

1 tet and constantly pulling it out of the soil with
2 the vacuum. It is pretty simple technology. It is
3 highly effective because in the right conditions
4 carbon tetrachloride does get into a vapor form, and
5 it is effective relative to the other ways we
6 mitigated, which is pump and treat.

7 So as we look at preferred alternatives,
8 we are going to start with one group, the high-salt
9 waste group. We looked at the high-salt waste
10 group. Emmy talked a little bit about the way that
11 it fused into the ground. It is a significant
12 concern up to 110 feet into the ground. Right now
13 we looked at that, and we say it is clearly that the
14 plutonium that we assessed to be stable. I will
15 talk about what that means in a second.

16 Our alternative, however, looks like
17 continuing to operate the soil vapor extraction
18 system. We are going to excavate the highest
19 concentrations or at least -- let me correct that.
20 We are going to excavate to two feet of this
21 material. We are going to excavate two feet of the
22 contaminated soil after we remove the structure. So
23 in this case it takes it to about 22 feet in the
24 ground is how much we are going to remove.

25 Then we are going to remove and dispose of

1 that material and the structures as necessary and
2 take it to the appropriate fill. We are going to
3 backfill the excavated area with clean fill, clean
4 fill. We are not mixing anything or anything like
5 that. Clean fill gets backfilled into what we
6 excavated, and then we are going to construct one of
7 those evapotranspiration barriers over the site.
8 This is engineered barrier, and this is designed to
9 basically provide a plant cover or some kind of
10 cover that actually allows the water to evaporate
11 naturally from the top of that field after we
12 engineer a barrier, and it has got an impermeable
13 membrane underneath that that prevents the water
14 from, again, getting into the ground and driving
15 that material at all. So if there is no motive
16 force, the material remains stable.

17 **MR. NILES:** JD, if I can speed you up here
18 because we are already over time.

19 **MR. DOWELL:** Okay. The others are less
20 complicated.

21 The low-salt waste group, we are going to
22 remove the significant portion of plutonium
23 contamination, and we are basically going to do an
24 RTD, remove, treat and dispose. We are going to
25 apply the evapotranspiration barrier. On the low-

1 salt waste group, that material, again, is fairly
2 shallow. It didn't penetrate deeply into the soil.

3 The current PW-3, which is the cesium-137
4 waste group, we are going to maintain and enhance
5 the existing soil cover to assure waste sites are at
6 least 15 feet below the ground, and that is all we
7 are doing for that site. That alone is it.

8 For 200 PW-1 and 200 PW-6, these are
9 settling tank waste groups. We are going to take
10 the material out of those tanks, stabilize it and
11 dispose of so. So it is RTD of the material in the
12 tank, and our plan is to grout that tank in place,
13 and that will hold that tank and whatever remains in
14 that tank in place in the ground.

15 And, lastly, for 200 PW-6, other waste
16 sites, there is no action required on these because
17 we don't have -- we just can't find the material
18 there. And Z-8, the French drain in Z-10, injection
19 reverse well, the soil concentration -- the
20 contamination concentrations are below risk. So
21 there is really nothing to mitigate at this stage.

22 So how you can provide comment? We are
23 here tonight to take your comment personally. You
24 can provide verbal comments, provide comments now on
25 paper. There will be a Q and A session that we will

1 get to here in less than minute, and you can also
2 submit written comments to that website or that
3 address.

4 We are going to go back to the tri-party
5 agreements probably within two weeks and assess the
6 comments. We will look at every comment. We will
7 have an analysis done on every comment that we hear,
8 and then we will come to the decision, and we expect
9 that decision to be made by the end of September.

10 Thank you.

11 **MR. NILES:** Thank you, JD.

12 And I know Emmy wants to provide just a
13 brief comment on EPA perspective on these
14 alternatives.

15 **MS. LAIJA:** Yeah, I am just going to take
16 one minute.

17 With EPA when we look at these
18 alternatives we are looking to see if the
19 alternatives that are being proposed are protective
20 of human health and the environment. So that is
21 what we look at with these alternatives, and we
22 determined that, yes, they are considered protective
23 of human health and the environment.

24 However, we are very interested in hearing
25 what you have to say about the high-salt waste

1 sites. We know, there is a lot of energy on those.
2 We welcome that feedback. Your input does have a
3 direct effect on the decisions we are going to make.
4 So I encourage you to share your comments with us.

5 And I am also interested in hearing on the
6 cesium waste group. We are proposing bringing in
7 backfill to maintain a 15-foot depth of cover over
8 those waste sites, and that is a new approach. We
9 don't typically bring in backfill to put over a
10 waste site. So any feedback you have on that part
11 of the cleanup decision as being presented here
12 would be very helpful as well. Thank you.

13 **MR. NILES:** Thank you, Emmy.

14 I am going to step out of my role briefly
15 as moderator and give you just a couple minutes on
16 the State of Oregon's perspective on this cleanup.

17 If you haven't seen them, there is a copy
18 of our comment letter out there. In my early
19 comments I mentioned, you know, the first four
20 groups of sites that were removing, we are fine with
21 those. So I am going to limit my comments just to
22 the high-salt waste, which is the plutonium sites
23 and the cesium sites, and tell you what our
24 perspective is.

25 Before I do that, I should say that we are

1 very pleased that through this four-and-a-half-year
2 process that we have been involved with in
3 commenting and reviewing these documents and as they
4 brought them out to the public, they have made some
5 dramatic changes. We are really pleased with the
6 distance that the tri-parties have come in our view
7 in terms of what they are proposing to do. A couple
8 of these areas though we are still a little
9 uncomfortable.

10 Our position on the cesium sites, I think,
11 is probably going to surprise you because our
12 position is that we are willing to accept the cesium
13 to stay in there. And the reason that we are doing
14 that is really to be consistent with our technical
15 analysis is, and that is the chemistry in the soil
16 and how contaminates move or don't move within the
17 soil at Hanford.

18 So the operative reason, or the same
19 consistent reason, if you will, our perspective is
20 from Oregon's perspective is the soil chemistry at
21 Hanford can allow certain forms of plutonium to
22 move. So we have concerns about the high-salt waste
23 group I will talk about in a second.

24 With cesium the soil chemistry is such
25 that that cesium does not move. We are very

1 confident that the cesium does not bind, and so we
2 are willing to accept the proposal to leave it in
3 place to allow the cesium to decay so long, as JD
4 mentioned, that the Department of Energy can
5 guarantee a presence on the surface to protect those
6 sites to allow that there is not fertilizers, for
7 example, that go on there because they can
8 remobilize the cesium. That is what our position on
9 the cesium is.

10 On the high-salt waste sites, we are very
11 concerned about excavating just two feet further.
12 There doesn't appear to be any real rational basis
13 for that in our view. We can't find it in the
14 documents. It isn't you will get 85 percent of the
15 plutonium out with two feet. We don't know what the
16 percentage is.

17 And what we are recommending is the
18 observational approach it is called where you begin
19 to dig your sampling as you go. If you still have a
20 lot of plutonium, you keep digging. If you run out
21 in two feet, in five feet, in ten feet or 20 feet,
22 wherever it might be, that is where you stop. You
23 don't just arbitrarily pick two feet.

24 So that is the State of Oregon's
25 perspective. I hope you will take a look at our

1 letter and that will help you in determining all
2 this.

3 So I am sorry we are running late in terms
4 of our schedule. We have got a lot of folks that
5 joined us since we did our opening comments. We
6 last want to hear from a local perspective, which is
7 going to be shared by Columbia River Keeper, Dan
8 Sherrer, and Gerry Pollet of Hearts of America
9 Northwest, and we will try to clarify and answer any
10 questions that we might have confused you about so
11 far.

12 So, Dan, thank you.

13 **MR. SHERRER:** First thing I want to say,
14 if anyone hasn't found our handout yet, we have sort
15 of talking points and information about this, this
16 process on our table over there. So raise your
17 hands if you don't have one, if you want one, and we
18 have got folks that will go around and give it to
19 you. They also help give you information on how to
20 comment formally online.

21 Columbia River Keeper has a pretty starkly
22 different view of what is a protective approach
23 particularly for the plutonium issues. We disagree
24 with both Department of Energy and the Environmental
25 Protection Agency about whether leaving a large

1 amount of plutonium in the ground is protective of
2 the public and the environment in the long term.

3 Plutonium has a half life of 24,000 years.
4 That is a pretty difficult place to start from when
5 you are talking about leaving large volumes of this
6 in the ground. We are not -- our position is not
7 controversial. In fact it is the consensus from a
8 broad range of regional interest that this approach
9 is not acceptable.

10 The Hanford advisory board, which includes
11 government agencies, tribes, conservation groups,
12 watchdog groups like Gerry from Hearts of America
13 Northwest. The consensus conclusion is that the
14 Department of Energy needs to get as much plutonium
15 out of the ground as possible. Stopping at two
16 feet, which would leave an estimated 50 percent of
17 the plutonium in some of these sites, is simply not
18 adequate.

19 The assumption that this would work, that
20 leaving this plutonium in the ground, would be
21 protective rests on a few key elements, many of
22 which we think are flawed.

23 First of all, plutonium will not move.
24 That is the first assumption. That rests on the
25 idea that plutonium will not be mobile, that the

1 geology of the area is stable. We are talking
2 geologic time here. A half life of 24,000 years,
3 roughly you think ten half lives that is mostly
4 gone. That is 240,000 years.

5 That the caps will be effective, that is
6 another big assumption. That the engineered
7 evapotranspiration barriers will work over this time
8 frame, another big assumption, and, you know,
9 essentially that, you know, the funding, the effort,
10 to keep this site off limits will be stable for the
11 length of time that this stuff will be dangerous.

12 So we talking about material in the soil
13 that is going to be dangerous for tens of thousands
14 of years, and that is, to us, the crux of the issue
15 in terms of plutonium.

16 The idea that there will be continuous
17 presence on this site to protect the central
18 plateau, it just doesn't add up. When you think
19 about 14,000 years ago, the Mazola floods were
20 breaking through the Columbia basin, huge walls of
21 water repeatedly sweeping through this area.

22 From the River Keeper's perspective, we
23 are aware that the Columbia river has a turbulent
24 geologic history. You know, just a couple weeks ago
25 we were paddling down along the White Bluffs. Those

1 bluffs contain all kinds of fossils that you would
2 never imagine would be in these places. So we have
3 to think on a different time scale than we are
4 talking about tonight.

5 I am going to give this to Gerry in just a
6 second here, but fundamentally the idea that
7 plutonium is going to be stable is unreasonable.

8 At the state of the site meetings, we
9 heard from Department of Energy a sentiment that we
10 really agree with, and that was cleanup is not
11 discretionary. This is not something we get to choose
12 whether to do or not. This is a moral
13 responsibility that was conferred about our
14 generation by decisions that were made long ago to
15 go and produce large amounts of plutonium.

16 We would go a step further and say
17 thorough, effective cleanup is not discretionary.
18 Leaving large amounts of plutonium in the ground at
19 these high-salt waste sites is just simply not going
20 to work.

21 The alternative range, part of the reason
22 that they come to the conclusion that it is too
23 expensive to go further is that there is a big gap
24 between going two feet and the next alternative is
25 to go many dozens of feet below that. And so, like

1 Ken pointed out, does going 10 feet get you 90
2 percent? Does going 13 get you 95 percent? Then
3 that is probably worth it. We don't have that
4 information. It is not disclosed in the plan. And
5 so we need more from the Department of Energy to
6 justify leaving any of this in the ground.

7 I will sort of close by saying that we
8 have given input before on this issue. The Hanford
9 advisory board, many people in the public have
10 repeatedly argued for thorough cleanup. We will do
11 it again if we have to, but we are asking DOE to
12 pull this back and take a harder look at the
13 plutonium.

14 And I want to pitch it to Gerry. He is
15 going to talk about some of the other troubling
16 aspects of this.

17 **MR. POLLET:** Gerry Pollet with Hearts of
18 America Northwest.

19 I want to thank you all for coming
20 tonight. It is really important that you are here.
21 Without your voice this would not be a cleanup. It
22 would be a coverup, as you heard. Coverup of 15
23 feet of dirt and walk away. So it is really
24 important you are here.

25 Just how much plutonium there is in the

1 soil in the central plateau sites, 562 kilograms in
2 the sites we are talking about tonight. That is
3 their estimate. It is actually not a very firm
4 estimate. That is enough plutonium to make 70
5 nuclear bombs. When we are done there is still
6 going to be dozens of nuclear bombs' worth of
7 plutonium in the soil if we don't require them to
8 clean it up.

9 But it is not just plutonium. It is the
10 cesium. It is vast amounts of chemicals. You heard
11 about soil vapor extraction. Sounds great, but the
12 thing here is that is like sipping -- using a straw
13 to try to clean up the Columbia River, because if
14 you don't get the stuff out of the dirt, the stuff
15 that's mobilized into the gas vapor is miniscule
16 compared to what is in the dirt.

17 We are going to skip over repeat slides
18 here.

19 Here is a picture of the Z-9 trench. Just
20 to give you a sense of the size of this, that
21 concrete cover over that trench is 120 feet wide.
22 There is enormous amounts of plutonium in here, and
23 the plutonium in 1979, the last time they did any
24 sampling, was 120 feet below the site, and they are
25 only going to dig out two feet below it.

1 And massive amounts of powerful solids.
2 These solvents were chosen to be used in plutonium
3 processing operations. Because why? They were damn
4 good at mobilizing plutonium.

5 And the other thing to bear in mind about
6 the Energy Department's promises to be there
7 forever, the Energy Department was dumping these
8 untreated liquid wastes straight into the soil as
9 late as 1995, not very long ago. It was illegal to
10 dump untreated liquid waste 20 years before that,
11 and they kept doing it. They were not good
12 stewards, and the idea of trusting them when their
13 budget priorities to make more nuclear waste and
14 more nuclear weapons and to send the waste care to
15 be buried at a national radioactive waste dump is
16 not something I would like to bet our children's
17 future on.

18 This trench is about two miles long, these
19 trenches. In 1959 this is where they tested. Now,
20 you heard this CERCLA process. We do a remedial
21 investigation. We would like to know where the heck
22 that investigation was, EPA, State of Washington,
23 Energy Department, because what they looked for in
24 1959 was whether or not they put so much plutonium
25 into the ground that they would have a self-

1 sustaining nuclear reaction, and 1979 they looked
2 again, but they were only looking for plutonium.
3 They weren't looking at the chemicals. They didn't
4 care what chemicals they put in the ground back
5 then. They were continuing to dump liquid waste
6 without treating it into these trenches for another
7 16 years.

8 And so here is what they did in the last
9 decade. One spot, a spot, a bore hole. That was
10 that. On that basis we should say the waste
11 contaminants haven't moved since 1979. Not
12 reliable, and we believe the same thing is true in
13 terms of old waste sites. They need to be dug up,
14 not put under 15 feet of dirt.

15 How many of you have stood at the edge of
16 a large construction site for an office building and
17 looked down into the pit? Everyone here has done,
18 that, looked down into the pit 40, 50, 60, sometimes
19 a hundred feet deep. So you know you can excavate a
20 hundred feet. It is not that costly. It ain't
21 rocket science. You can do it. So what's the
22 problem?

23 The problem is the Energy Department is
24 under a rule that says you are supposed to send
25 plutonium to a deep underground repository. There

1 is only one. It is a salt mine in New Mexico, and
2 it is going to run out of room if they sent all the
3 plutonium there. So it is expensive. They say
4 maybe we will blend the average over a large area,
5 and we will send it to the SuperFund cleanup site in
6 the middle of Hanford, but it is still plutonium,
7 and it should go to a deep underground repository.

8 **MR. NILES:** Gerry can I get you to wrap
9 up, please.

10 **MR. POLLET:** Just a few slides.

11 This is the Energy Department's proposal
12 for the cleanup standard on the central plateau for
13 plutonium. 2,900 picocuries per gram. This is what
14 they are being required to cleanup to in California
15 at Lawrence Livermore National Lab, two and a half
16 and ten, a thousand times greater level of
17 plutonium.

18 So even along the Columbia River this is the
19 level that EPA required them to clean up plutonium
20 to. If you use 2,900, you look underneath the
21 pipeline or a trench, and you say: "We don't need
22 to dig up any further. We are at our cleanup
23 standard."

24 So what we are suggesting in the way of
25 comments, insist that these sites be dug up. It

1 ain't rocket science. It is a cleanup, not a
2 coverup.

3 Secondly, the plutonium that is dug up
4 needs to go to a deep underground repository, not
5 put back into surface landfill.

6 Thirdly, don't ignore the fact that the
7 plutonium has already spread, and in fact the irony
8 of this cleanup plan is that the most -- the site
9 with the most mobile plutonium is the one where they
10 only want to dig up two feet instead of going after
11 the deeper plutonium that the solvents have already
12 mobilized and headed towards the groundwater. And
13 urge them to adopt a cleanup standard for plutonium
14 that's similar to the one used in California or at
15 least the one used along the Columbia River except
16 we actually have to clean up and leave.

17 Thank you very much for coming here.
18 Please remember to give comments on the record when
19 they open up the record to take comments, and use
20 our facts sheets from both organizations to mail in
21 more comments. Share our E-mails with all your
22 friends on Facebook and ask them to send in
23 comments.

24 Thank you.

25 **MR. NILES:** All right. Thank you to all

1 of our speakers.

2 We want to take a few minutes if there are
3 some questions that came up in terms of needing
4 clarification. We are still going to have the
5 comment period. So I would like to really
6 distinguish questions versus comments.

7 All of this I should mention is being
8 recorded by our court reporter. So we are going to
9 ask you to raise your hands for the Q and A so we
10 can get a microphone to you and make sure she can
11 hear you.

12 And Sonya you are going to be running the
13 microphone around?

14 **MS. JOHNSON:** I am.

15 **MR. NILES:** We will have that to you in
16 just a minute. And then once we start the public
17 comment, we are going to put a microphone on the
18 stand so people can come up and do that.

19 So questions, if there is some
20 clarification needed, and we have got quite a few.

21 **FEMALE SPEAKER:** My question is to the
22 gentleman that was talking about the trenches, and
23 he said there was this trench and that trench, and
24 then there was in kind of sort of trench.

25 So could you be more specific about the

1 kind of sort trench.

2 **MR. DOWELL:** The point of the comment I
3 was making about the trenches, cribs, structures
4 that used to dump this material is that there is no
5 standardized way that they did it. And if you look
6 at the placards back there, you can see a couple of
7 the examples on what a crib is versus a trench.

8 Some of these trenches were just furrowed
9 into the ground. Like think of a farmer going there
10 and making a furrow and make it put water in it.

11 Others were engineered like a French drain
12 system similar to a septic field where you had a
13 perforated pipe and the material went through that
14 and then it got dispersed into a field of gravel so
15 it disbursed into the ground.

16 So I am not trying to make a big shell
17 game about, you know, a trench or a crib or the
18 different types of trenches. The point is that is a
19 very rudimentary geometry that these in.

20 Do you a comment, Dennis?

21 **MR. FALK:** Well, I think the specific
22 question, JD, is unplanned release. You were
23 talking about the waste site that wasn't the
24 unplanned release.

25 **MR. DOWELL:** The unplanned release site on

1 200 CW-5, which was the first site I talked about.
2 I know memory won't serve. This kind of gets
3 confused if we talk about it a lot.

4 That site, which is the one that Gerry
5 showed up that shows you two miles of trenches,
6 those are very rudimentary trenches. Some of them
7 were engineered a little bit differently, but they
8 are all basically the same. They are just basically
9 trenches in the ground with a gravel liner on the
10 bottom to disburse that material into the ground as
11 efficiently as possible.

12 So when we talked about the unplanned
13 area, what they did is they were going out to dig
14 another trench, realized they were too close to an
15 existing trench; ended up using that trench a little
16 but ended up calling it an indeterminate area like
17 that because they didn't have anything else to call
18 it at the time. It is known as a graph. We know
19 where it is.

20 **FEMALE SPEAKER:** So they just jumped it
21 without anything; is that right?

22 **MR. DOWELL:** Correct. Well, they were
23 trying to create a trench there, and then they used
24 it, then didn't fill it in. They felt they were too
25 close to the other one. So that kind of gives you

1 an idea what those 200 CW-5 areas are.

2 Now, the areas that Gerry did show you,
3 the large trench two miles, that area is going to be
4 RTD, remove, treat and dispose. We are not leaving
5 any of that material in the ground in 200 CW-5, and
6 we are going to treat it according to the normal
7 methods we that use. We will go down to the levels
8 where we retrieve that material and make determinate
9 studies that we sample and retrieve that material to
10 make sure we are getting it.

11 **FEMALE SPEAKER:** I thought, all these
12 meetings we went to, I thought all of that stuff was
13 supposed to be vitrification. It was supposed to be
14 turned into glass so you can ship it off somewhere
15 else.

16 **MR. DOWELL:** Yeah. I mean I will give you
17 some background on that. It might be a little
18 confusing. So bear with me.

19 The sites that we are talking about
20 tonight are burial sites. So there were places
21 where they took process water and cooling water and
22 just dumped into the ground. The sites that you are
23 talking about is the tank farms, which will hold
24 about 53 million gallons of water of mixed waste
25 right now. And also all the water has actually been

1 pulled out of those tanks. So they are really
2 stabilized now. But those tanks are all the material
3 that is going to be vitrified by the large waste
4 treatment plant that is being built to vitrify the
5 waste with a high level of waste going to a
6 repository to be determined.

7 You know, we can call it Yucca, but I am
8 not sure what it is going to be. It is going to be
9 a repository somewhere. And that is where all true
10 waste will go. So if we find true waste and it goes
11 to a repository, WIPP. WIPP has got the capacity
12 that they haven't even determined yet, and I can't
13 talk too much about WIPP, but WIPP doesn't have a
14 limited capacity. It has got a capacity today, but
15 if we don't find alternatives the Blue Ribbon
16 Council that is designed to do that by President
17 Obama, it is going to -- I think the draft comes out
18 this week, as a matter of fact.

19 They are talking about the options for a
20 long-term repository for not only commercial nuclear
21 energy but our true transient long-term waste as
22 well. So not to confuse everyone, but that waste is
23 going to go get vitrified that is coming out of
24 those tanks, not out of the ground.

25 **MR. NILES:** We have a lot of other

1 questions, and if we are going to need to -- if we
2 can't make the question and answer concise -- I know
3 it is difficult and it is convoluted.

4 **MALE SPEAKER:** You referred to remove,
5 treat and dispose. I would like to hear more about
6 what that appropriate disposal is.

7 Also, I am assuming in the treatment
8 process that that is -- I don't know if you could
9 briefly mention that. I am assuming it is not going
10 to be toxic intervals involved in that process.

11 And also it seems relevant to this issue
12 that I have been hearing about a proposal for vast
13 amounts of more waste from other sites, both
14 existing processing from nuclear power plants and
15 waste from proposed plants in the future equaling to
16 what I have heard to be four semi trucks a day every
17 day for the next 20 years to be shipped to Hanford
18 and how this is going to be planned to be disposed
19 of in the appropriate disposal.

20 What is this appropriate disposal methods
21 that you are talking about?

22 **MR. DOWELL:** Well, I will talk quickly to
23 the first question, RTD.

24 For remove, treat and dispose, the dispose
25 either goes to a long-term repository like WIPP,

1 waste isolation pilot plant in New Mexico.

2 **MALE SPEAKER:** Or shipped to Texas?

3 **MR. DOWELL:** Or Yucca, if Yucca ever
4 opens, or something like Yucca if they find
5 something in Texas or somewhere else. There is a
6 lot of things the Blue Ribbon Council is looking at.
7 So if it reaches the threshold of true, that's where
8 it goes. It doesn't stay in the State of Washington
9 unless it is interim until a repository is
10 available. I can almost tell right now that once
11 the waste treatment plant starts making glass, we
12 are going to have to hold the waste here until we
13 find a repository.

14 The material comes out of the ground that
15 we find if it hits the threshold of true, it goes to
16 WIPP. And the processing we are talking about is
17 the separation process. It is not chemical. It is
18 mechanical. We do it with a, you know, radiography,
19 basically X-rays that look at the material, or we do
20 it with sourdine. There is different mechanisms of
21 sourdine material that comes out of the ground, and
22 right now I don't know if any chemical process we
23 are using. There is none that we know off.

24 **MR. NILES:** But in terms of treatment,
25 there could be thermal treatment, if there is a

1 chemical. There could be grouting to solidify it.

2 I mean there are other mechanisms.

3 **MR. DOWELL:** Right. What we do do is
4 stabilize so it can go to burial. We can grout it.
5 We can thermally treat it to extract some of the
6 materials that will vapor, but, again, those are all
7 controlled. It is not released in the environment.
8 We are not creating more of a mess by cleaning up
9 the mess. I guess that is the general gist of our
10 strategy on that.

11 **MR. NILES:** Last question.

12 **MALE SPEAKER:** So the high-level waste
13 that you are proposing bringing in, so you are just
14 going to --

15 **MR. DOWELL:** He is going to answer that
16 one.

17 **MR. NILES:** We are going to --

18 **MALE SPEAKER:** Let me just -- okay. Just
19 because --

20 **MR. NILES:** You know, we can off in our
21 discussion on all kinds of topics, and that's fine.

22 **MALE SPEAKER:** Appropriate disposal. That
23 point was brought up.

24 **MR. NILES:** There was a proposal by the
25 U.S. Department of Energy to look at Hanford as one

1 of several different sites for disposal of what is
2 called class C waste, which generally highly
3 radioactive waste. There was a public hearing in
4 Portland two months or so ago about that. It drew a
5 great crowd. There was about 190 people that came
6 and spoke out against that.

7 That is not a decision that is going to be
8 made by the folks in this room at the Hanford level.

9 **MALE SPEAKER:** But I was asking what you
10 are proposing. What is the appropriate disposal
11 method?

12 **MR. NILES:** They are not proposing to
13 dispose any of that at the local level. That is a
14 national decision to be made.

15 **MALE SPEAKER:** But there is a proposal to
16 bring all this high-level nuclear waste to Hanford
17 for appropriate disposal but there is not
18 appropriate disposal method yet. The only
19 appropriate disposal method is to send it to New
20 Mexico, correct?

21 **MR. NILES:** There is a possibility that
22 Hanford could be selected. There is not a proposal

23 --

24 **MALE SPEAKER:** For appropriate disposal.
25 I was asking: What is the appropriate disposal

1 method? Can we address that?

2 **MR. NILES:** I will tell you the disposal
3 method they are proposing at Hanford is not the
4 proper disposal. We don't support that. We oppose
5 that.

6 **MALE SPEAKER:** What is appropriate for
7 landfill?

8 **MR. FALK:** I am Dennis Falk from EPA.

9 The appropriate disposal for this waste
10 stream, the majority of this waste stream, is to
11 send it to the waste isolation pilot plant in New
12 Mexico. There will be hundreds of shipments if we
13 retrieve this material. So it will be traveling.
14 That is the preferred place for this waste stream.

15 **MALE SPEAKER:** So send it to New Mexico?

16 **MR. NILES:** For geologic disposal.

17 **MALE SPEAKER:** Okay. I was just trying to
18 clarify that, that there is no on-site Hanford
19 appropriate waste disposal method. So DOE, who is
20 represented here, is proposing bringing high-level
21 nuclear waste to Hanford, and they have no
22 appropriate disposal method.

23 Thank you for answering my question. Next
24 question, please.

25 **MR. NILES:** Do we have more questions? I

1 know we had some hands.

2 **FEMALE SPEAKER:** Hi. I am Melissa Still.

3 I live in Washington. My question is: There is a
4 barrier layer beneath these tanks that was discussed
5 earlier with DOE, and it was very educational. I
6 appreciate your time.

7 My question is: Have there been core samples
8 taken of that barrier and how it reacts to the waste
9 itself and if it is a stable environment as far as
10 that is concerned, and if there is ever an
11 earthquake -- I mean we do live right next to Mt.
12 Hood, and it is a very dynamic situation here -- and
13 how that would affect the tanks at large?

14 **MR. DOWELL:** Okay. Let me peel back those
15 questions one at a time.

16 The first one, and we are talking about, I
17 think, something that was brought as common theme on
18 the high-salt material and the extent and condition
19 of that salt material. This is the area where we
20 are taking two feet, and that was based on
21 recommendations made earlier when we went public two
22 years ago.

23 And when we talk about that material, if
24 you look at the graph back there of the Z-9 area,
25 the Z being the Z plant. It is the one far right

1 next to the trench area.

2 **(Brief interruption)**

3 **MR. DOWELL:** The plutonium has -- when
4 that plutonium was processed, it was processed with
5 carbon tetrachloride. It was in a form of aqueous
6 and nonaqueous, very low PH, very acidic, and we
7 know that when plutonium is in that form it is
8 mobile, no argument, no argument when plutonium is
9 in an acid base of about 2.4 to 2.6. The basic
10 geology of ground PH in that area is about 8.

11 So we found that when that material was
12 released and processed for decades, okay, it was in
13 a perfect form for mobility at that time. And when
14 I say that that material is stable, I am not saying
15 it doesn't move. I am saying it is stable. The
16 definition of stable is that by what we know today
17 by the process of how we will model and what we
18 sampled.

19 And what we continued to sample, that
20 material is not moving and our assessment by
21 modeling, and it goes to this extent and it doesn't
22 go past it, is that for the central plateau the
23 plutonium will not move from its current condition
24 for 10,000 years, for at least 10,000 years.

25 That is what I mean by stable. That is

1 the state of the art modeling that we use. If you
2 guys know something more, something better -- it is
3 not our model. It P and L that is assisting us with
4 this. It is an independent research group. I know
5 t three studies right now that are looking at
6 plutonium mobility. If we get new information on
7 plutonium mobility that says we are wrong, guess
8 what. We are going to revisit that decision, and we
9 are going to have to go back to it say that the
10 effectiveness of the decision we made is not as
11 effective as it should be. If we have signs that
12 plutonium is moving and getting into the water, we
13 will go back and remediate that. That is the
14 commitment we have by law. So that is all I can say
15 about it. I mean it might not be the answer, and I
16 don't know how far you want me to go on this because
17 I can show the graph of where we think the plutonium
18 is. We have some great slides, but we got a lot of
19 questions.

20 **MR. NILES:** We are way, way behind.

21 **MR. DOWELL:** All right. So the second
22 part of your question.

23 **FEMALE SPEAKER:** Earthquake. Did your
24 model include seismic activity?

25 **MR. DOWELL:** Good question.

1 **MR. FALK:** No.

2 **MR. DOWELL:** It does not include -- yes,
3 it does not. It does not include seismic activity
4 and flood.

5 **FEMALE SPEAKER:** So then that is not a
6 realistic model, in other words. It can't be
7 because it doesn't include potential seismic
8 activity.

9 **MR. DOWELL:** Well, the model that is based
10 on the mobility of the plutonium, so --

11 **FEMALE SPEAKER:** But it is buried in a
12 seismically active area.

13 **MR. DOWELL:** Okay. Well, this gets very
14 complicated because I am very familiar with seismic
15 activity in the Hanford site, and it gets very
16 complicated very quickly because, you know, seismic
17 activity in the Hanford site is not the seismic
18 activity of the western side of the cascade
19 corridor.

20 The seismic activity here in Hood River
21 and across the plate leafing out through Seattle,
22 that tectonic plate is much more active than ours
23 is. We have a lot of micro earthquakes, a lot of
24 activity there, but it is not the same kind of
25 activity, much smaller. We are on a plate out

1 there.

2 So when we are talking about seismic
3 stability, the bottom line is that model does not
4 look at seismic stability. It looks like mobility
5 of plutonium.

6 **FEMALE SPEAKER:** So what about the Rowena
7 instability on the Rowena plateau?

8 **MR. DOWELL:** You are getting past the
9 extent of my knowledge.

10 **FEMALE SPEAKER:** This is the crux of the
11 matter that we have to get realistic about what you
12 are modeling because if you are modeling something
13 that is not based on the realities of our
14 geographical area -- and I am not talking about Mt.
15 Hood here -- then the models cannot model
16 accurately.

17 **MR. DOWELL:** I will just say that please
18 make the comment. We will look at it closely and
19 see if we need to improve that model and assess the
20 seismic risk or how we will remediate the site.

21 **MR. NILES:** A lot of questions here.

22 **MR. POLLET:** When I look at what you are
23 talking about, like the inadvertent sort of ditch
24 that occurred and the four sites clearly
25 characterized by what waste was dumped in there

1 based on solely historic data, I am not seeing any
2 presentation regarding sampling in the sites
3 themselves for potential cross contaminates, yet I
4 am seeing this great assumption about PH 8 and 9
5 soils being lopped on to historic data for what went
6 into those sites.

7 Why am I not seeing sampling data,
8 scientific chemical sampling data from those sites
9 telling me what is in them by depth? Does that data
10 not exist at all?

11 **MR. DOWELL:** Okay. Let me talk about --
12 again, we are going back to the high-salt waste
13 group. I assume that is the focal point of the
14 sampling discussion.

15 When we look at the Z-9 trench, which
16 arguably is one of the worst areas, Z-9 is a Z-1A
17 tile trench. Z-9 is the picture that Gerry showed
18 you, that encapsulated area underneath, 100 feet
19 long and nasty looking area.

20 We actually extracted 30 centimeters of
21 that material in the '70s. That was based on
22 extracting some of the material because of a
23 perceived criticality risk. We realized that there
24 is no criticality risk, but there is data that we
25 have been using, and it is more resent than that. I

1 have got a quick summary, but it will give you an
2 idea of what we have got.

3 The bore holes, and bore holes are
4 basically wells that stop in the ground at a certain
5 depth to basically determine what the soil column is
6 contaminated with. Between 1992 and 2001 we had
7 nine deep, deep bore holes with samples. We had two
8 deep bore holes in 2005 to 2006 with samples. In
9 down hole logs we had 44 simulation logs and 13
10 wells between 1959 and 1998 and 13 spectral GaMo
11 logs from 10 wells in 1992 and 2006.

12 When I say logs, it just means we took the
13 material out and we used a simulation detector to
14 determine the condition of the radionuclides that
15 existed in those samples.

16 So these sites -- I mean the only reason I
17 can bring to you a preferred alternative is because
18 we feel and are confident that we have enough
19 information on these sites to make decisions. So we
20 wouldn't be here unless we felt we could
21 characterize them well enough.

22 **MR. POLLET:** Where is that data that you
23 were just citing? We have been looking for it.

24 **MALE SPEAKER:** Why isn't that data here?

25 **MR. DOWELL:** It is public.

1 **MALE SPEAKER:** You are asking us to go
2 along with your decision-making process, yet we
3 don't see the basic chemical information with that
4 data being posted here, but we see a bunch of
5 diagrams.

6 I think for scientific decision we need
7 that data. We need to come back and have another
8 meeting with that data is what I am thinking.

9 **MR. DOWELL:** I appreciate the comment. We
10 have got the data. It is publicly available.

11 **FEMALE SPEAKER:** Where can we find it?

12 **MR. DOWELL:** Well, I will tell you what --

13 **MR. FALK:** It is referenced in the RIFS.

14 **MR. POLLET:** Well, the RIFS, I want to
15 point out, was not linked to your document that you
16 sent to the public. And searching for it, as we
17 have mentioned, took people who know the site's
18 administrative record over a week to try to find it.
19 So it is not -- publicly available is not the same
20 as being available to the public.

21 **MR. DOWELL:** But, no, Gerry, both of you
22 bring up a good point, and that point is that the
23 data has to be accessible to the public. And when I
24 say accessible it has to be logical and easy to
25 find.

1 The link has been repaired. Paula is
2 nodding her head saying the link is there.

3 I have got a summary table made for me
4 between the last time we did this and this time, and
5 I want to share information with you. I am not
6 trying to hide anything. So I don't know if we can
7 -- I only want to give you stuff that is valid. I am
8 not sure I want to release this tonight.

9 But your point is well taken. The data
10 should be available, and it should be clear. It
11 should be transparent how we are making decisions.
12 So I am with you on that. I will work on it. So
13 please make the comment, and we will try and get
14 that information out.

15 **MR. POLLET:** Well, let me just say, JD,
16 and I appreciate that commitment, but it is really
17 late in the comment period already. We have two law
18 student interns and two expert volunteers who are
19 hydrogeologists trying to look through this data and
20 been unable to find it, and then if we get it this
21 week we have got a week to the comment period.

22 It seems to me the obligation should be
23 that you should have had it available, should have
24 been clearly presented first off in the proposed
25 plan, not in some other document.

1 And, secondly, you need to extend the
2 comment period for people to actually access stuff
3 for as long as it has been that we have not been
4 able to access it.

5 **MR. DOWELL:** We will evaluate the comment.

6 The material and information was available
7 in the remedial investigation feasibility study, and
8 the link -- you know, we need to determine whether
9 the link was broken and make an assessment of that.

10 But I hear what you are saying, Gerry. So
11 we will look at it, and if it is fair we will make
12 the right decision on that. The information is
13 there.

14 But, again, when I think of accessibility,
15 you know, I have been working on this for four
16 months now, and I am getting it now. Okay. So I
17 think we can make that easier. So, again, we will
18 see what we can do.

19 Thank you.

20 **MR. FALK:** Gerry, one other thing, if you
21 would make that a formal public comment about
22 extending the formal comment period, I think we will
23 be amenable to that.

24 **MR. POLLET:** Thank you very much.

25 **MR. NILES:** All right. So how many more

1 folks still have questions before we have comments?

2 We have got at least three.

3 **MALE SPEAKER:** I appreciate your talking
4 about four months. I have been working on this for
5 over 25 years. I have been trying to get a site
6 visit. I think it is essential that members of the
7 public who own this property, this mess, be there.

8 We can't get there because every time we
9 get on the site visit the tours are filled up, and
10 you have to put your name on a tour three, four
11 months ahead of time. I don't know what I am doing
12 that time.

13 And so I think all the agencies really
14 have to work a lot better to allow citizens to get
15 out there, first question or point.

16 Second one is: I would like to know what
17 percentage this proposal is of all the underground
18 stuff that's there like the solid waste in trenches.
19 Is this the precursor of the next proposal about how
20 contaminated solid waste would be handled? I would
21 like to know what percentage is this of anything
22 that is in trenches and buried out there.

23 **MR. DOWELL:** I can give you an example of
24 the Z-1A trench, which is the high-salt area, to
25 show you what we think is the footprint for that

1 material. It is a rough scale.

2 And let me just put that up. I think it
3 will kind of give you an idea of what two feet is.

4 **MR. NILES:** I think what he is trying to
5 say is: Of these 21 waste sites, what percentage of
6 the whole Hanford mass. Is that --

7 **MALE SPEAKER:** Not the liquid stuff
8 because we have been going on for that for a number
9 of years.

10 **MR. NILES:** But the burial.

11 **MALE SPEAKER:** But the buried stuff, the
12 other contaminated buried stuff, what percentage --

13 **MR. DOWELL:** The other sites.

14 **MALE REPRESENTATIVE:** These sites were
15 selected as a priority because they contain the far
16 majority of the plutonium that is not in the burial
17 ground, and so you only have two very large
18 plutonium sources at the Hanford site that have been
19 released into the environment. That is solid waste,
20 and that was disposed of as liquid waste, and these,
21 because of public concern, have been elevated, and
22 those are being done first.

23 When those two sets of decisions are made,
24 that will disposition the far majority of the
25 plutonium that has been released in the environment

1 at the Hanford site.

2 Do you agree with that, Dennis?

3 **MR. FALK:** Maybe I will just follow on
4 this a little. Dennis Falk from the Environmental
5 Protection Agency.

6 So, in general we think of these liquid
7 waste disposal sites for plutonium, they contain
8 about half of the plutonium that is disposed of in,
9 I will call it, historic times. The other half of
10 that is in the solid waste burial grounds which will
11 be a decision we make in a few years.

12 The other major contaminate in the solid
13 waste burial grounds that we are very concerned
14 about is uranium. We have hundreds and hundreds
15 kilograms of uranium out there.

16 So, again, in the scheme of things, it is
17 about 50 percent of the historic plutonium we are
18 talking about tonight. We will be talking a lot
19 about the rest of the plutonium and, again, uranium
20 in a future discussion.

21 **MALE SPEAKER:** Thank you. Can you get
22 back to us on when we can visit the site? Can
23 somebody from EPA or DOE? Not tonight.

24 **FEMALE REPRESENTATIVE:** I can talk to you
25 after the meeting.

1 **MALE SPEAKER:** Well, but I think everybody
2 should hear that.

3 **FEMALE REPRESENTATIVE:** There is a public
4 tours program. It opens up every year on a
5 reservation level.

6 **MALE SPEAKER:** But it is not working. My
7 wife and I have been trying to do that for two
8 years. We can't get there. It is not working.

9 **FEMALE REPRESENTATIVE:** I understand there
10 is a huge demand. We are trying to increase the
11 capacity. It is a balance between, you know,
12 spending money on cleanup and spending money on
13 public tours.

14 We have increased the capacity to provide
15 6,000 visits a year. So it has gone up from a few
16 hundred to 6,000. It is going up slowly.

17 If I can get your name after the meeting,
18 maybe I can give you tips on how to get on that.

19 **MR. DOWELL:** Paula, can you explain what
20 they tour when they go out.

21 **FEMALE REPRESENTATIVE:** Well, the tour
22 takes you around the entire site. So you see the
23 old reactors. You see the cleanup as it is
24 happening, and then you see the cleanup that has
25 been completed. There is tour guides at each stop.

1 They talk about groundwater. They talk about
2 building this demolition. They talk about long-term
3 stewardship.

4 So it is a good look at what is going on,
5 what has happened in the past and happening now. It
6 also talks about the challenges because there is a
7 lot of challenges we have out there.

8 **MR. NILES:** Okay. I think we have two
9 remaining questions.

10 **MALE REPRESENTATIVE:** I was just going to
11 address one of those questions.

12 So there is the Hanford advisory board
13 which includes representatives from Oregon, activist
14 organizations, local and federal officials and
15 public interest groups. And they are seeded by
16 different organizations so that those
17 representatives go back and they tell their
18 constituents about this information.

19 We have been involved in this feasibility
20 study, and what we are really talking about are:

21 These are the two summary reports for the
22 feasibility studies which says: Okay. We know
23 there is a problem. What are the alternatives, and
24 what are the best choices of those alternatives.

25 We had public workshops over the last two

1 years, and we have significantly revised the
2 proposed plan. And, as Ken said, several of the
3 proposals now the State of Oregon says "we fully
4 endorse" or something similar to that.

5 But the remedial investigation information
6 that came out, it came out five years ago. This
7 information has been available, and they are very
8 similar reports to this, and this is the text. The
9 data is actually on a DVD in the back of the report.
10 There is thousands and thousands of data points to
11 discuss these different sites.

12 People ask: Why do wells cost so much or
13 bore holes cost so much? I can go out to the
14 private sector, and I can drill a well for \$10,000.
15 We drill a well, we have to make sure we don't
16 introduce any mud, any liquids to this, and we
17 basically take a cylinder that is sealed on one end,
18 and most of the high-tech soil representative
19 samples, you take this four-foot cylinder and you
20 pound it into the ground, and you pull it back out
21 and you collect a soil sample, and then you put that
22 cylinder back into the ground.

23 And you can imagine that if you are trying
24 to collect a sample from 250 feet down, you have to
25 disassemble your drill stem every single four feet,

1 and you are collecting the soil sample. In these
2 areas we had 65 contaminates of concern that we
3 targeted specifically. So the analysis on each soil
4 sample literally costs tens of thousands of dollars.
5 And the Z-9 site in particular, we spent almost \$2
6 particular sampling underneath that for one sick
7 string of samples that went all the way down to
8 groundwater.

9 These areas have been extensively sampled.
10 The information has been out there. We started
11 public workshops more than two years ago on this.
12 We are bringing it back up because we have
13 reevaluated our proposals, and we will continue
14 until we get consensus with the tri-public -- or the
15 tri-party agreement.

16 So don't take the misrepresentation or the
17 misunderstanding that there is just a limited number
18 of samples. There is literally thousands of samples
19 related to these sites, and the process has been
20 years in the making.

21 **MR. NILES:** Let's get these last couple
22 questions if we can, and then we will go to public
23 comment.

24 **MALE SPEAKER:** I was curious how far the
25 groundwater is below some of those high-salt areas.

1 And also, secondly -- can I ask a follow-
2 up on that?

3 **MR. NILES:** That sounds like about a
4 three-word answer to that question.

5 **MR. DOWELL:** Well, the answer best is
6 right behind you. You will see those graphs that
7 have the actual scales on site.

8 But, first, the Z-1 area goes down 110
9 feet. It hits a thing called KA Leach layer, which
10 is a compact, dense kind of clay layer, and then it
11 is about another, I think, 225 feet.

12 **MALE REPRESENTATIVE:** Total of 250.

13 **MR. DOWELL:** 250. So it is another 150
14 feet.

15 That is representative of the central
16 plateau. It is in the 250 to 300 foot range. When
17 you get closer to the river, it slopes up when you
18 get closer to the river. So you think of the water
19 column constantly changing.

20 **MALE SPEAKER:** As a follow-up, I am kind
21 of curious. There is some 1979 and 1959 samples
22 referenced. It seems like over the span of like 10
23 or 15 years the plutonium that was immobile and will
24 be there forever, it went down 120 feet in 10 or 15
25 years, and it has been 40 to 45 years since then.

1 So logically it seems if it kept going on at that
2 rate even with that barrier or whatever, maybe that
3 slowed it down a little bit, but it seems like it
4 would have hit the water by now.

5 I am curious like why -- I mean that seems
6 like a really big problem, and it seems like it
7 should be alarming and that essentially if there is
8 that stuff in the groundwater then it should not get
9 in the river. And a lot of us here use the river,
10 kite runners and windsurfers. We love this area,
11 and I am curious, yeah, why you are not digging
12 further down, I guess.

13 **MR. DOWELL:** Got it. I am a river user,
14 too. So I am with you on that.

15 I talked about the samples that I just
16 characterized, the ones for 2002 and 2006. That is
17 the Z-9 area. That is an example where that area is
18 very similar to other high-salt areas. We really
19 characterized that very well, and we got the
20 necessary information to indicate that that plume
21 that is graphically represented on that chart back
22 there characterizes where that plume is today. The
23 motive force that drove it down to that level back
24 in '50s and through processing time that it took no
25 longer exist. That is why our modeling assesses

1 10,000 years and doesn't show that it is moving.

2 Now, that doesn't mean that plutonium is
3 immobile. That is not what I am saying. I am
4 saying that in the central plateau for the plutonium
5 in these sites -- and that is the way we look at it
6 because we look at these sites with each decision --
7 is stable.

8 And, you know, now you get into the thing
9 are you going to be here in 10,000 years and a half
10 life of 240,000 years. Those are all relevant
11 points. It is just that is what we know, and we
12 have to be here as long as that is a risk, and we
13 have to protect human health and the environment.

14 **MR. NILES:** Thank you.

15 There was one or two last questions. Who
16 hasn't had an opportunity? There you go.

17 **MALE SPEAKER:** Just a quick question. I
18 am curious if there is any sampling that has been
19 down lower in the Columbia, say, our area for some
20 of these chemicals. I mean here we are down in this
21 are, and we all use this area we are talking about
22 way up there.

23 **MR. NILES:** Actually, I can answer part of
24 that. Maybe I can answer part of that.

25 The Oregon State Health Department had a

1 monitoring program of the Columbia River in the
2 early 1960s to the early 1990s. When the last
3 single pass reactor in Hanford shut down in 1972 and
4 Hanford was no longer dumping huge amounts of
5 radioactivity into the river, the levels dropped
6 dramatically, and from about 1972 on Oregon Health
7 measured basically zeros in this part of the river.
8 It took a little while to go down.

9 The sensitivity of the equipment is such
10 that it has grown so sensitive, the equipment, that
11 they can really detect to a great level, and you can
12 never find nothing. You can always find a little
13 something.

14 But Oregon Health stopped their
15 environmental monitoring program for radioactive
16 materials in the Columbia River in the 1990s just
17 because they kept getting, in effect, zeros down
18 here from Hanford.

19 There was a confirmatory sampling done
20 about six years ago that was a joint effort between
21 the states of Oregon and Washington and Department
22 of Energy in which Oregon State University analyzed
23 the samples that we took and confirmed again that
24 there really isn't anything down here in terms of
25 radioactive materials from Hanford in this part of

1 the river. It is not to say there is not still
2 small amounts of stuff getting into the river today
3 because there are.

4 **MR. FALK:** Just to follow on, the EPA has
5 a very large program that is looking in the Columbia
6 River called the Columbia River Toxics Program.
7 There are reports out. If you are interested, let
8 Emmy or myself know and we can get you that
9 information. So it is an ongoing program. It shows
10 you all the data that has been collected. Hanford
11 data is included in that report.

12 **MR. DOWELL:** I would add that DOE also
13 does an annual assessment of samples taken in and
14 around the Richland area and Columbia River off-
15 site. So that annually we are determining whether
16 there is a source that gets down river.

17 **MR. NILES:** Does that take care of the Q
18 and A?

19 We have this gentleman here.

20 **MALE SPEAKER:** We heard testimony tonight
21 about how your plan isn't reliable because
22 excavation would stop at two feet or 15 feet.

23 And why not dig as deep as necessary, 100
24 feet or whatever?

25 **MR. DOWELL:** Good question.

1 **MR. NILES:** JD has a little visual help
2 here.

3 **MR. DOWELL:** I want to show you that graph
4 that I was talking about earlier so you have a feel
5 for what we are talking about.

6 Okay. To explain this graph, this is an
7 example of what we think the displacement of
8 plutonium is at various levels in the Z-1A tile
9 field, which is comparable to Z-9. This is a high-
10 salt field, and when you look at this field the
11 bottom of the structure, which is the structure that
12 was used to actually dump the waste, if you will.
13 It is about 18 feet. Two feet takes us to 20 feet
14 of extraction. At 20 feet extraction, we are at 51
15 percent right there (indicating. So 84 percent
16 would be two more feet.

17 If we took 64 feet, it would be about 99
18 percent, and it goes down to about 110 feet before
19 it hits the KA Leach layer and where we don't see
20 any more plutonium and we don't model it and we are
21 continuing to sample it in our groundwater.

22 So your comments, if you have a comment
23 about this, this is what it is based on. You say:
24 Well, why are you stopping at two feet? And the
25 answer -- this gets into a complex concept because I

1 had to change the paradigm I thought about because
2 we are not -- our original remedy, which was
3 completely legal and protected human health and the
4 environment, was to cap this area, put a cap -- take
5 out the structure, put a cap over the remaining
6 area. Call it good.

7 When we went out for public comment, very,
8 very, vocal reply, and to get more material out. It
9 doesn't specifically protect the public. Gerry
10 showed you a slide about the concentration levels
11 taken from Lawrence Livermore, I think it was, or
12 some of the other sites, those are specifically to
13 protect the public.

14 You have to believe that this is an
15 industrial area. The public will not have free
16 access to it because when you looked at his slide
17 and you looked at the right-hand corner, we looked
18 at those levels to protect the worker. We are
19 protecting the worker from this area. I have to
20 protect this area from someone going in with a
21 backhoe and digging it out.

22 It doesn't change the solution or protect
23 you anymore by me taking more material out of here,
24 and I could have capped it. So if you think we
25 should take more material out of it, make the

1 comment, but from the standpoint of specifically
2 protecting human health and the environment, it
3 doesn't protect the human health and the environment
4 any more than a cap would.

5 I had to change my paradigm because it is
6 always good to get the material out of the ground,
7 right? Not if you understand the assumptions we
8 have made, which is that the material is stable in
9 the form it is in, and it is not moving, and by our
10 modeling for the central plateau, 10,000 years right
11 now, and that is the extent of our model.

12 So that is how we came to that decision.
13 Good decision? That is why we are here to take your
14 comments.

15 **MR. NILES:** Which we would like to get to
16 shortly, but we keep getting more questions. So I
17 guess we will keep going with the questions here.

18 **MR. DOWELL:** Tell you what, before I go
19 into another question, can I show you one thing.
20 This kind of gives you a perspective also.

21 Even though in this case when you look at
22 the balance approach of how we made decisions and,
23 you know, long-term and short-term effectiveness
24 really don't factor into this. The reduction of
25 toxicity does factor into it because you reduce the

1 amount of material in the ground. The implement
2 ability factors into it because we are already there
3 taking material out, so somewhat cost effective if
4 you are already there, but then you look at the
5 cost.

6 So really these three elements drive the
7 balance of that decision in this case, and this kind
8 of shows you a scale of what we are talking about,
9 and it gets a little complicated, but if we went
10 down and removed the structure the relative cost is
11 about that. You take two more feet, which is option
12 A -- make sure I get this right. So I don't cross
13 these up. They are easy to cross up. It costs
14 about 110 million dollars. When I go down about, I
15 think it is 18 feet, it jumps to 600 million
16 dollars.

17 So going back to the point I made at the
18 start, if it is not adding value to protect human
19 health and the environment by taking more of that
20 material out because it is stable in the form that
21 it is in, and you have to make that assumption, and
22 we are the long-term custodians of that area, then
23 it doesn't make sense to invest this money here when
24 I can use it to mitigate more active sites in other
25 areas and to use it to prioritize other work that I

1 think is just as important. I think we are talking
2 about 22 sites tonight? How many sites?

3 **MALE REPRESENTATIVE:** 800.

4 **MR. DOWELL:** 800 sites.

5 Now, this is one of the worst sites.

6 Let's go after the bad stuff first. If you think we
7 should take more, make the comment.

8 **MR. NILES:** Other questions?

9 **FEMALE SPEAKER:** Yes. I have a question.

10 It is my understanding that what is called
11 the Atomic Energy Commission had made a decision
12 that it was unsafe to dispose of any high-level
13 radioactive waste on the surface since the mid-70s.
14 They were supposed to be putting in a deep geologic
15 repository, and then I thought that I saw that they
16 were putting in the trenches as late as 1994; is
17 that correct? That is what I thought I just saw on
18 something tonight.

19 **MR. DOWELL:** Yes. That was Gerry.

20 **FEMALE SPEAKER:** So I am just curious why
21 would we not be putting it in the deep repository
22 trenches from then onto the mid-70s if that is what
23 they determined because it is a huge presumption to
24 me. I can't imagine how any human being had the
25 arrogance to assume they know what is safe for the

1 next 24,000 years for any of this material that is
2 even being made anymore to have put it anywhere
3 since the mid-70s because those were the standards
4 that it was being set for, human and environmental
5 safety by law.

6 So why would this ever be changed, and why
7 would they ever care about how much it costs when
8 the cost of cancer and all of this can't even be
9 calculated.

10 **MR. NILES:** Somebody want to take a shot
11 at answering that?

12 **MALE REPRESENTATIVE:** Well, the far
13 majority of this waste was disposed of prior to
14 1970, and the most pertinent law that comes to my
15 mind was the transferential (phonetic) haystack,
16 which is a future-looking regulation or law, and it
17 talks about future disposals.

18 We have a lot of environmental laws, and
19 generally the environmental laws are: What DOE does
20 in the future and how to deal with the past
21 practices. So in the future, after that law in 1970
22 transferential waste was no longer disposed of in
23 shallow burial unless it could be shown that it was
24 the equivalent level of protection of a geological
25 repository, and they have done that in some

1 locations.

2 Unfortunately, that law doesn't directly
3 apply to this unless you exhume the waste or remove
4 the waste from its place. The law doesn't apply to
5 waste that was previously disposed, much like solid
6 waste landfills. The landfill regulations for today
7 and virtually every aspect of environmental law
8 doesn't apply to retroactive except those laws such
9 as CERCLA which says go back and evaluate what we
10 have done in the past. Determine if it is a risk.
11 Determine what corrective action needs to be taken.

12 And that is why there isn't a prescriptive
13 thou shall dig this up and remove it to a geological
14 repository because that just is not what the law
15 says. If you are going to dispose today, you are
16 absolutely correct. A lot of it has to go that way.
17 So it couldn't be disposed as a liquid. So it would
18 have to be put into a solid form before it go into a
19 geologic depository.

20 So the laws say: Evaluate all your mistakes of
21 the past or your past practices and determine the
22 risk and take appropriate action.

23 **MR. DOWELL:** Yeah. We have a group,
24 actually, not underneath Briant, that is actually
25 recovering the true waste that was put in

1 temporarily storage in the ground, and that material
2 is brought out and to say, to determine, whether it
3 is true waste and it is shipped appropriately to
4 WIPP.

5 So we have material today that we are
6 recovering out of trenches that we will continue to
7 recover at least through the end of this year that
8 is going to WIPP on a realtime basis we made that
9 commitment under that law to make sure the material
10 went to the right repository long-term. It is the
11 pre '77 I think this went through. MALE
12 REPRESENTATIVE: '70.

13 **MR. DOWELL:** '70. 1970 waste where it
14 doesn't come underneath that law. So we disposition
15 it on a case-by-case basis on these types of
16 decisions.

17 Now, the material that comes out of the
18 two feet I think Dennis alluded to, that material
19 will be assessed and will go to the appropriate
20 burial, repository or ERDITH as it gets screened.

21 **MR. NILES:** In the back, you had a
22 question as well?

23 **FEMALE SPEAKER:** Thank you. So based on,
24 I think it is JD or --

25 **MR. DOWELL:** That's me.

1 **FEMALE SPEAKER:** Based on your
2 acknowledgment that seismic activity was not
3 included in the modeling, you are asking us to make
4 comments and make decisions and make recommendations
5 based on the inaccurate data that you presented
6 because the data came from the modeling, I presume.

7 So my question is: Will new modeling be
8 performed that does appropriately include accurate
9 seismic activity that could impact the Hanford
10 region?

11 And then we should be allowed to rehear
12 the information based on the new and more accurate
13 data because without the seismic activity being
14 modeled, this is all bogus.

15 **MR. DOWELL:** The Department of Energy when
16 it builds a facility has a robust process to ensure
17 safety that looks at seismic and looks at national
18 hazard phenomenon like you are talking about.

19 The remediation, we don't have that
20 mechanism. So we have taken the comments, and we
21 are committed to making sure we thoroughly invest
22 and evaluate whether this decision has an impact
23 based on seismic. And that means -- I can't commit
24 to a model because I don't think -- the model that
25 we used that monitors or models the movement of

1 these materials in the ground doesn't have the right
2 components or configuration --

3 **FEMALE SPEAKER:** -- geological data that
4 is available for us.

5 **MR. DOWELL:** Right. And that is what we
6 are committed to doing with that comment, is looking
7 at it. I just can't tell you the extent of what it
8 is going to be. I think it is a great comment. We
9 do it for buildings, and it is something we need to
10 look at for this site. We are committed to doing
11 that.

12 **MR. NILES:** All right. Folks, let me just
13 -- you know, if you guys are all willing to stay
14 here until 11:00 or midnight to give your formal
15 comment, which we haven't even begun to do yet, that
16 is fine. We will do that. I just don't want people
17 to start leaving if they haven't had an opportunity
18 to give a formal comment, and this question-and-
19 answer period seems to keep going on and on and on
20 with no end in sight.

21 So I really want to ask you guys because,
22 you know, it is your comments that the tri-parties
23 want to receive.

24 **MALE REPRESENTATIVE:** Ken, I am a little
25 concerned if we don't get the comments soon, people

1 are going to start leaving.

2 **MR. NILES:** That is what I am concerned
3 about as well.

4 So are there any compelling questions that
5 can't be framed as part of your comment that anyone
6 feels the need to ask?

7 Go ahead, and we will get the microphone
8 to you.

9 **FEMALE SPEAKER:** JD, you were talking
10 about true thresholds.

11 Can you tell us what true threshold is,
12 please.

13 **MR. DOWELL:** My point is that when we
14 bring material out of the ground, we have a
15 threshold by which we monitor it. So if it goes
16 across that threshold, we determine that it is
17 classified as true waste, and it gets remediated in
18 the repository long-term storage. You know, I don't
19 have the --

20 **MALE REPRESENTATIVE:** 100 nanocuries per
21 gram.

22 **MR. DOWELL:** 100 nanocuries per gram is
23 the threshold. So it is a concentration as it comes
24 out.

25 **MR. NILES:** Okay. Any other questions?

1 **MS. LAIJA:** I want to clarify, for people
2 who provide comments tonight, just know that in the
3 decision we make we will respond to your comments.
4 So you will get an answer to the comments you make,
5 and we will let you know how that impacts the
6 decision we are going to make.

7 So keep that in mind when you are giving
8 your comments that those will be responded to as
9 well.

10 **MR. FALK:** In the form of the comment
11 period.

12 **MS. LAIJA:** Yes. After he start the
13 formal comment period at the misc in a just second
14 here.

15 But don't think that you are going to miss
16 out on hearing a response. We will provide you with
17 the response in the actual decision document.

18 **MR. NILES:** So how about a show of hands
19 of people who are expecting that they would like to
20 make a comment? You know, if you change your mind
21 and decide to add one later, that is fine.

22 So if folks want to start coming up to the
23 mic, maybe a couple at a time.

24 **MR. POLLET:** Can I ask a question? Is
25 there some reason why people can't just make the

1 comments and use the mic from their seats which is a
2 lot more comfortable than standing up there and
3 talking at the screen.

4 **MR. NILES:** What would people prefer to
5 do? At your seat?

6 **MR. POLLET:** Make it more comfortable.
7 Sorry, Sonya. We are going to run you around a
8 little more. That is what people would like to do.

9 **MR. NILES:** All right. So let's see some
10 hands again of people who would like to make a
11 formal comment.

12 **MALE SPEAKER:** Jurgen Hess, 412 24th
13 Street, Hood River.

14 I want to thank the turnout tonight, thank
15 everybody for coming. It is wonderful. It is
16 really neat to see so many interested people. It is
17 great.

18 Just a day ago there was a big gasoline
19 tanker that overturned east of Multnomah Falls. The
20 state was required 100 percent cleanup even if they
21 have to remove all the soil.

22 And I think we should apply that same
23 principle to the cleanup here. Two years ago when
24 DOE and EPA came to Hood River, that was the
25 overwhelming comment, 100 percent cleanup, don't

1 leave anything.

2 I think there are too many unknowns,
3 particularly with transference of plutonium. We
4 just don't know enough about it yet, and I don't
5 know my spirit will still be here 24,000 years from
6 now, but I hope -- you know, we don't know enough
7 about this stuff. It is too new. So I think be
8 cautious. Take the low risk, and the low-risk
9 approach here is to do the complete removal. You
10 have a Hanford advisory board that recommended that.
11 That is a cross-balanced group from all different
12 interests.

13 I think that's the best thing to do. I
14 strongly recommend you do that. I defer a lot to
15 Ken and the State of Oregon about the cesium. I
16 don't know enough about that, but I think certainly
17 for the plutonium take the cautious approach.
18 Excavate it all, bring it to the salt caves in New
19 Mexico.

20 Thank you.

21 **MR. NILES:** You are welcome to give your
22 name and your comments. If you don't want to, you
23 don't have to.

24 **MALE SPEAKER:** Thanks for the time to do
25 this. First of all, I mean as there is many

1 comments I want to make, and I will make them as
2 brief as I can.

3 But regarding the sampling data, even
4 though you have thousands of pages of data, there is
5 only less than 300 elements in the periodic table
6 last I looked. It would be fairly easy to present
7 the data for these four sites based on ranges of,
8 you know, a range of plutonium based on depth and a
9 range for cesium based on depth and a range for
10 carbon tet based on depth, you know, with
11 statistical stuff like highs and lows.

12 I don't think that would be very
13 difficult. I don't think we need to go through
14 thousands of pages of data to see that. And that
15 would make our understanding of the process a lot
16 better.

17 Secondly, regarding the curve that you
18 presented when Darrell asked the question about how
19 you decided to go to two feet down. When I saw on
20 that curve, and I may have misinterpreted that, but
21 there was a lot of data points way down low but one
22 or two data points where you made the two-foot
23 decision. That doesn't seem like a sound way to
24 make a decision if that is correct. So I wonder
25 about that, and I wonder if there is not a better

1 way to present that data, too.

2 Thirdly, as far as the cleanup is
3 concerned, I think that we should go to the
4 California standard, at least, for the plutonium
5 cleanup, and perhaps, you know, as far as any
6 cleanup we should be looking at something like a 99
7 percent removal.

8 And I know that realistically and
9 economically you are not going to probably end up
10 going to some of these places, but if you don't go
11 to those places, whatever is left in place should
12 simply not just be kept. There should be monitoring
13 wells surrounding the area. They should be
14 guaranteed to monitor for an indefinite period of
15 time because you don't know what is going to leach
16 when.

17 And, thirdly, a cap isn't sufficient.
18 With lateral movement of water, there should be
19 trenched walls going down to stop the lateral
20 movement of water in your engineering design.

21 Let's see. Oh, yes. My name. I forgot.
22 Dave Berger, Washington. I apologize.

23 And, perhaps, you know, once you get to
24 the point that it seems like you are going to have
25 to pull a lot of that stuff out regardless of what

1 that decision is, you know, this is also a great
2 jobs program. Finally we are at same page with the
3 people in tri cities. We are want them all working.

4 But in the meantime, when you decide what
5 you are pulling out, we should have a second meeting
6 to determine where it is going and what we see
7 regarding the acceptability of that decision.

8 And, lastly, I will end with a joke.
9 Okay? When I was in Tibet, the old saying was that
10 the Tibetan monks around the monastery feed the dogs
11 because they are afraid that bad monks will come
12 back as dogs. It is sort of an insurance policy.
13 Well, I sure as hell don't want to come back as an
14 ant at Hanford.

15 **MR. NILES:** Thank you.

16 **MALE SPEAKER:** Maybe above two feet.

17 **FEMALE SPEAKER:** My name it Kathy Carlson.
18 I am a resident here in Hood River. I have been
19 coming to these meetings for more than 20 years, and
20 I remember some stuff that was said at previous
21 meetings.

22 One of the things that I recall pretty
23 strongly was that the site would be left in a state
24 -- the goal was for the site to be left in a
25 condition where the public could use it. And then

1 they are talking about here today about putting
2 stuff over other stuff, and it is going to be an
3 industrial site and it is going to be maintained for
4 10,000 years. And then plutonium is like around for
5 24,000 and half life can go to 40,000 years. I
6 don't even think anything we engineer is going to
7 last for 10,000 years. It will probably last for,
8 you know, the life of a car, 20 years or whatever,
9 you know.

10 I think that -- and I heard a lot today
11 about -- oh, the other thing the lady brought up
12 about the seismic. Nothing was done to put into the
13 thing about seismic conditions. I don't see
14 anything about floods. They are having a flood in
15 the Midwest. You know, Fort Calhoun is in great
16 jeopardy because they didn't look at floods.

17 And so Hanford is on the river. I don't
18 see why they would not look at floods as part of
19 their conditioning to make -- I heard a lot of
20 things saying: Our assumptions. We are assuming.
21 We are assuming. "We felt. We feel. We are
22 confident." And none of this stuff is backed up by
23 scientific data.

24 And then the other things were, comments
25 that I heard here from you folks was, oh, "We are

1 transparent. We want to be clear." Not. There is
2 nothing here that is clear, and it is not
3 transparent.

4 And then another term I heard here tonight
5 was long-term stewardship. Again, we are going back
6 to 24,000 to 240,000 to 10,000, even to a hundred
7 years. I mean we are always going to maintain that
8 site. It seems like there is enough plutonium in
9 these -- in the ground if you left what you want to
10 leave in there that they could still be build 35
11 nuclear bombs. Seems like a great terrorist site to
12 me.

13 So, anyway, those are my comments. Thank
14 you.

15 **MR. NILES:** Thank you.

16 Other public comments, folks?

17 A couple folks here in the middle.

18 **MALE SPEAKER:** My name is Hafiz Heartsun.
19 I live here in Hood River.

20 I guess I will say in my own words
21 something I have heard from other people, but I
22 found your assumption that DOE will safeguard this
23 area for some number of years, hundreds, thousands,
24 tens of thousands of years, to be absurd. It breaks
25 the strains of credulity. How many years ago was

1 the pyramids built? It was like 5,000 years ago, a
2 mere half of that period. Where is the Pharaohs?
3 Where are they guarding their pyramids? And where
4 is any country that has been around for a thousand
5 years? Is there a single country on the planet that
6 has had a consistent government for 1,000 years?
7 500 years? No. It is just not in the historical
8 record to believe that America, and let alone the
9 DOE, will be around this long, is just absurd. It
10 is ludicrous. It is arrogant beyond belief. I mean
11 right now we are looking at, you know, the
12 government may default next week.

13 What is the DOE going to do when nobody in
14 this department has any money? Are you going to
15 stand out there and guard it for the rest of your
16 lives and set up camps so all of your generations
17 forever will guard, never leave, because my
18 ancestors 10,000 years ago were employed by DOE. It
19 is our sacred mission to stay here. It is like,
20 come on, guys. You really got to clean it up so it
21 becomes the no-action alternative that you are
22 thinking, that it requires no action because that it
23 is the only realistic thing that you can sustain
24 over the period of time necessary.

25 I mean sure, yeah, we love science, but

1 this is like science fiction crap. You just got to
2 give -- I mean you have got to give us a believable
3 story. You are not going to be here for 10,000
4 years. That is just absurd. It insults our
5 intelligence, really. I am serious. This is not
6 scientific. You have no scientific basis to say we
7 will be here 10,000 years.

8 Thank you.

9 **MALE SPEAKER:** Joe Still, 404 Oak Street.

10 First I want to say thank you to the
11 federal representatives, state representatives for
12 coming. I appreciate it.

13 Of all the comments I have heard tonight,
14 I would just like to focus on one, and it was a
15 woman in the back -- I don't know who it was -- who
16 mentioned about the seismic. And I know something
17 about CERCLA SuperFund Model Toxics Control Act. I
18 actually work in the tri cities. So I am somewhat
19 familiar with that.

20 On May 18, 1980 I was hiking in a place
21 called Randal, Washington and there was a little
22 event that day if you remember. Mt. St. Helens lost
23 half of itself, and I am standing here right now,
24 and I remember watching rocks the size of cars fly
25 horizontally through the air, and I hope that you go

1 through your decision-making processes, that you
2 will reconsider and evaluate the seismic components
3 of all these decisions.

4 We are in the ring of fire. All it takes
5 is slight tectonic plate movement, and we could have
6 a problem of gigantic proportions, and I hope that
7 state and federal officials do not make a decision
8 about considering seismic based on what judges,
9 legislators and attorneys have decided is the right
10 thing to do because there is no do-over. Thank you.

11 **MR. NILES:** Thank you.

12 Other people who would like to make a
13 comment in the back there?

14 **FEMALE SPEAKER:** Hello. Corey Water,
15 Moser, Oregon.

16 I understand everybody is working under a
17 budget regime, but I consider it a waste -- okay.
18 So more thorough options in cleaning up the
19 plutonium specifically in these sites was rejected
20 on the basis of being too expensive, but I consider
21 it a waste of our money to only do two feet. So
22 that is -- that is where the waste lies. Yeah, just
23 talking budget here.

24 **MR. NILES:** Thank you.

25 **FEMALE SPEAKER:** I am Robbie. I live in

1 Hood River.

2 I have a little scar in my throat. I am
3 able to talk. I have thyroid cancer. The only
4 known cause of thyroid cancer is radiation.

5 Plutonium is not a friendly element in its
6 form there, and saying we are going to go down two
7 feet and get 50 percent of the plutonium is not
8 cleaning up. I think it is like spelling. I used
9 to get every letter right except one, and I still
10 missed the word for knowing how to spell it.

11 Leaving 50 percent of the plutonium in the
12 ground is not cleaning it up. I don't know a lot
13 about running the operational. So it is an
14 operational model. Instead we are going to do two
15 feet, we are going to dig until it's, you know, only
16 a certain percentage of what's come up would be much
17 better. To go after 99 percent of it is just more
18 realistic.

19 Covering something with 15 feet of soil, I
20 presume that in Hanford they have winds, and there
21 is water erosion. And 15 feet of soil for 10,000
22 years or for what is -- for -- anyway it is not
23 enough. And it needs to be -- what needs to be
24 required is to have it sent to New Mexico. That's
25 my bottom line, and I am glad that we know a lot

1 more about radiation and it's gift and limitations.

2 I will say that in Japan all of the
3 nuclear power plants had to be renegotiated with how
4 safe they are because of the just upping the
5 earthquake to a 9.0 earthquake. They had to be
6 reevaluated. So I think evaluating this for seismic
7 activity is an excellent idea to make it safer.

8 Thank you.

9 **MALE SPEAKER:** I am Keith Harding. I live
10 in the upper Hood River valley.

11 Hanford is our father's curse on us, and
12 how we deal with it or don't deal with it is our
13 curse on our kids and grand kids.

14 If you are a student of history, you will
15 find a lot of stuff written down that passed
16 generations of humans didn't care much about future
17 generations. They said things like: What the hell
18 did the future ever do for us? Or they will deal
19 with it when they get here. And you will also find
20 comments such as Thomas Jefferson in his first
21 inaugural address of 1801 where he said: All their
22 actions at that time should be -- the impact on the
23 thousandth generation into the future should be
24 considered. What they do in 1801 should be
25 considered a thousand generations into the future,

1 and if that is 25 years per generation, that is
2 25,000 years.

3 I have been attending these meetings for
4 over 20 years now, and nuclear science and chemical
5 science is not my expertise at all. So I sit and
6 listen and listen to the agency people, and the
7 contractors speak, and a lot of the folks seem very
8 sincere. JD, you sounded very sincere tonight.
9 There has been some that did not sound so sincere.
10 I do know that it is real easy, and I sit and think
11 and listen. So I try to say something that might be
12 a different twist on it that might be a way to get
13 into the agency's mind.

14 And I do know there is a phenomenon of
15 simply becoming a functionary in an agency -- I
16 worked in government for 20 years. I know something
17 about it -- to become a functionary and to pace
18 yourself through it and get to the retirement. And
19 we have seen several of the characters before you do
20 exactly that, and now they are nicely retired with
21 their benefits.

22 I want to really see it get drilled in,
23 bolted and riveted into the agency because this
24 agency and the AEC before DOE was the villain, and
25 it still is. We need a real deep track record to

1 develop.

2 Over these past 20 years, we have heard
3 reclassification from a higher level to lower level.
4 We have heard redefinitions of terms, and I don't
5 understand hardly any of this stuff, but I have a
6 feel for it, and especially listening to you great
7 people out in the audience. And I totally agree
8 with Hafiz when he says it is bloody arrogant to
9 think this civilization is going to be around. I
10 mean I can see it collapsing a lot sooner than 200
11 years more. It is very important to get a deep mind
12 set into the agency, into human beings to get
13 reconnected with the earth that gives us life.

14 The nuclear program in 1944 was wrong
15 then, and it is still wrong, and you need to really
16 clean it up, get really committed to it. I have got
17 lovely young children, and I work with preschool
18 kids all the way down to diapers, and I have to
19 think about them.

20 All right. So do your best and don't
21 schmooze on it. Thanks.

22 **MR. NILES:** Thank you, Keith.

23 Before we go on, could I get a quick show
24 of hands again how many folks would like to make
25 comments?

1 I would like to check in with our court
2 reporter and see if you need a break at all.

3 **THE REPORTER:** No. Go ahead.

4 **MR. NILES:** Okay. Thank you. She is
5 stuck there more than any of us.

6 Go ahead, ma'am.

7 **FEMALE SPEAKER:** Chandra Radiance. I am a
8 Hood River resident, and I, too, have been coming to
9 these meetings for 20 years. Unfortunately, they go
10 on and on.

11 I am going to keep my testimony brief, and
12 I second the points made by Hearts of America. So I
13 am just going to put them down here.

14 I demand a better approach than remove,
15 treat and dispose. DOE's plan does not protect the
16 public from long-term plutonium risks. Plutonium is
17 one of the deadliest substances on the plant.
18 Internal exposure to plutonium causes cancer.

19 The DOE plans to leave large quantities of
20 plutonium in the soil in the waste sites it has
21 identified for cleanup in the central plateau. This
22 is unacceptable. Simply put, DOE should dig deeper,
23 remove as much plutonium as possible and send this
24 long-lived waste to a deep geologic repository at
25 the waste isolation pilot project in New Mexico.

1 Two: Given the extremely long half lives
2 of plutonium of 24,000 years and other contaminates,
3 DOE and EPA cannot assume that leaving this
4 contamination is protected. DOE's plan rests on the
5 false assumption that plutonium in the soil will
6 remain immobile for thousands of years. Given the
7 highly dynamic geology of the Columbia River basin
8 over tens and thousands of years, DOE should not
9 make this assumption.

10 Additionally, DOE's own sampling shows
11 that plutonium has migrated deep into the soil.
12 Clearly plutonium poses a long-term risk to
13 groundwater and the Columbia River.

14 Three: DOE should consider a broader
15 range of alternatives for cleaning up these waste
16 sites. DOE's proposed plan stops short of an
17 adequate cleanup, leaving waste below two feet under
18 the bottom of its liquid waste disposal sites in
19 place.

20 DOE argues that other alternatives such as
21 digging down 37 feet will be too expensive. At the
22 very least DOE should aim to remove 90 percent of
23 the plutonium as it proposed to do in other areas
24 such as the low-salt waste sites. Or DOE should
25 remove rather than cap cesium waste sites.

1 DOE rejected an alternative that would
2 have involved digging down 15 feet into cesium-
3 polluted and highly-radioactive areas in the 200
4 east area. Instead DOE proposes to add a soil cap
5 over these areas. We urge DOE to reconsider the
6 more protective alternative of digging up the cesium
7 waste sites.

8 And, five, focus on remove, treat,
9 dispose.

10 The public has long advocated for a
11 process of cleanup of the Hanford site by removing,
12 treating and disposing of radioactive and chemical
13 wastes in a manner that protects the public. DOE's
14 proposal falls short of this goal. The Hanford
15 advisory board summarized its concern with the
16 proposed plan in the following statement: "The
17 board advises the U.S. Department of Energy to get
18 as much plutonium out of these waste sites as
19 possible."

20 Thank you very much.

21 **MR. NILES:** Thank you.

22 **MALE SPEAKER:** My name is Bob Ruder. I
23 live in White Salmon, Washington.

24 And I am just really encouraged by the
25 desire to take advantage of this opportunity to make

1 the Hanford site safe by everyone here, and I think
2 that this is an unbelievable opportunity, and that
3 we have come together at a time when we are making
4 some real decisions about what is going to happen in
5 realtime.

6 And I think that it is very difficult to
7 take what we consider as realtime and try to make
8 the leap to the dangers of plutonium over what is
9 really unimaginable time as far as I am concerned,
10 and that given those sets of constructs of what we
11 think of as realtime and what we think of as
12 unimaginable time, I think it really moves us to
13 take advantage of this opportunity and to clean the
14 site up completely because in the other imaginable
15 period of time we don't know what will happen, you
16 know.

17 People have highlighted many possibilities
18 that would make the present proposal for cleanup
19 completely a waste of time and energy and money and
20 resources, and so to really clean the site up for
21 all the future involves the complete removal and
22 repository of the contaminated waste.

23 **MR. NILES:** Thank you.

24 Other folks who would like to make a
25 comment?

1 Let me remind you if there is
2 conversations you want to have with any of the
3 agency people, they are willing to stick around and
4 talk with you at the end of the meeting.

5 **MALE SPEAKER:** Can I make a second
6 comment?

7 **MR. NILES:** Yes, you can, but let me see
8 if there are others that haven't made one that want
9 to make one. So let's go to them first. And, yes,
10 you can make a second comment.

11 **FEMALE SPEAKER:** Karen Harding, Mt. Hood.
12 I vote that we clean it up 100 percent
13 even if it takes a zillion dollars. The future
14 deserves that from us.

15 **MR. NILES:** I think you had one other hand
16 back there. Maybe not. Then bring it back up here,
17 please. Thank you.

18 **MALE SPEAKER:** I would like to observe
19 that in my lifetime nuclear power has gone from
20 being too cheap to meter to too expensive to
21 calculate.

22 These things you are talking about is all
23 downstream costs of nuclear power, and you have been
24 struggling with this problem with all of our
25 scientific advancement. Apparently, you know, we

1 are just on top of the world. We can do anything,
2 and yet still there is no -- what is it -- approved
3 disposal method. And there appears to be no
4 approved disposal method in the near future. Now
5 DOE, our wonderful steward, is proposing to bring
6 thousands of truckloads of highly-radioactive waste
7 to Hanford with no idea what they are going to do
8 once they get it there. This doesn't sound like
9 thousands years of stewardship to me.

10 Given the long-term failures of Hanford's
11 tri-party agreement to realistically clean up what
12 has gone before or plan for what will go on in the
13 future, it seems to me that DOE should be giving us
14 a break and you, a government agency, need to be
15 taking the lead to the rest of the government to get
16 off of their crazy crackpot idea and stop nuclear
17 power. It is not sustainable. It gets more
18 expensive every year. It is insanely expensive, and
19 there is no end in sight for this. And for you to
20 sit around and do your own little one box job -- my
21 job description. I am not going farther -- is
22 irresponsible and, to me, inhuman.

23 The bigger picture is nuclear power is
24 insane, and you with your expertise and your
25 experience need to take a political stand and

1 explain this to the political do-dos and those
2 people who have fat pockets who are getting lined
3 with more nuclear power plants and make it a no-go
4 option. This is not a sustainable or scientifically
5 -- not scientifically sustainable way to boil water
6 and make electricity. It must stop.

7 There are much simpler, cheaper ways, and
8 to continue on this path, just have our little
9 meeting saying, "What should we do with this? What
10 should we do with that," I mean you are just nickel-
11 and-diming us death. You guys have the information
12 to have the big picture.

13 Take it. Run with it. You are our
14 employees. That is what I am challenging you to do.

15 **MR. NILES:** Gerry, looks likes you are the
16 last floor here.

17 **MR. POLLET:** I want to thank everyone for
18 coming and sticking with us this evening.

19 Remember, the Energy Department wouldn't
20 have even stopped dumping liquid waste into the soil
21 trenches without treatment if it wasn't for some of
22 you here coming to meetings 20 years ago and
23 sticking with it. You really make a difference.

24 And one of my comments tonight is the fact
25 that we had far less than 45 days to provide public

1 notice of this. We were supposed to have 45 days
2 under the Hanford cleanup publically involved in the
3 plan called the new relations plan. And without 45
4 days, River Keeper and Hearts of America Northwest
5 cannot do a mailing to you and everyone else who
6 wanted to be here tonight.

7 And I know that many of you helped out
8 making phone calls and forwarding E-mails and
9 Facebook announcements. Thank you for doing that
10 because we would have had an empty room otherwise,
11 and it is totally wrong for the agencies to put out
12 a proposal, and say we will not give you 45 days of
13 advanced notice for public meetings. The agencies
14 didn't really want to have public meetings. So
15 public involvement, advisory board and other people
16 pushed hard, and they agreed to do public meetings,
17 but they didn't really want you here. So they
18 didn't give us 45 the days.

19 It is really important that we have 45
20 days so we can do mailings, and it is really
21 important later this year they are going to come out
22 with a proposed revision to public involvement plan.
23 I hope to see you all here with a lot of other
24 people saying: If you don't give us 45 days, you
25 don't get to go forward with your plan.

1 Secondly, if you don't give us access to
2 the documents, public comment period doesn't start,
3 and in this case if you look -- there was a proposed
4 plan that is, frankly, a piece of garbage that was
5 distributed if you went beyond the agencies' fact
6 sheet, and then you wanted to see where was that
7 real data, and you had a broken link to the
8 administrative record. If you knew where the
9 administrative record was, you received back a
10 search query of 640 documents and versions like A
11 through G of the feasibility study, and you are
12 supposed to try to figure out which one was used.

13 I appreciate Dennis Falk's and the EPA's
14 commitment that if we ask for it there will be an
15 extension of the comment period, and we asked for it
16 because, first off, you need to establish the
17 principle that if the documents aren't available the
18 comment period keeps going until you have had plenty
19 of time to review them.

20 Secondly, in this case, for real, people
21 trying to review these documents were reading the
22 wrong damn documents because you didn't provide the
23 right access to them. What did the documents say?
24 Let's get to this.

25 **MR. NILES:** Gerry, we actually do have

1 somebody else that would like to comment.

2 **MR. POLLET:** I am just going to wrap up
3 then.

4 If the Energy Department had obeyed the
5 law after 1970, it would have stopped dumping liquid
6 waste and untreated liquid waste into trenches,
7 right? And it would have treated it and pulled out
8 the plutonium, and the plutonium would have gone to
9 WIPP eventually. Instead it is in the soil, and now
10 the Energy Department should not be rewarded for
11 having broken the law for 25 years by continuing to
12 discharge it and then say, "We don't want to dig it
13 up."

14 The Energy Department's proposed plan in a
15 calculation we think is a gross underestimate says:
16 Here is the lifetime cancer risk from these
17 supposedly safe cesium sites that they are going to
18 put 15 feet of dirt over or the Z-9 trench, which
19 will only dig up two feet. If instead of an
20 industrial worker, the area has subsistence farming,
21 and the cancer risk from the Z-9 trench is 1.4 in 10
22 lifetime cancer risk. 14 percent of the people
23 exposed, instead of the industrial worker, if it is
24 farmed 14 percent die of cancer.

25 If we look at the cesium trenches where we

1 are only going to put 15 feet of dirt on top, if we
2 have made a mistake the cancer risk is -- get this -
3 - 65 percent. Now, do you think we should dig it
4 up?

5 Thank you.

6 **FEMALE SPEAKER:** My name is Jody Frank,
7 and I live in Hood River.

8 And there has been some call for studies
9 on seismic and floods and that sort of thing, but we
10 live in the middle of the results of the Mazola
11 floods. I think we kind of know what those studies
12 are going to say. Could we just spend the money on
13 digging the stuff up on getting rid of it, please.

14 Thank you.

15 **FEMALE SPEAKER:** I implore the Oregon DOE
16 to not just rubber stamp the data provided by the
17 federal DOE. Just know that for you to rubber stamp
18 and agree to decision to, you know, take care of two
19 feet is just based on very poor data, and you need
20 to look a little deeper.

21 **MR. NILES:** We are in a Q and A, but it is
22 not what I said.

23 **FEMALE SPEAKER:** That is how I heard it.
24 So I am commenting how I heard it.

25 **MR. NILES:** Thank you. We did not agree

1 to that.

2 **FEMALE SPEAKER:** Unless I took incorrect
3 notes, it said that you agree that the cesium can
4 stay there.

5 **MR. NILES:** Yes.

6 **FEMALE SPEAKER:** And that the cesium does
7 not move.

8 **MR. NILES:** Yes.

9 **FEMALE SPEAKER:** It does not move based on
10 what data?

11 **MR. NILES:** Based on the chemical
12 constituency of the soil.

13 **FEMALE SPEAKER:** Have you looked at the
14 seismic?

15 **MR. NILES:** That wouldn't have an impact
16 on the chemical.

17 **FEMALE SPEAKER:** So it wouldn't move? So
18 cesium would not move even though there would be a
19 5, 6, 7, 8.0 earthquake it wouldn't, just move stay
20 right in its place forever and ever?

21 **MR. NILES:** It only needs about 300 years.
22 We are get into a dialogue that we don't want to get
23 into.

24 **FEMALE SPEAKER:** We want it 100 percent
25 cleaned up now. We are not going to be here in a

1 hundred years, but our children and our children's
2 will be. We want it cleaned up 100 percent.

3 **MR. NILES:** That's fine. We have got your
4 comment.

5 Other comments?

6 **FEMALE SPEAKER:** Jade Sherrer, and I live
7 here in Hood River, and I hearing the words
8 protection and service a lot tonight, and I would
9 just like to be a voice for the other-than-human
10 world, for the more-than-human world, that also
11 shares the environment and this planet and beg all
12 of us to come to our senses to do everything,
13 everything, everything possible to clean up this
14 disaster now.

15 Thank you.

16 **MR. NILES:** Thank you.

17 And I think we have one comment here.

18 **FEMALE SPEAKER:** Thank you. Chandra
19 Radiance, Hood River.

20 I just wanted to make a second comment
21 requesting that you would clean up the plutonium up
22 to at least the standards that has been set by the
23 Lawrence Livermore Lab in California which is a
24 thousand times more protective level of plutonium
25 than what Hanford is currently allowing. I don't

1 remember the exact numbers, but I think you have
2 knowledge of the 2.5 picocuries per gram instead of,
3 whatever, 29,000 -- 2900.

4 **MR. NILES:** All right. Thank you again.
5 We do appreciate it. Some really great comments,
6 and people sticking this out on a really nice night.

7 So thank you again. We will see you again
8 at some point.

9 **(At 9:30 p.m. the foregoing proceedings**
10 **concluded.)**

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CERTIFICATE

I, Michele J. Lucas, do hereby certify that the Rules of Civil Procedure, the witness named herein appeared before me at the time and place set forth in the caption herein; that at the said time and place, I reported in stenotype all testimony adduced and other oral proceedings had in the foregoing matter; and that the foregoing transcript pages constitute a full, true and correct record of such testimony adduced and oral had and of the whole thereof.

IN WITNESS HEREOF, I have hereunto set my hand this 29th day of July , 2011.

/Signed August 2013
Michele J. Lucas Commission Expiration

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328:6	120 272:21	190 285:5	1994	262:8
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240:12	13 271:2	1959	1998	279:1
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236:11	301:13	296:2	276:13	297:13
241:24	activities	302:9	advanced	342:11
241:25	251:15	306:23	342:13	342:13
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CORRECTION SHEET

Deposition of: Public Meeting (Vol 3) Date: 07/26/11

Regarding: Proposed Cleanup Actions of Hanford
Waste Sites

Court Reporter: Michele Lucas

Please make all corrections, changes or clarifications to the testimony on this sheet, showing page and line number. If there are no changes, write "none" across the page. Sign this sheet on the line provided.

Page	Line	Reason for Change
232	11	Capitalize; Tri-Party
233	1,4,9,11	Capitalize; Tri-Party
235	13	Misspelled name; Bill Burk to Phil Burke
235	25	Misspelled name; Emmy to Emy
238	25	Capitalize; Tri
239	1	Capitalize, Cities
243	3	Misspelled word; corps to cores
243	6	Wrong word; coal to cold
244	10x2	Misspelled acronym; ERDITH to ERDF
246	17	Misspelled word; rescission to recession
249	14, 18	Misspelled name; Emmy to Emy
257	20	Wrong word; class to glass

Signature

Lynna Jegeler
Representative

CORRECTION SHEET

Deposition of: Public Meeting (Vol 3) Date: 07/26/11

Regarding: Proposed Cleanup Actions of Hanford

Waste Sites

Court Reporter: Michele Lucas

Please make all corrections, changes or clarifications to the testimony on this sheet, showing page and line number. If there are no changes, write "none" across the page. Sign this sheet on the line provided.

Page	Line	Reason for Change
<u>258</u>	<u>5</u>	<u>Misspelled acronym; ERDITH to ERDF</u>
<u>258</u>	<u>6</u>	<u>Incorrect term; True to TRU</u>
<u>258</u>	<u>7</u>	<u>Wrong word; pile to Pilot</u>
<u>258</u>	<u>7</u>	<u>Capitalize; Waste Isolation Pilot Plant</u>
<u>260</u>	<u>10</u>	<u>Misspelled name; Emmy to Emy</u>
<u>263</u>	<u>4,5</u>	<u>Capitalize; Tri-Party Agreements</u>
<u>264</u>	<u>13</u>	<u>Misspelled name; Emmy to Emy</u>
<u>265</u>	<u>6</u>	<u>Capitalize; Tri-Parties</u>
<u>267</u>	<u>8</u>	<u>Wrong title; Hearts to Heart</u>
<u>268</u>	<u>10</u>	<u>Capitalize; Advisory Board</u>
<u>268</u>	<u>12</u>	<u>Wrong title; Hearts to Heart</u>
<u>269</u>	<u>19</u>	<u>Wrong name; Mazola to Missoula</u>

Signature

Lynna Segelew

Representative

CORRECTION SHEET

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Waste Sites

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Page	Line	Reason for Change
<u>271</u>	<u>9</u>	<u>Capitalize; Advisory Board</u>
<u>271</u>	<u>17</u>	<u>Wrong title; Hearts to Heart</u>
<u>275</u>	<u>15</u>	<u>Wrong title; Natural to National</u>
<u>278</u>	<u>21</u>	<u>Misspelled name; Falk to Faulk</u>
<u>281</u>	<u>9,10</u>	<u>Incorrect term; true to TRU</u>
<u>283</u>	<u>7,15</u>	<u>Incorrect term; true to TRU</u>
<u>286</u>	<u>8</u>	<u>Misspelled name; Falk to Faulk</u>
<u>286</u>	<u>11</u>	<u>Capitalize; Waste Isolation Pilot Plant</u>
<u>289</u>	<u>3</u>	<u>Incorrect name; P and L to PNNL</u>
<u>292</u>	<u>25</u>	<u>Misspelled word; resent to recent</u>
<u>296</u>	<u>20</u>	<u>Misspelled name; Falk to Faulk</u>
<u>299</u>	<u>3</u>	<u>Misspelled name; Falk to Faulk</u>

Signature Lynn Jegelen

Representative

CORRECTION SHEET

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Page	Line	Reason for Change
301	12	Capitalize; Advisory Board
303	5	Wrong dollar amount; \$2 to \$2 million
303	6	Wrong word; sick to drill
308	4	Misspelled name; Falk to Faulk
315	25	Incorrect term; true to TRU
316	20	Misspelled acronym; ERDITH to ERDF
318	22	Capitalize; Tri-Parties
319	17	Incorrect term; true to TRU

Signature Lynna Segeler
Representative

