THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

convenes the

THIRTEENTH MEETING

CAMP LEJEUNE COMMUNITY ASSISTANCE

PANEL (CAP) MEETING

JULY 8, 2009

The verbatim transcript of the Meeting of the Camp Lejeune Community Assistance Panel held at the ATSDR, Chamblee Building 106, Conference Room A, Atlanta, Georgia, on July 8, 2009.

STEVEN RAY GREEN AND ASSOCIATES
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C O N T E N T S

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P A R T I C I P A N T S

(alphabetically)

ARAL, MUSTAFA, GEORGIA TECH CONTRACTOR
BOVE, FRANK, ATSDR
BRIDGES, SANDRA, CAP, CLNC (via telephone)
BYRON, JEFF, COMMUNITY MEMBER
CIBULAS, WILLIAM, ATSDR
CLAPP, RICHARD, SCD, MPH, PROFESSOR
ENSMINGER, JERRY, COMMUNITY MEMBER
MENARD, ALLEN, COMMUNITY MEMBER (via telephone)
PARTAIN, MIKE, COMMUNITY MEMBER
RUCKART, PERRI, ATSDR
SIMMONS, MARY ANN, NAVY AND MARINE CORPS PUBLIC HEALTH CENTER
SINKS, TOM, ATSDR
TOWNSEND, TOM (via telephone)
WILLIAMS, SCOTT, USMC

P R O C E E D I N G S

(9:00 a.m.)

WELCOME, INTRODUCTIONS AND ANNOUNCEMENTS

MR. STALLARD: Good morning everyone. I am Christopher Stallard, your facilitator. Welcome back. I'd like to start this by going around the table first for introductions for the benefit of the reporter. Please be advised that this is a public meeting. It's being broadcast and streamed on IPTV, I guess it is, and recorded as well. So let's start here, please.

MR. BYRON: Jeff Byron with the CAP.

MR. ENSMINGER: Jerry Ensminger with the CAP.

MR. PARTAIN: Mike Partain with the CAP.

MS. RUCKART: Perri Ruckart, ATSDR.

DR. BOVE: Frank Bove, ATSDR.

MS. SIMMONS: Mary Ann Simmons, Navy-Marine Corps Public Health Center.

DR. CLAPP: Dick Clapp. Dick Clapp with the CAP.

MR. STALLARD: Thank you. And on the phone we have again --

MR. MENARD (by Telephone): Allen Menard, CAP.

MR. STALLARD: All right, thank you everyone.

Many of you have seen the agenda. It has a lot to do with what you projected what you wanted for this meeting based on the last meeting. Before we get into that I'd like to take just a few minutes to go over our operating guidelines that keep us working together toward a common goal here.

First of all, push to talk and to release, please, on the microphones, the red button will come on when it's active. Turn it off when you've finished. Please in the audience and anyone at the table if you would, turn your cell phones to silent, buzz or something.

The audience, welcome, I see many familiar faces. Again, I would like to remind

you that you're here to observe unless perhaps invited or called upon by the CAP members to respond to a particular question that they know you may be able to respond to.

We like to keep our interactions here with, given the level of frustration and emotion in the topic, personal attacks, we ask that you refrain from those. And that whenever possible we're here to offer constructive solutions and recommendations for ways forward to advance the goal of the CAP.

I'd like to announce that Denita McCall, as I'm told, is no longer a member, has resigned, and I'm going to have Jerry make a comment to that in just a moment.

Aside from that we're going to get on with the agenda. Jerry has asked for a few moments to address the CAP so we'll do that right now.

MR. ENSMINGER: Late last evening while I was in my hotel room I got a phone call from Nicholas Ortega. He's Denita's son. Late

yesterday afternoon Denita was moved to a hospice center. They've given her 72 hours to live. So that ought to set the tone for this meeting.

MR. STALLARD: Indeed. Thank you for sharing that, Jerry.

CAMP LEJEUNE WEB SITE UPDATE

Next on the agenda I'd like to invite Christian Scheel, who will make a presentation on the Camp Lejeune website update.

MR. SCHEEL: Good morning, my name's Christian Scheel, and I'm with the Health Communications Science Office ^ activity, for short the Web Team. And this morning I'm going to give you a really quick briefing on the state of ATSDR's Camp Lejeune website.

There are three items that I'd like to touch on this morning, the first being the performance of the website over the last three years or so, the new look and feel of the Camp Lejeune website, and then I'd also like to talk about the next steps we're going to take

in improving the usability of the website itself.

The performance of the website: This chart here illustrates the number of page use at the Camp Lejeune website has received over the last three years starting in July of 2006. Page use being registered really means when a page is actually rendered in a browser. That's what we count as a page view.

So for the last three years starting in July of 2006, going year-to-year, Camp Lejeune's website has registered 110,000, 88,000 and 119,000 page views per year over that three year period. I've compared that to the Libby, Montana site, which has the same time period, registered 133,000, 174,000 and 134,000 page views over the same time period.

The reason that I'm comparing the two is both sites deal with communities that have an issue with exposure and both sites receive a fair amount of media attention. So traffic is being driven to the site oftentimes comes

from members outside of the affected community so they're relatively similar in that way.

To provide larger context within the ATSDR domain itself, we do have several websites that are upwards of a million-plus page views a year, and those sites are much larger in terms of overall page count and the topic that's being addressed on those sites tends to be more generalized. So the overall, the potential overall audience I think is probably larger so that that has a role in the number of page views those are getting.

The actual page views over the three years for both sites, I mean, they're relatively static. There's a valley here in the second year with Camp Lejeune and then a peak with Libby. And the peaks and valleys in the page views are generally attributable to either the release of a report, new content, there's a newsworthy event, something like that that drives traffic externally. But that's just a snapshot of what's going on at

this site.

This page is just showing you the top five pages on the Camp Lejeune site over the last year in terms of page views. The home page is typically the most popular page. That got about 43,000 page views. The TCE-PCE exposure page got about 9,500 page views, so there's quite a difference. And as you move on down the number drops to about 5,400 with the water contamination summary page.

So one of the things we want to do with that information is we want to take a look and see, since we have such a high number of people hitting the home page, which is what we expected, we also wanted to see how they're behaving on the home page and make sure that what they're getting on the home page is actually what they're looking for and also determine whether or not they're getting it and then bailing on the page immediately.

Maybe they searched and they got to the page and it wasn't what they found or an

immediate look didn't give them what they wanted and so they left. So we need to do some additional analysis on that.

So moving to the look and feel of the website, over the last three-plus years we've been using the template that you see in the screen shot here. And as the site has evolved, it's evolved fairly organically. We've just kind of been adding content, you know, kind of piling it on. And through that evolution we've seen areas where we wanted to make some improvements on the interface of the site.

And some of those areas were related to -- basically the look and feel, it's dated, and it's not consistent with the more widely-used templates that we've implemented within ATSDR. So that can introduce a bit of confusion with the users when they're jumping from template style to a different template style.

One of the other things is is the page

template's a fairly narrow page so it tends to push content down below the fold. So the way the home page was designed now we've got a lot of background information, but then new links tended to go to the bottom of the page because it was so long it got pushed below the fold.

So it wasn't immediately apparent that there was something new there. And as such, it's difficult to highlight new and important content because the way the template was designed it wasn't kind of an elegant way to make something pop out visually on the site.

And then the last thing that we wanted to kind of address was the use of the menus. The menu structure on the site is over on the right versus the more widely-used template which was on the left. So there's another element for potential confusion with users. But it's also a static menu so the further you drill down into the site, you didn't get any contextual placement because you never got sub-menus. That was something that we thought

it's a nice to have thing, but it's certainly an improvement.

Well, as of yesterday we've implemented the new ATSDR template on the website, and some of the highlights of the website in addition to being, having been extensively tested for usability issues, we've also tested the templates to make sure that they meet all of the Section 508 accessibility standards. So if there's an accessibility issue with a user, that shouldn't be a problem.

But it is kind of a more modern look and feel, you know, it's being marketed as a Web 2.0. I don't know if you're familiar with that, but it's a very modern web standard look and feel. It's a wider page so we can pull more content up to the top of the page.

And the way the templates are designed, highlighted content was designed into the template, so it's a more elegant way to do it. So an example is here highlighted

in this red box. These red boxes are not present on the live site, it's just here to highlight.

But for today's CAP meeting it's a way for us to, and it's a little bit more washed out on the screen. But it gives us a way to kind of provide some visual distinctions and to content that we either want to draw attention to or that we feel is important.

Another thing is is the way the templates are designed, particularly on the home page, it's designed around modules of information. So the way we've decided to implement the modules here is is we've created these modules, the Public Health Activities box and the Community Resources, as well as the Water Modeling and the Chemicals, those mirror the main landing pages of the website.

So with these modules what we've been able to do is, we've been able to pull up links that had previously been kind of hidden on those pages. And we pulled them onto the

home page so information that we know is important either through statistical analysis of the website or it's new content, or it's something that we feel's important to highlight, we can pull it up on the home page and give the users, who we know are in that page more than any other page on the site, we give them an opportunity to have direct links to the important content links on the site.

One of the other features that we like with the new template is the use of this dynamic menu structure. You might not be able to see it too well over here, but basically what happens is, you know, most websites have subsections. So as you drill down into the subsections, what happens here is it builds the submenu for that section in the main menu.

And so what that allows us to do is, when it gives you kind of this visual context about where you are on the site. And it also provides direct links to other like content within the category that you're viewing. So

it’s a nice usability feature and also gives us some flexibility so that as we pull more content, we make the site deeper, we don’t have to change the structure of the menu. We don’t have to change the architecture of the site. So that’s a feature that we really like.

Now, the third item that I wanted to talk about is kind of usability improvements. And the tool that we want to use in the next step is something that’s called card sorting. I don’t know if you’re familiar with card sorting, but what card sorting basically is is you take a list of labels, and then you break that list out into separate categories. And then you give a name to those individual categories.

And so what we do is if we get enough people to take a look at this web sorting exercise, and we pick up some trends, what we do is we take that information. We use that to help inform how we apply labels to the

website, and how we actually structure the architecture of the site. In the past as we've built up the site, we'll take the best guess or a fairly well-informed guess at what we think the labels should be and what we think the site architecture should be.

But up to this point we haven't really solicited user feedback to get a better understanding of what labels make sense to you. What structure makes sense to you. How it is that you think about buckets of information on the site. So that's the purpose of the web sorting exercise -- or the card sorting exercise, excuse me.

So what we'll do is the exercise will be conducted online, and we're going to ask for participants from the CAP, participants from the community that aren't members of the CAP, and then from federal employees. Because of some OMB restrictions we can take up to nine participants from the CAP and nine participants from the community. And so

that’s kind of the big ask here.

So coming soon we’re going to make an announcement to solicit volunteers to participate in a card sort, and that will be happening later on this summer. And like I said, we’re going to use that information to try to make this a better website for individual users.

Yes, sir.

MR. BYRON: This is Jeff Byron. Do you want us to link that also on our websites?

MR. SCHEEL: We’re going to work out the logistics of it. You know, how it is we’re going to get volunteers, but I just wanted to put that out there just to kind of give you a heads up that that’s coming. And so you can maybe talk it up.

And that’s really all I have for today if there are any other questions.

MR. STALLARD: Go ahead, Jeff.

MR. BYRON: Jeff Byron again, is this, I guess this website, is it modeled after Libby,

Montana, or are you doing something similar?

MR. SCHEEL: No.

MR. BYRON: I just wondered since you showed a graph.

MR. SCHEEL: Yeah, I just wanted to show it just to give you some kind of comparative kind of value.

MR. BYRON: Do you have a site for Libby, Montana also?

MR. SCHEEL: Yes, we do.

MR. BYRON: I just wanted to look at it.

MR. STALLARD: Christian, I have a question. Does the EPA have similar web tools?

MR. SCHEEL: Yeah, EPA, all the federal government agencies, federal agencies, there's a variety of websites out there. The focus can be different. I mean, there are some sites out there where there's a bit of overlap.

Where there are opportunities to cross-link, we'll do that. So we find that if EPA has a link that's contextually relevant

and valuable to the Camp Lejeune site, then we can link to that and vice versa.

MS. RUCKART: We do that for the Camp Lejeune site. We have links to EPA site and the USMC site. It's under the Community Resources. We have links to your website and the STAND website.

MR. STALLARD: Perri, thanks.

Any other questions for Christian?

(no response)

MR. STALLARD: All right then, thank you very much.

MR. SCHEEL: Thank you.

RECAP OF LAST MEETING

MR. STALLARD: Moving right along we're going to have Perri provide us with an update from the previous meeting which has led to the agenda for today.

MS. RUCKART: I'd just like to start off our current meeting discussing the key points and summary of our last meeting just to orient us. So at our last meeting there was a request

from the CAP for the VA to participate in future meetings.

And Tom Sinks was present and he suggested that the CAP identify all the issues we'd like the VA to address, and then we'd send the VA a letter. And he also wanted to wait and see if the NRC Report mentions anything about the VA. But we sent the letter. We had some communication with the VA before the NRC report; I'll get to that in a second.

And a major thrust was that the CAP would like the VA to attend a CAP meeting and give a presentation and answer questions about the differences in treatment of the veterans who file claims related to Camp Lejeune. And it was also proposed that the VA rep be a subject-matter expert and be able to make decisions.

And that the letter that ATSDR sends would also be cc'd to the Senate and House Armed Services Committee and to the DOD. And

Dick Clapp also suggested that Han Kang or someone from his group be involved in the mortality study.

Now, both Christopher Stallard and Frank Bove sent an e-mail to someone at the VA discussing this request and have not heard back. We gave some time for that person to respond. We didn't get a response so Tom Sinks sent a letter to, I think it was Rear Admiral Dunne, again.

That was sent at the end of June asking that the VA come to a meeting, participate in a meeting and be available to talk about these differences in the treatment and the claims. And as of yesterday Tom had not heard back. We've not gotten a reply, so we've not gotten a reply to two e-mails, and we've also not gotten a reply to our letter.

MR. BYRON: Could we get a copy of these letters or I think we asked for that previously anyway, correspondence? Is that a problem?

MS. RUCKART: We'll look at that but it shouldn't be because we've said before that we could give copies of letters that we generate.

As you all are aware, Bill Cibulas, the Director of DHAC, announced that ATSDR is going to remove the 1997 PHA from our website. In its place will be an explanation of the rationale for why it was removed and reference the ongoing water modeling, dose reconstruction and epi studies, and our commitment to redo that pathway pending completion of those efforts. The document would still be available by request to our records room because the nine other pathways are still valid. But we would alert the VA, the Senate and House Armed Services Committees, NRC, in the interest why we did this and why we did that. And we did have some discussions with the Armed Services Committee.

Also at the last meeting Julie Fishman gave a presentation on the NCEH/ATSDR National

Conversation on Public Health and Chemical Exposures and answered some questions. As a follow up to that there was a kick-off meeting held at the end of June, and Jerry was present at that meeting.

I sent you all a request from the National Conversation Group. They're trying to form some work groups, and I think the deadline is later this month if you want to participate in that work group. So just go back and check your e-mail for how to sign up to possibly participate in those work groups.

Also at the last meeting Morris briefed the CAP on the information that he was going to discuss in the subsequent two days of the water modeling expert panel for Hadnot Point and Holcomb Boulevard. He discussed the use of a screening method for Hadnot Point, which he then presented to the panel.

He reviewed the recommendations from the Tarawa Terrace Expert Panel meeting that included data discovery, chronology, ground

water modeling, data analyses for Hadnot Point and water distribution. And he mentioned that all recommendations from the Tarawa Terrace report were implemented. And that they're posted on our website, you've probably seen that Chapter A has more full details about that.

And Frank discussed our draft analysis plan for the study on birth defects and childhood cancers that we're going to present to the expert panel to get their feedback. And I also gave updates on where we were at the time with the health survey and mortality study concerning what approvals we received, our contractor selection process, our presentation at CDC's Division of Cancer Prevention and Control meeting and what we knew at that time about when we could expect the NRC Report.

MR. BYRON: Question, this is Jeff Byron again. When you alerted the VA, the Senate and House Armed Services Committees, the NRC,

you know, concerning the PHA being brought down from Mr. Cibulas, or Dr. Cibulas, what was their response, if any? Especially the NRC's response I'd like to know.

DR. CIBULAS: Jeff, unfortunately, I don't have any information on the NRC response. So I don't know. Tom will be here later if -- we can ask Tom.

But as far as the Armed Services Committee, as you know, we were asked to come up and meet with the Armed Services Committee, and Tom and I did do that. They wanted to understand why we did it. And we explained to them the same logic that I had given the CAP. And I think they were most concerned that they had been aware that this was going to happen, and we talked a little bit about communication, and we had some --

MR. BYRON: I'm sorry. Why would they be concerned about communication between you and them, when they've taken actually no steps, you know, up until now to be even involved in

Camp Lejeune even though they've known about it for years? I don't understand why they --

DR. CIBULAS: I think it was sort of a continuing theme from our colleagues in the Department of Defense who also felt that they had been made aware that that decision was going to be communicated at the CAP.

MR. ENSMINGER: Dr. Cibulas, I have a question. ATSDR notified the Department of the Navy, a Brian somebody.

DR. CIBULAS: Yes, they did.

MR. ENSMINGER: Wasn't that your, did that fulfill your responsibility to notify the Department of Defense?

DR. CIBULAS: I don't know if I can really answer that without --

MR. ENSMINGER: How many damn people you got to notify?

DR. CIBULAS: I understand.

MR. ENSMINGER: Or do you got to put a banner up on the outside of the Pentagon?

DR. CIBULAS: I understand, Jerry. I mean,

the way we understood it at the time it was, there was this agreement that we would work through Mr. Harrison, and we had made that contact, and we had provided that information. I think there was concern that it hadn't trickled down to members of the Marine Corps and others. And that was probably the reality.

MR. ENSMINGER: That's your chain of command, and your communications. You can't help that.

DR. CIBULAS: Right, right.

MR. ENSMINGER: That's an internal problem.

DR. CIBULAS: So anyhow, our opportunity with meeting with the Armed Services Committee we just explained the rationale just as I said. Just as we had done with you back in April. And I don't think that there was really any challenge or concern about why we did it. I mean, the reasonings were cogent and we made the decision just as we had made it with you. And we shared that with them,

and that was pretty much it.

MR. BYRON: One last question, this is Jeff Byron. Were these just, were they actually the senators and congressmen from the Armed Services Committees or were they their --

DR. CIBULAS: We did not meet with the actual Senate staff.

MR. STALLARD: Thank you. Any other questions about the recap from the last meeting?

(no response)

MR. STALLARD: Jerry? Anything?

MR. ENSMINGER: No.

MR. STALLARD: Morris, we're running ahead of schedule. Would you mind, are you prepared to give us your --

MR. MASLIA: Sure.

MR. STALLARD: -- water modeling update?

MR. ENSMINGER: While he's getting ready, I do have something for Dr. Cibulas, if you would come back up here a moment.

DR. CIBULAS: I knew you weren't done with

me, Jerry.

MR. ENSMINGER: After the benzene issue came up, which was what ultimately pulled down the Public Health Assessment, I started looking at other issues involved in the Public Health Assessment, especially exposures. And I started looking at all the historical data that was available to the folks in DHAC when they were at Camp Lejeune.

Vinyl chloride, in the Public Health Assessment on Table 2, it shows vinyl chloride at three parts per billion, and that was an estimated value. I would like to know how they came up with that because I found two actual samples that showed one was 655 parts per billion of vinyl chloride and another well with 18. And this is in the Hadnot Point system.

When you add those two together you come up with 673 parts per billion of vinyl chloride. Now, when I divide that out by ten wells, which is what they say that normally

operated ten wells at a time, it comes up to 67.3 parts per billion of vinyl chloride. If you divide it by 20 it comes out to 33.65 parts per billion. If you divide it by all 35 wells in the damn system, it comes out to 19.2 parts per billion. So how the hell did they come up with three parts per billion?

DR. CIBULAS: I obviously don't have an answer.

MR. ENSMINGER: But see the point that I'm making here is that this NRC committee utilized the data from this Public Health Assessment to write their report, and this data is incorrect. I mean, I'm a layman. I don't even have a college degree, but by god, I can look at facts and figures and figure out that this three parts per billion is not correct. And this report is still resounding and affecting this stuff like this NRC Report. It's incorrect.

DR. CIBULAS: Hopefully, they had access to all the raw data and information that Morris

is currently using now which hopefully would have provided additional information about what we knew about benzene just beyond the Public Health Assessment.

MR. ENSMINGER: But they didn't. They didn't. They didn't even have the right data for Well 602, which had the benzene in July. It's right on page 256 of their report. And it better not show up in the final copy either.

MR. BYRON: This is Jeff again. When you look at the Public Health Assessment, you say that it's still up there because of the other nine pathways to exposure.

DR. CIBULAS: Uh-huh.

MR. BYRON: It makes you wonder about the other nine pathways. If we started looking at that, how valid is the Public Health Assessment on those? You know? Because it's so flawed where we're concerned, that it should be thrown away totally.

MR. ENSMINGER: I thought it has.

MR. BYRON: It wasn't because they could still get it.

MR. ENSMINGER: Yeah.

MR. STALLARD: Has it been taken down?

DR. CIBULAS: It has been taken down from the website, yeah. It has. We did that per our commitment very shortly after the meeting in April, the end of April, yes.

MR. STALLARD: And, Jerry, let me just so I understand, is anything, are we looking for something else more than taking it down to emphasize the impact that it's had?

MR. ENSMINGER: No, I just wanted to point out, I mean, I'm wanting to know how they whittled down 673 parts per billion of vinyl chloride down to estimated three. I understand the estimated part because you'd have to, without a water model that would actually break it down and show the actual numbers, you have to estimate. I realize that. But when you take the actual historical data, how the world did these people come up

with three?

DR. CIBULAS: And what I will commit to do is seeing if I can follow up on that a little bit, but I don't have the answer right now, Jerry. I'll see if we can try to retrace that and try and figure out how that was done.

MR. STALLARD: Thanks.

Go ahead, Frank.

DR. BOVE: It had probably something to do with the cycle in the wells. They do have the vinyl chloride readings in here. February 4th is when they had the high readings of vinyl chloride in --

MR. ENSMINGER: Six fifty-one.

DR. BOVE: -- 651, yes. And on February 5th, when they did the sample, they have 429 parts per billion TCE, and other times, a day or two, they had twice as much. So something's going on in terms of well cycling which we're going to have to figure out as part of the modeling effort.

But what I think is we ought to find

out what the detection limit was for vinyl chloride as the first thing because the limit of detection --

MR. MASLIA: That's probably in Chapter C of our report.

DR. BOVE: So we can look that up.

MR. MASLIA: We list all the detection limits and all the qualifiers and those things.

DR. BOVE: Probably was a very high detection limit I would think.

MR. ENSMINGER: What, 655?

DR. BOVE: No, no, in the distribution system. Anyway, this is something we definitely want to look into. ^ plays a very important ^.

MR. ENSMINGER: Oh, I see what you mean.

MR. STALLARD: Did someone just join us, please, on the phone?

MR. TOWNSEND (by Telephone): Yeah, Tom.

MR. STALLARD: Hey, Tom, welcome. Is the closed captioner on by chance?

CAPTIONER (by Telephone): Yes.

MR. STALLARD: Thank you. I've been informed that we're having some technical difficulties and that neither internal nor external are being able to view. When we take our break, they're going to reboot the system, and if that doesn't work, I'll keep you posted.

WATER MODELING UPDATE

So are we ready to move into Morris' presentation on water modeling?

(no response)

MR. STALLARD: Yes?

Thank you, Morris.

MR. MASLIA: Good morning, I'm going to give you a brief summary on the water modeling expert panel. Some of you were in attendance from the CAP as well as the Marine Corps that took place on April 29th and 30th of this year. And we had about, I think we had 13 panel members ranging in expertise from modeling, hydraulics, geohydrology to also epidemiology

as well as uncertainty analyses, parameter estimation. And we have a draft report.

Our contractor has prepared a draft report. Due to additional activities and stuff I have not had the time to personally go through each page of the draft report. It's modeled after the expert panel report from 2005 that's on the web already. And so what I'm going to report to you this morning is from our Section Six. It's draft so that's why I don't have anything to pass out to you.

And go over their broad recommendations. So they basically broke it up into six major areas of recommendations, and this was at the final, for those who did not attend, the final session, I guess hour, hour and a half-long session. We asked each of the panel members to go around and espouse their recommendations on the two days that they had. What was a major concern. What directions the Agency should follow and so forth.

The six broad categories were obviously in modeling, model calibration, epidemiology study needs, the interconnection between Hadnot Point and Holcomb Boulevard, additional data needs, and the timeline of the project. And basically, I'll just give some brief summaries within each category at this point.

In terms of modeling everyone recognized, and we have stated all along, that Hadnot Point is far more complex. The panel did encourage us to proceed along the line of using some simpler-type models. We had presented a method Dr. Aral, who's here today also, presented a method that they were developing, and the panel said to proceed along with that, continue following that.

As well as in terms of modeling they brought out, which we are currently pursuing, is the well cycling, the on-off well cycling. This is particularly important to the interconnection between Hadnot Point and

Holcomb Boulevard. And we are currently looking at some methods to see if we can reconstruct the well cycling pattern remembering we've got hundreds of wells even going into present day. So we have some information where some wells replaced other wells and stuff like that. So we are pursing that.

MR. ENSMINGER: We only had 35 at Hadnot Point.

MR. MASLIA: But some replace others.

MR. ENSMINGER: Not hundreds.

MR. MASLIA: They add up close. One's replaced and one's taken out all the way back to the '40s in other words. At one time you're correct, Jerry, at one particular time. But over the history of that, and we've spent a lot of time putting sort of a chart together although it hadn't been done previously, and it's taken a lot of effort just to account for all the historical wells.

MR. ENSMINGER: Do you have a diagram of all

those historical wells?

MR. MASLIA: Not with me and not releasable at this time only because it's still a work in progress.

MR. ENSMINGER: That'd be interesting to see.

MR. MASLIA: We're working on that. And what that takes is feedback with the water utility guys. On a number of occasions we'll call them up when we have questions about whether they have either additional information for us, or we have a question about how a particular well was put into service or not put into service so that's built into that.

Also, they did suggest, as we had thought, in that time period where Holcomb Boulevard was receiving Hadnot Point water, we need to use two separate models. In other words we can't use the Tarawa Terrace approach where all the wells mixed into one treatment plant and then the concentration at the

treatment plant is the same as the concentration throughout the distribution system.

We did the analysis and proved that was a correct assumption or simplification if you will for Tarawa Terrace. That assumption works for Hadnot Point when there's no interconnection. But when there's interconnection with Hadnot Point, you cannot use that approach.

DR. BOVE: So you need two models I take it?

MR. MASLIA: Yeah, you need to look at each, on the distribution side you need to account for how the water's being distributed throughout the pipes individually at Holcomb Boulevard versus Hadnot Point. So that was another recommendation.

MR. PARTAIN: Morris, question here. Currently, the Hadnot Point wells, are they automated as far as operating? Can they be operated like I believe Holcomb Boulevard during the '80s were?

MR. MASLIA: Holcomb Boulevard has always been automated.

MR. PARTAIN: And what about Hadnot Point?

MR. MASLIA: I believe they say now, I think Hadnot Point is now automated, but it's not the same type of automation that Holcomb Boulevard is. That goes back to their SCADA system. They have a different SCADA system at Hadnot Point than they have at Holcomb Boulevard.

MR. PARTAIN: Do you know when they became automated?

MR. MASLIA: No, we probably have that. I don't have that off the top of my head.

MR. PARTAIN: The reason I'm asking the question is for when you're mentioning well cycling, when you I would imagine having an automated well operating cycle versus a manual operated well cycle, you're going to get different behaviors.

MR. MASLIA: Not in this case because we've spoken at this at length with the operators,

the camp water utility people at Camp Lejeune, and because they had to go out and take a water level measurement when the well was not operating versus when the well was operating, depending on the status of the well, the wells didn't automatically just come on. In other words because they went out and took water level measurements.

So it's automated from the standpoint that if it's running, it's running and it'll automatically keep running. But if they had to go out there and take a water level measurement, then they would have to shut it down for 24 hours. So they'd manually shut the well down and go out there and take the ^.

And I think what you're probably envisioning is an automated system where if there's a certain amount of demand, then all of a sudden a well turns on automatically. And there's a number of wells that could, and the system optimizes which wells would come on. And that's not how they operated it at

Holcomb Boulevard.

MR. ENSMINGER: At Hadnot Point.

MR. MASLIA: Either one. It basically was a manual operation.

MR. ENSMINGER: Well, didn't you say Holcomb was always automated?

MR. MASLIA: It's automated. It is automated. They can automate it from the control center here. That's automated. It doesn't automatically come on by itself.

MR. ENSMINGER: It doesn't automatically cycle.

MR. MASLIA: That's correct. That's correct.

Anyway, and there's some other nuances in terms of modeling; we have uncertainty and things like that.

Going on to calibration, one of the, I guess the critiques that we got as you read in Chapter A or Chapter C or F of our report, we established some pretty deterministic calibration standards or calibration targets.

And we use those really to help us calibrate the models. The panel had no issue with us doing it to help us in calibration, but what they had the issue of is us putting there, publishing them as targets because there are no really established targets.

There are procedures to calibrate, and then they probably had a very good point there, and so you can use them to help you calibrate the model. But to set them out there as calibration targets that we met or didn't meet, depending on your point of view, they thought that was probably carrying it beyond where we should have, and I think that they had a good point on that.

Also in terms of calibration felt we should spend more effort in getting more information on the model parameters referred to parameter estimation. There's some modeling software and some techniques. And because we have much more information at Hadnot Point, we are, in fact, doing that.

That'll help improve many kinds of modeling that we do to see how the parameters behave.

In terms of the epidemiological study needs, the panel members concurred that, in fact, the study could be accomplished. In other words our goal, as we did with Tarawa Terrace, was to get monthly values. And the panel did concur that that could be achieved at Hadnot Point and Holcomb Boulevard given some of their other recommendations to be implemented, but that was doable even down to the months.

And they also, I think, suggested -- this is really for the epi people but I'm just reporting on it -- that perhaps that the epi study be extended beyond in utero and one year to a time of diagnosis. I think that was one of their recommendations. Again, that's more to do with the epi study side than the modeling side.

They did think that it would be difficult to model the interconnection between

Hadnot Point and Holcomb Boulevard. The issue is the well cycling. And, again, I've indicated that we are addressing that, we intend to address that, as we speak.

And they did feel that that period between January '85, the two-week period January '85 to the first week in February, where the fuel contaminated the Holcomb Boulevard distribution system, they felt that could be used to assist in the calibration process of the water distribution model.

And, again, you have system-wide contaminant concentration data which is very good in terms of model calibration for that two-week period. The down side is you only had one contaminated well. Every other well was shut down. It was unknown at the time that the well was contaminated. So that does not really give us insight on the well cycling issue.

But that was their recommendation is to use it because it is a nice dataset that's

not available for any other time period where you have measurements throughout the distribution system.

MR. BYRON: So what you're saying is that these measurements over that two-week period will calibrate your system accurately enough to determine what was going on throughout the whole system once the other wells were online.

MR. MASLIA: Not necessarily, it will give us a handle on it. And the reason it will help us to calibrate, the reason it probably, among other reasons, why we cannot say definitively that it's a unique calibration over time is because you only had one well pumping at the time.

Even if you had a half dozen wells that would give us more power to the calibration. But because we only had one well pumping, we can -- in water distribution system modeling there's a limited number of parameters which we can adjust, amount of roughness --

Yes.

MR. WILLIAMS: What do you mean you only had one well pumping?

MR. MASLIA: There's only one contaminated well.

MR. WILLIAMS: Oh, one contaminated, okay.

MR. PARTAIN: But that well was mixed in with the others that were pumping uncontaminated.

MR. MASLIA: Right, but I'm saying you had a limited number of wells pumping under that scenario.

MR. WILLIAMS: But you also have that chart during that time period that shows which wells were on.

MR. MASLIA: Yes.

MR. WILLIAMS: It's not just that you have contaminant data. You also have a chart which shows you exactly which well's pumping which day.

MR. MASLIA: That's correct.

MR. WILLIAMS: So that's ^.

MR. MASLIA: Well, not according to the panel. And I understand their reasons because that presents only that time period. It's a short time period. So I'm not saying we cannot use it for calibration, but it won't be necessarily the ultimate --

MR. STALLARD: Scott, would you like to join us at the table?

MR. WILLIAMS: No.

DR. BOVE: Do you need to repeat the question maybe?

MR. MASLIA: The question or the comment was that there is a chart during that time period that has been established that represents that time period of which wells were on and off and may be used for calibration, and he's correct. And my response was that you heard from the panel is that it is good field information, that's that one point in time, and obviously, does not necessarily represent a general historical times of the operating.

MR. BYRON: The NRC made recommendations

concerning the water modeling at Hadnot Point. Is that, how does that compare with the actual recommendations from your expert panel meeting in April?

MR. MASLIA: It disagrees with it.

MR. BYRON: It disagrees with it?

MR. MASLIA: It disagrees with it, yes.

MR. BYRON: And what...

MR. MASLIA: Well, I'll just comment on our expert panel said that we could obtain reliable results on monthly time scale. That could be used. The NRC disagrees with that.

MR. BYRON: Is the NRC the members, the members of the NRC, were they qualified to make that recommendation? I assume that the expert panel that you brought in in April is qualified to make that recommendation.

MR. MASLIA: I'll say about the expert panel. The expert panel specifically picked people on there with a national or international qualifications or reputations that could speak to not only water modeling,

but different aspects of water modeling. For example, uncertainty analysis, parameter estimation, model calibration, fate and transport, water distribution systems, geohydrology.

And we did that on purpose because that was the sole focus of our expert panel, as well as epidemiology because we had some interface. I thought, we had 13, I thought it was a very good mix of background and expertise and provided us feedback.

I cannot speak to, because I don’t know what process they used or whatever, the NRC as to the people that they chose who did as they were conducting their investigation or study -- I’m not sure of the correct term. Their water modeling person or geohydrologist corresponded with us back and forth for either additional information or query, asked us why we did certain things, and we did provide that person with our thoughts on that by e-mail and in writing as well as provided the NRC with

all of our published reports and unpublished data like on the DVDs and things like that.

MR. BYRON: So it would be safe to say that the NRC is kind of a conglomerate of experts in different fields but not necessarily all in water modeling or in --

MR. MASLIA: They were not all experts in water modeling.

MR. BYRON: Okay, and then the gentleman that they had corresponding with you concerning water modeling was only one individual --

MR. MASLIA: Yes.

MR. BYRON: -- or were there multiples?

MR. MASLIA: No.

MR. BYRON: So that one individual's --

MR. MASLIA: There was one who consistently corresponded with me. They had another person who had some, I guess, experience in water modeling.

MR. BYRON: And then there were how many individuals on the expert panel meeting in

April as far as experts?

MR. MASLIA: Oh, probably about eight or nine of them I would say. We had 13, so we had three epidemiologists.

DR. BOVE: And the epidemiologists have experience doing drinking water epidemiologic studies with models, so they also have experience on that side of the fence. Now, on the Committee, certainly Savitz, the Chair, has done work with disinfection byproduct drinking water study and used models in particulate, right, disinfection byproducts. So he has experience in using models in epi studies as well. I don't know about Olshan, but I do know about Savitz.

MR. STALLARD: I think if I could defer this NRC discussion until the next, after Morris' presentation, Dr. Clapp is going to present somewhat.

MR. MASLIA: I actually just have two more topics. One was additional data needs, and they just made the recommendation to obtain

whatever additional data we needed from the Navy and Marine Corps. We actually have done that.

We went up there at the end of May, myself and another staff person spent four days up there going through the library, the vault, the warehouse, wherever the BAH index is housed and requested certain documents and updates on any of the GIS lenders that they have just to be sure that we've got the most updated information. That should be coming to us shortly. They're putting that together for us.

And, finally, the timeline, and if you recall we had projected last year, the year before actually, it would be done by December 2009, and they concurred that completing the historical reconstruction modeling tasks for Hadnot Point would be, it would be unrealistic to expect it to be done by December 2009, that additional time would be needed. We are in the process of internally redoing the timeline

again both in light of the expert panel recommendations on how we should approach the modeling and things of that nature.

And that's basically where we are now. We are, just to bring you up to date on Hadnot Point in general, we have internally received the data report from all the data that we have reviewed and compiled some of which, a few of the tables, we presented at the expert panel. And the staff is reviewing that internally.

We've separated out now in two, we'll have two reports. One is on the installation/restoration sites and that we have the complete draft under review. We have our process for that is once we complete internal review in the internal staff here, we'll get items that we feel need to be changed or modified.

Modify it and then at that point we will send both for Agency clearance as well as a copy to all stakeholders. By all stakeholders we mean a member of the CAP but

keep it within CAP's review as well as the Marine Corps contact, the Navy contact, U.S. EPA Region 4. There was somebody else.

MS. RUCKART: USGS?

MR. MASLIA: Not USGS, maybe the Dr. Aral at EPA from their Ada, Oklahoma Lab, different from Region 4, who was on our expert panel. And so we'll send it to them just to get feedback on that as well as to any one or two external peer reviewers that we will select to review it. But that's probably what you're thinking, we haven't selected those yet to review that report. And so that will complete that process for that report.

We're currently going over a report on the underground storage and above ground storage tank as I speak. And so that is not in the report format.

MR. PARTAIN: Morris, on the USTs and everything, you said you were doing a report. Are you finding data that you're going to need to re-run the Tarawa Terrace model?

MR. MASLIA: No.

MR. PARTAIN: What are you finding with it?

MR. MASLIA: We will not be re-running the Tarawa Terrace model, and I'm sure there are some UST reports there on Tarawa Terrace. I think I saw one or two of sample data, but it would not impact the Tarawa Terrace models.

MR. PARTAIN: Why would it not impact the TT models?

MR. MASLIA: Because I don't believe it would give you any substantial improvement over -- what you need to look at is the goal -- for all the modeling -- was what was the monthly concentration. What was the monthly concentration in terms of PCE or its byproducts at the water treatment plant. That's what the epi study needs.

MR. PARTAIN: Well, let me ask you --

MR. MASLIA: Let me finish. In terms of that because one of our recommendations actually from the expert panel, and even the NRC Report, was to go out and gather

additional field data. So you're going to go out and spend several millions or tens of millions of dollars to get a handful of data points. And the question is, is that going to significantly reduce that range of concentrations that we came out with in Tarawa Terrace, which is between two and three.

In other words if an actual field reading is 50 micrograms per liter, our model says we can come within a range of 25-to-100, a range of two. Basically, that's what the model predicts which is good enough for what the epi study needs. So the question would be then is spending an extra effort and time and recalibrating the model to a handful of points, is that going to significantly change that range. And the answer is no.

MR. BYRON: So then what you're saying is the actual PCE readings for TT and your water modeling are close enough to what the actual readings were historically to do a credible epidemiological study then?

MR. MASLIA: Yes. At Tarawa Terrace they're more than close enough.

MR. PARTAIN: Okay.

MR. MASLIA: I mean, and I've got -- and that's why I brought this slide here, and I'll just pull it up here.

This appeared in Chapter A, and so the blue line is the, you can consider it the average value. That's the initial calibration, and the yellow represents or the band represents the range of values in a probabilistic range. And if you look at those values in the tables posted on the website as well as in the back of Chapter A or Chapter I, which is the probabilistic, you'll see that it ranges around, for this particular set of simulations, around two, a factor of two. You'll also notice I don't have a pointer so I'll just use my hand. But the measured data up here are within the bands, within the yellow bands. They're not outliers way out here or way above. So the data that we have

are right there.

Now, if we now look -- and I want to pull a different tab -- if we plot this a different way, if you want to look at it, and look at high/low in terms of this right here. Let's just look at this one. That's that same chart I just showed you, but now what I'm plotting is the range versus the simulated value or measured value.

You can see right here the pink lines would be your range where you'd like to fall in, but the measured data -- this is at the treatment plant. This is what the epi study needs. This is not a well. This is at the treatment plant -- fall within that range here. And even where we do not have information here, where we only have non-detects, most of our simulated values fall within the non-detect range, whatever that detection limit is.

And I would seriously defy anyone to convince me that they could get any closer

than that no matter really how much more information you had other than if you had the actual pumping records. Remember, we only had a handful of wells at Tarawa Terrace pumping. Or that that is not sufficiently, the variance is not sufficiently small enough to be used for the epi study.

MR. BYRON: The reason I bring that up is as a layperson I can see that chart, it looks like it practically mirrors so to me, of course, it looks like that. But as a scientist, to the individuals involved in these type of studies, I just want to make sure that it is clear enough and close enough to be used in a reliable study without someone coming back and saying, you know, like the NRC, oh, that's not close enough, a lot of contradictory statements made by them.

MR. MASLIA: I will get to that later, but as --

MR. PARTAIN: I want to go back to the --

MR. MASLIA: -- for Tarawa Terrace and we

did provide that information to the NRC; they had this information. And, in fact, one of the things that we've done with all our reports, we provide the model input sets, the actual data to run the models so that anybody because reproducibility is a key factor in any scientific endeavor. So anybody if they wanted to reproduce it or say they can reproduce it should be able to do that. And the NRC did have that information.

MR. PARTAIN: The question I had is I was talking more about benzene because the USTs are dealing with fuel products. And my understanding of it there's quite a few USTs in Tarawa Terrace throughout, for example, TT-1 and TT-2 there were one 10,000 gallon storage tank for each of the schools. And at TT-2, that was upgrading it from well TT-23 and to an extent maybe TT-26.

My question, I mean, I heard what you said about going out and resampling. They've remediated a lot of this so sampling was

really not going to be an option because the stuffs already been somewhat remediated.

But the question I have is if these tanks throughout, like for example, there's two other tanks I found that are located near TT-23 with the maintenance shop. These tanks are contributing product to the aquifer because they're leaking. Does not the presence of these tanks and the fact that they were leaking create more opportunity for that product to be in the aquifer and be picked up in the wells?

MR. MASLIA: Maybe in the aquifer and perhaps in the well, but we did not have any sample data at the treatment plant.

MR. PARTAIN: But unless you're specifically testing for benzene, you're not going to find it.

MR. MASLIA: Again –

MR. PARTAIN: Because all through '86 they were looking for benzene, and there's benzene hits popping up anywhere between three, I

think the highest I saw was maybe eight or nine parts per billion, but that was after you had wells taken offline, especially TT-23, which was separate.

MR. MASLIA: At the time that we did Tarawa Terrace, we decided that the, again, we would go after PCE and its derivatives or its byproducts. We would not go after benzene. We do mention benzene in the Chapter E report.

MR. PARTAIN: That's why I'm asking the questions because it's there.

MR. MASLIA: Again, we did not model benzene. And, in fact, I think if you wanted to model benzene correctly -- Dr. Aral, correct me -- but we'd had to use an L-NAPL because it floats. Yeah, yeah, you'd have to use --

DR. ARAL: It depends on the concentration.

MR. MASLIA: -- depending on the concentration we'd have to go to a much more sophisticated, complex model.

MR. PARTAIN: Are your write ups going to

reflect that so we don't have to battle this down the road saying –

MR. MASLIA: We are complete with Tarawa Terrace as far as I'm concerned.

MR. PARTAIN: But I mean, are they --

MR. MASLIA: We're doing benzene at --

MR. PARTAIN: Hadnot Point.

MR. MASLIA: -- Hadnot Point. We're doing benzene at Hadnot Point.

MR. PARTAIN: What I'm concerned about is I think, especially with the UST issue, I'm concerned that we're leaving on the table a possible benzene issue at Tarawa Terrace as well simply because the fact these tanks, I mean, they're all over the place there. They're leaking, and we -- I shouldn't say we -- I mean ATSDR may have left that issue on the table.

And I understand you're not looking for that with the TT model, but that needs to be pointed out if you're not going to assert that the values you found in TT concerning

benzene are not going, not accurate because you're not looking for it. You need to reflect that in your report, too, so it doesn't come back a year or two later and --

MR. MASLIA: All I can say at this point is we are just now going through the UST reports. So I can't tell you how many we have and what hits we found, what we haven't --

MR. PARTAIN: Well, we've been looking at them for awhile. I mean, there's quite a few USTs in TT, some rather big ones. And you read through them, and they're all leaking. I mean, you read the description of ports when they pulled the tanks out in the '90s, and they're describing free-floating product in and around the tank. So it was in there. Now, can we get to find out how much was in there? That's another question.

MR. BYRON: But even if, like Mike says, that you mention that it may be sufficient. Because it does, it impacts the victims severely. I think I read, you know, a medical

dictionary concerning aplastic anemia, which is what my oldest daughter has, and it said 40-to-70 percent of all cases of aplastic anemia were caused by benzene exposure. So, I mean, to me as the victim here and my family as the victim, that's critical especially since she has that disease. And I don't know how many others have been reported, maybe not that many, but --

MR. MASLIA: All I'll tell you is we did mention benzene in the Chapter E. We did not specifically target, but we did mention the benzene around wells TT-23 and TT-26. So it was not --

MR. PARTAIN: Well, you gave data points for those, it's not just a mention. You're saying that exposures were at 2-point-whatever parts per billion. I don't know what the totals are but --

MR. MASLIA: We mention, I think we mention concentrations.

MR. PARTAIN: Concentrations, so what I'm

asking is that language going to be reflective that this is not an accurate --

MR. MASLIA: I have no plans at this point to go back and modify those chapters of the Tarawa Terrace reports; however, we do still have one particular structure out there, Chapter K's supplemental information. And what I can tell you is I will look at what we're looking at now and if it appears to be, if there's additional information just on benzene, I would see no problem in listing it in the Chapter K report as supplemental information.

MR. STALLARD: So, Mike, your concern is that it's not left on the table as --

MR. PARTAIN: Well, the UST issue with TT, I mean, I think we're leaving the benzene with Tarawa Terrace possibly on the table there.

Now, let me ask you, Morris, if you guys finish doing your review with the UST reports in Tarawa Terrace, and it looks like there's something going on, would you

reconsider going back and trying to do that?

MR. MASLIA: I wouldn't want to comment on that now because I don't know what's there. I really, really don't.

MR. PARTAIN: I understand.

MR. MASLIA: The models at TT, assuming there was sufficient concentrate of benzene in the aquifer, would not be applicable to modeling benzene.

MR. STALLARD: We've got a few minutes before our break. Are you about done?

MR. MASLIA: I think that's --

MR. PARTAIN: I just want to hit you another benzene question but Hadnot Point this time.

MR. MASLIA: Okay.

MR. PARTAIN: November 19th, 1985, I'm looking at a handwritten table for the Hadnot Point water treatment plant and the finished water. And they're showing a reading of 2,500 parts per billion of benzene, and methyl fluoride at 2,600 parts per billion and a toluene reading of 100 parts per billion. I

have not been able to locate the analytical datasheets to support those readings. Do you all have those? Do you know --

MR. MASLIA: Not for that. I think that's the reading at the WTP. I think it shows an asterisk by it or something like that.

MR. PARTAIN: Well, not an asterisk, but they wrote not representative which --

MR. MASLIA: Not representative, and we're just reporting it as that, in other words, in our referring to as Chapter C of the Hadnot Point report series which would be the data report, I have. And in the tables we're just reporting where we obtained the information from, what document.

MR. PARTAIN: Well, the document attached here says while the periodic readings for benzene are felt to be a quality control problem in sampling and/or laboratory results. I mean, that wasn't the only benzene you had, but I've heard that line before and, you know, with TCE and PCE, but --

MR. MASLIA: We do not have, to my knowledge, the actual lab analysis.

MR. PARTAIN: Okay, because I know we have all through ’86, and why is this timeframe missing? Do we have an explanation for that?

MR. MASLIA: I can’t answer that.

MR. PARTAIN: But you said you’re noting it, but is it being used in the model, that hit?

MR. MASLIA: Well, we haven’t developed the model yet for –- and we have not, again -–

MR. PARTAIN: Does somebody have trouble with that -–

MR. MASLIA: -- decided on a specific modeling strategy other than to take say the recommendations of the expert panel as to an approach, but we have not necessarily started constructing treatment water plant yet at Tarawa Terrace. What we’ve done to date, and one of the recommendations of the expert panel ^, is to go back through the data and do some more analysis in terms of statistics and estimation of parameters needed for modeling

with the abundance of data that we have.

So that's what we're looking at, and I think we presented some of this at the expert panel. For example, concentration with depth, concentration aerially and see if we can determine some modeling scenarios or how to build our model around that using some of this information from the data. So we're just not at the point where we have really done any kind of modeling per se at Hadnot Point.

MR. PARTAIN: I mean, because what's concerning, I mean, these readings from '85 are taken after two's offline. So where's the benzene coming from? I mean, are we dealing with pockets in the deep aquifer that are being randomly sucked up or...

MR. MASLIA: I don't know.

MR. ENSMINGER: Well, when you had a 16 foot thick plume.

MR. STALLARD: Okay, so we're at a point there, thank you for bringing this onto the table, Mike. Clearly, Morris has heard the

message.

And we thank you, Morris, for your presentation. Let's take a --

MS. RUCKART: Chris, can you ask if Sandra joined?

MR. STALLARD: Sandra, are you on the phone?

(no response)

MS. RUCKART: I heard a beep.

MR. STALLARD: I heard a beep. Is there anyone new on the phone who has joined us who has yet to announce their presence?

(no response)

MR. BYRON: And is the EPA present here today, anyone?

MR. STALLARD: I don't know. Is anyone here from the EPA?

(no response)

MR. STALLARD: Apparently not.

MR. TOWNSEND (by Telephone): Chris.

MR. STALLARD: Yes, Tom.

MR. TOWNSEND (by Telephone): This is Tom. Is the broadcast, is the TV part fixed yet?

MR. STALLARD: It should be. We're going to reboot the system, Tom, as soon as we take a break and hopefully it will be back live and visual for you.

MR. TOWNSEND (by Telephone): Okay, that'd be great.

UNIDENTIFIED SPEAKER (by Telephone): This is Al with ^. Yes, it is live. I'm looking at it right now.

MR. STALLARD: Okay.

MS. RUCKART: Ask if the closed captioner's on.

MR. STALLARD: Yeah, is the closed captioner on still, please?

CAPTIONER: Yes, I'm still here.

MR. STALLARD: Thank you very much.

So we have an unidentified beep there. That's all I can say. Let's come back at, please, 25 'til. We will resume then with a discussion of the NRC. Thank you.

(Whereupon, a break was taken from 10:19 a.m. until 10:40 a.m.)

NRC REPORT DISCUSSION

MR. STALLARD: We're going to proceed now with a discussion of the, well, we're going to start here with the contaminated water supply at Camp Lejeune. And Dr. Clapp is going to lead us through a bit of a discussion.

DR. CLAPP: What's up on the screen is a PowerPoint presentation that was made by, I believe the Chair or perhaps the Chair appointed some members of the NRC Committee, and I got it from Perri. And I thought it was kind of a good way to sort of start this discussion is to see what the people who were reporting back to their sponsor said about what was in the report. And then after that we can open it up to, I have some additional comments.

DR. SINKS: Dick, it would be helpful to me and maybe to the rest of the members to know if you had any relationship or involvement with this. I understood you may have been part of the peer review. If you would just

describe that for us so we understand as you're going through this what your involvement was.

DR. CLAPP: Sure. I was a peer reviewer. I also presented to this group. I think it was in 2007 as I recall in November by telephone. I wasn't able to, they had been meeting at Camp Lejeune, and it was sort of an open comment period.

And I commented at that point as a member of the CAP what I thought was happening and what the health studies would likely do. And at that point said I thought this was an important opportunity to learn some things that shouldn't be missed. That's what I conveyed.

I actually was invited to do that by one of the Committee members, Dr. Amy Kyle, who didn't wind up being on the final report. She actually, her father died, and so she withdrew before the final report so you won't see her name on the report. But she's a

friend of mine. We've had previous contacts.

Then when the draft of this report was available for public comment, or I guess it was circulated for peer review not for public comment, I was asked by Susan Martel at the NRC to be one of the reviewers, and I did. And it was, at that point it was in I think either late December or early January of this year, and I was asked not to discuss it because it was still in draft.

So here's the cover, and this is the members. The Chair is a well-known epidemiologist and somebody who I've met over the years and used to be the Chair of Epidemiology at the University of North Carolina School of Public Health, now is at Mount Sinai, and former president of one of the organizations that I'm a member of, the Society for Epidemiologic Research.

I won't go through all of these, but there are a couple of other people who are, I would say, environmental epidemiologists. One

is Francine Laden, in the middle here, from Harvard University, who I know quite well, and I've lectured in her class about something else, not about Camp Lejeune. And Bruce Lanphear, who used to be at the University of Cincinnati, very well-known pediatric epidemiologist and one of the leading researchers on lead poisoning and its effects on child development.

Andrew Olshan is now the current Chair of Epidemiology at the University of North Carolina School of Public Health. John Nuckols, everyone calls him Jay Nuckols, is a well-known fate and transport person at the Colorado State University. He and I are both members of the same organization called International Society for Environmental Epidemiology.

So I guess what I'm saying is I know some of these people, and I expected more of them actually. I think what actually came from this was it didn't really reflect

epidemiology as we know it, and as I think they know it. So there must have been something else at work or this is a committee so the process... What do they say? A camel is a horse that was designed by a committee. And I think that's what we got here is sort of a camel. I can't resist the editorial comments as I go along here so forgive me for this.

So their task, this is what they, sort of a charge, this is what it's usually called, was to review the scientific evidence on the associations between exposure to contaminated drinking water at Camp Lejeune and adverse health effects. That's sort of the overall purpose of this NRC Committee.

It was for sub pieces of that, whether there's a statistical association, whether it's causal, strength of the evidence for a causal inference and other scientific considerations. So this is mainly considering the known contaminants that were in the

drinking water at Camp Lejeune and whether there are causal associations between those and other health outcomes.

And then finally what should be further done or what future studies should be done or what should be done to complete existing studies at Camp Lejeune. So that's sort of the range of the topics of this report. The sponsor as it says is the U.S. Navy.

MR. STALLARD: What does that mean? Can you explain the sponsor? How does that impact?

DR. CLAPP: I don't really know how to explain how it impacts. It's the agency that requests, usually the U.S. National Academy of Sciences acts as a consultant to Congress. So often it's a congressperson who asks for the NRC to do some kind of report, and they appropriate the money for it.

When it's the Department of the Navy --

Go ahead, Mary Ann.

MS. SIMMONS: Excuse me. Just so you can know, the Department of the Navy was told by Congress to do this report. So sponsor in this case really means DOD funded it at the request of Congress. It's in specific language.

MR. WILLIAMS: The Marine Corps funded it.

MS. SIMMONS: The Marine Corps funded it. Sorry, Scott.

DR. SINKS: The National Academies do a lot of different reports. I think more frequently they're doing reports for federal agencies or other agencies than for Congress. Occasionally, Congress will write into legislation either authorizing for appropriations directing an agency to provide funding for an issue like this. That's what occurred here. And I believe it was the same language in the same year that directed the Department of Defense to do the health survey. Those two things were done in the same language. It was the authorizing bill in 2006

or 2007.

MR. ENSMINGER: Yeah, who wrote the charge for it?

DR. SINKS: Usually a negotiated charge between the sponsoring agency and the National Academy. I can tell you we dealt with the academies several times. This isn't one we dealt directly with them. But they are very, very -- let me put it this way. In the same way that we develop our --

MR. STALLARD: There's a seat right here if you'd like to join us.

DR. SINKS: In general there is purposely a very significant firewall established between the National Academies and the sponsoring agency in terms of many aspects of their reports or the processes. I think the general thing is to negotiate a statement of task.

In other words the sponsoring agency may say this is what we want you to do. The academies will frequently come back and say we hear what you're saying. This is what we're

going to do. And that's usually negotiated. But once that's occurred, there's a very hands-off process in terms of anything to do with the selection of the members, how they're doing it, the peer review.

Probably as much as we try to do our own expert panels and try to be both open and objective and see that they're done without influence of them, or balance if you will. But the academies are very, very focused on that because their whole reputation is based on that. So they, that's what they do. That's my experience with them.

DR. CLAPP: I'll give you some of my experiences which is two things, the National Academy as well as the Agent Orange Panels, a series of them actually, where I testified on our results from a mortality study of Vietnam veterans in Massachusetts. And at that point that was the first of the big, thick Agent Orange in the Veteran Reports.

It was pretty much as you described it

I think. It was in the early 1990s, and it was a pretty broad range of people. The Chair was -- I'm trying to remember the name of the Chair. I knew some of the people who were on it, but I can't remember the Chair at that time.

And I think it came out with a very important -- this was a, this was requested by Senator Kerry. And the legislation called the Agent Orange Act of 1991 actually established this process with the National Academy of Sciences. And I think it actually went quite well for several years.

And there were these lists of illnesses, cancers mostly but also other illnesses, for which the veterans should be compensated based on the evidence. And they made that recommendation to the VA, and the VA did it. Actually, the VA did even a little more sometimes.

The idea of the hour I think was to give the benefit of the doubt to the veteran,

that if there is substantial evidence in the scientific literature, say that, and then the government should respect that thing for the sacrifice of the Vietnam veterans, you know, bend over to give them compensation. To me that's precautionary public health, or in this case compensatory public health that is valid. And I participated in it. I actually liked what they came up with.

The second one, actually, I did a couple, but the second one was more recent in 2005 I think it was, the NRC -- sorry, the National Academy of Sciences assembled a panel to look at the EPA dioxin assessment for about the fifth time. It had been assessed and reassessed and reassessed several times.

I've been part of those for the EPA Science Advisory Board. But this one was the National Academy of Sciences and had a quite diverse panel, and it included people with epidemiologic expertise, toxicological expertise, but it really just kind of focused

on a very narrow criticism of EPA for the way they calculated their risk beyond a certain quantitative risk assessment. And it didn't advance anything.

This was 2005. Nothing's been done as a result of it actually. I testified. I said what I thought about the epidemiologic literature about dioxin said by now, and as far as I can tell that didn't really appear in this final report. It really focused in on this very narrow, and I think, irrelevant criticism of EPA.

So there's something to be -- well, let me just say I think that NRC panels vary. It certainly varies on who makes them up and there's some kind of an internal process that happens within the panels. I know several people who've been on these panels. They usually are asked not to say anything about that internal process, not to go public with it.

But there have been battles. There

was on this dioxin panel, and the result was that the people who I thought had the best view of it didn't get their views incorporated into the final report. I think that happened here, too, with this panel. I'm doing a lot of editorializing here so I could keep doing this and we can talk about it or just go through what they did.

MR. ENSMINGER: Well, I just wanted to, there were some points brought up when you first started. Number one, I know the Department of the Navy was heavily involved in the writing of the charge to this panel. That's number one. Number two, you were a peer reviewer of this report.

DR. CLAPP: Yes.

MR. ENSMINGER: The draft report.

DR. CLAPP: I was.

MR. ENSMINGER: Are any of your, did any of your peer review comments show up anywhere in the final report?

DR. CLAPP: No, they did not. And I also

specifically sent them a reference to actually one of Morris' Journal articles published peer reviewed, and that didn't appear in the final report either.

MR. ENSMINGER: How many people do they normally have peer reviewing a report such as this?

DR. CLAPP: I don't know.

MR. ENSMINGER: Three?

DR. CLAPP: There were probably more than three on this one.

MR. ENSMINGER: Would you be willing to provide me a copy of your peer review comments?

DR. CLAPP: Sure.

MR. ENSMINGER: Thank you.

DR. BOVE: They actually list the peer reviewers in the preface. So there's several including Dick on the list.

MR. STALLARD: Dick, a question. Are dissenting perspectives on peer review generally included or not?

DR. CLAPP: I think that depends on the panel and the composition and even what the Chair wants.

MR. ENSMINGER: Will the NRC, will the National Academy give us the peer review comments that were submitted for these reports from the rest of them?

DR. CLAPP: You have to ask them. I don't know how that works.

MR. PARTAIN: Dick, going back on the charge, there was a similar product by the, I don't know if it was the NRC or the NAS, that was done back in 2003 considering the Gulf War. In looking at that charge there's a lot of similarities. Can you comment on that or...

DR. CLAPP: Yeah, actually, the charge, it's about the level of evidence and whether there's sufficient evidence of a causal association. Sufficient evidence of an association or the inadequate or limited evidence. And so the top level there,

sufficient evidence of a causal association, that's new. That didn't appear in the Gulf War literature reviews. It was really a sufficient evidence of an association. Whether we can say for sure that that chemical caused that particular disease or that mix of chemicals caused that particular disease doesn't matter if it's sufficient evidence of an association.

For the purposes of compensating Vietnam veterans, that was the top level. This is a new one. This is saying sufficient evidence of a causal interpretation, which I think is, I don't know that it even still applies to the Vietnam veterans or the Agent Orange ^.

But that's like putting the bar higher, and for epidemiologists or scientists in general, it's sort of like beyond a reasonable doubt is the sort of legal equivalent. This is murder. There's no question. This is not a civil complaint.

This is murder and this is enough evidence to prove it. That's what the top level now represents.

And it's not giving the benefit of the doubt to the victims. That's for sure. And so that's why it's a little curious to me why it appeared in the Gulf War Report as that new level of review. I don't know the history of that. There were some people at the NRC at the time that were involved in this who had previously worked for a company called Exponent, a woman named Mary Paxton (ph) in particular. So I think it would be useful to review her role in that. I believe she's no longer at the NRC, over at the --

MR. ENSMINGER: EPA.

DR. CLAPP: No, she, well, she may have been at EPA a long time ago, but she was at Exponent. Anyway, that's sort of an aside, but it's a very high level of, sort of a very high bar to set I think for the level of evidence we're talking about here.

MR. PARTAIN: I want to ask you, on the higher level. Is that a bar that can be achieved by science or is that something that's --

DR. CLAPP: It's a judgment. I mean, we were talking earlier about the expert panel and water modeling and then this expert on the NRC Committee. I mean, this is cliché. Experts will disagree. That is definitely true, and that has always been true. And I don't think, there's no bright line that says, okay, everyone is going to agree with this. There will be people who say I agree with that, and others that say I don't, and then the battle goes on. So at some point it becomes a judgment. The agencies have to do that. They have to weigh the evidence and say, well, our best judgment based on who we are and what we know is that we should do this. Maybe other people will say something different, but --

MR. ENSMINGER: We need to find out who

wrote the causal inference in there. That's our mission.

DR. CLAPP: Yeah, it goes back to the Gulf War.

MR. PARTAIN: Because it just seems like you're saying the level's been raised to the point that we want a chalk outline of the body on the ground with the gun sitting next to it, with the spent casing, the round sitting next to where the chalk was.

And it just seems to me, I mean, from what I understand of science, rarely does science get to that point to be able to spell everything out clearly. But it doesn't mean that what science can do is useful or not useful.

DR. CLAPP: Well, science is part of the picture clearly. It's not the final judgment. It's part of the picture.

MR. PARTAIN: But in the report, the way it's constructed though, it's trying to make that, is it not, in your opinion?

DR. CLAPP: You know, to be honest, I've talked to two people that were on the NRC panel, and then as you know, I wrote this statement that five of us signed. And one of the other people who signed it talked to the Chair, Dr. Savitz, and they actually thought they were doing a favor to you all. That this was to say, look, let's not worry about what the science can or cannot tell us. Somebody, the Department of the Navy or the Department of Defense, should just decide how they're going to compensate people, just go ahead with that and not wait for the science. I don't think that was a favor. I think that was naïve, to be honest.

MR. PARTAIN: Well, I mean, it may be a favor if you leave out the part that says that you didn't know we were exposed. It was unlikely those exposures led to anything.

DR. CLAPP: Yeah, I think they're trying to say we don't know. Well, some of the people that I talked to, anyway, said we don't know

whether the people who were exposed actually got the disease because of their exposure. But that's not what's important. What's important, the two people I spoke to, is people were exposed, and we said that.

And so we, the NRC panel, sort of shifted the focus onto let's deal with the compensation for exposure not that the level of that caused somebody's disease or some study says that caused somebody's disease. That's what they thought was a favor.

MR. PARTAIN: Because the toxicology part of the report says something completely different.

DR. CLAPP: The toxicology -- as I said, there was a battle in this panel, and the toxicology part is the weakest part. And it's, I'd say, most off base.

MR. PARTAIN: How many toxicologists were on the panel? Do you know?

DR. CLAPP: I think there were two.

MR. ENSMINGER: I understand that this

Janice Yager, who is deeply involved with industry, was the main writer of the toxicological portion of the report.

DR. CLAPP: That could be. I don't know that particular detail.

DR. SINKS: Can I just make a suggestion here? I think if you want to hear about the report, it would be great to have Richard go through it. It's really what I really am interested in hearing is this dialogue and the feelings of the CAP members in terms of this report, its implications on you, its implications on us, which is why I really put this down under the agenda was that we really wanted to hear what your thoughts were on it. At the same time I really want, if it's valuable to go through this report that Dick is doing, I think we should go ahead to do that and have that discussion. Because we could interrupt him on any one of these slides. I've seen all the slides. David Savitz presented this to us, and I presume

this is the same thing he presented in North Carolina as well. So I leave this up to you, but --

MR. STALLARD: It's a highly charged topic for one thing. So would you agree to, I guess, hold questions to the end? Is that what you're --

MR. PARTAIN: Yeah, we both want to bring out the charge issues.

MR. STALLARD: It was useful clarity, I think, in terms of setting the context for those who might not know how they operate. Thank you.

DR. CLAPP: So I think we got through the sponsor and how that happens. Tarawa Terrace I think they actually thought that was well done, and it was interesting and all of that, but then they have these big complaints about Hadnot Point because it's so complex.

This is just their description of what the reasons for this complexity are: multiple sources, all of the stuff at the bottom. I

didn’t hear it was presented so I’m sure that Dr. Savitz had something more intelligent to say than what I just said. But at least this is the two topics that he included in his part of the presentation. And, again, the exposure assessment was nearly compiled. Apparently, they had no major issues with the Tarawa Terrace.

It was really the Hadnot Point exposure assessment where they felt that it was so complex that it actually couldn’t be done in a way that would be useful for an epidemiologic study. And so that comes up later, so let me just go through the four lines of evidence about health outcomes and epidemiologic studies on TCE, PCE and chlorinated solvents.

This is one where actually one of my co-signers of our statement had done a review of especially TCE. This is Dr. Dan Wartenberg, and he pointed out that the way this NRC Committee summarized the evidence was

weaker than the way another NRC Committee had summarized the same evidence basically in 2003. And in particular, there's a table in the IOM Report in 2003 about trichloroethylene, which, or actually, several solvents, which says that in those categories of exposure sufficient evidence of an association exists for mixed solvents, talking about these solvents.

And so this report steps back from that and says there's nothing for which there's sufficient evidence of an association in this Camp Lejeune situation. So that's, one wonders how that happened. If they were the same data, they obviously came up with a different conclusion about the strength of the evidence.

What else to say here? Toxicology studies on TCE-PCE, I'm not a toxicologist. I didn't pay as much attention when I read the report as to how they summarized that. But I'm told by others there's still plenty of

room for argument about how they summarized the toxicological studies, the animal studies on TCE and PCE. I agreed to talk about that a little bit later.

And then they reviewed the ongoing and previous epidemiologic studies of the Camp Lejeune population. I think all of this is by way of saying that they did feel that the Tarawa Terrace work was reasonable, and although it says at the bottom some of the codes and models are research tools and not yet widely accepted.

Maybe that’s true, but I know Morris writes books about this stuff, and those books are used in training people in how to do this work. So maybe they’re research tools, but they’re state-of-the-art.

Actually, as some of you know, I had a doctoral student at Boston University who did her dissertation on Cape Cod and the distribution of PCE in the drinking water pipes on Cape Cod. She’s learned from and

used Morris's work, and used the same EPA model in her doctoral dissertation. She's now a post-doc at the University of Washington School of Public Health.

I sent her this and asked her to take a look at it, and she said, I don't agree with this. I think there's much more to say about especially the ability of the Hadnot Point modeling to be useful for epidemiology than this report says. I just give you that. She's a student of mine. She's somebody who's learned actually these research tools and models that Morris has developed. And so she's a smart young lady, and so that's her take on how conservative this NRC discussion was.

And here's the bottom line, I guess, about Hadnot Point was the contamination scenarios are far more complex, as Morris said earlier, as the expert panels have said, as everyone says, so that it's a challenging topic to how to model the Hadnot Point. Dr.

Aral presented a simplifying approach at the expert panel of water modeling here in April, which I think might be the way forward. And so I don't know whether the NRC panel was aware of that, but it certainly isn't reflected in what they said.

Yeah, so here they say that the estimates for Tarawa Terrace can be used to determine whether people were exposed or unexposed. Actually, they leave it at that as opposed to different levels of exposure. And so that's their recommendation is that people who lived at Tarawa Terrace were exposed and the ones who lived somewhere else or somewhere other than Hadnot Point were not exposed and the epidemiologic analysis could be done on that basis.

I think that's actually silly and not worth paying any attention to. It's, you know, way too much effort has been expended and these models, as we just saw with Tarawa Terrace are sufficient actually for an

epidemiologic dose-related or exposure-related analysis. And here they do say simpler approaches for Hadnot Point should be used. Again, I don't believe that they incorporated Dr. Aral's thoughts in this report. They weren't represented here at the April meeting.

And here's where they give their take on the toxicity of, or the carcinogen of TCE and PCE, and they really think it comes down to a, for cancer anyway, to kidney cancer. I think that's way too limited. There's several other cancers for which there's very strong evidence. And then for these other effects, neural behavior and immunologic effects, again, different groups of scientists will look at this and come up with different emphasis. This is a very limited emphasis in my opinion.

The hazard evaluation, again, this is more of the toxicological than risk assessment part of the report. I didn't spend as much time on that as I did on the other parts.

There may be other people here in the room that may have something to say about their use of LOAELS, as they call them, in this discussion.

So here's the discussion of the strength of the evidence. I think we've already talked about these five categories. They do say on this slide that the 2003 IOM report used as a starting point, they used that as a starting point, and then they updated the literature. Well, if they updated it, they used the update in order to downgrade that previous report. And I don't think that that's the, that's not what the recent literature would lead you to do. Part of the literature review that we've done with colleagues at U-Mass Lowell in Massachusetts, and we looked at this same literature. And actually, when we updated it, we considered this as strengthening evidence, not downgrading it. So that's my take, is that they may have done that. They may have

updated the literature but didn't do it properly.

And so, yeah, this is the two red lines are limited or suggestive evidence of an association, an inadequate or insufficient evidence of an association, is how they review the strength of the evidence. And as I've said now several times, I think that's too low. I think that at least the second line, the sufficient evidence of an association, should be highlighted here, especially mixed solvents.

Because in the IOM 2003 report that's what they said. These are folks who at Camp Lejeune who were exposed to mixed solvents. And then there might be some argument about -- well, if benzene was in the discussion here, there would have to be a statement that there is sufficient evidence of a causal association between benzene and leukemia and several other cancers as well. So this summary doesn't include benzene for whatever reason.

DR. BOVE: Or vinyl chloride.

DR. CLAPP: Or vinyl chloride.

DR. BOVE: It's on the appendix but not on the review.

DR. CLAPP: Both vinyl chloride and benzene are called Group One in the international classification of known human carcinogens. I forget the ^, but those two chemicals gives them the highest. You know, there's a causal association here with cancers of different types.

And then here's this long list of limited and suggested evidence of association. I'm not sure quite why -- well, this is their list, and I can't give you the details for why all these things are on there. Some of these I think should be one step higher. This is too boring to read through all of these, so this is their inadequate or insufficient evidence list.

Actually, I don't think there's too much argument about these but, well, perhaps

bladder cancer should be on the next higher category if I were to review the same literature. Childhood leukemia is on this as inadequate and insufficient evidence to determine. Childhood leukemia is one where this is the Woburn story and the Toms River, New Jersey story where childhood leukemia. It was New Jersey statewide, which Tom and his colleagues did -- sorry, Frank and his colleagues did.

Tom did some other work actually where some of these studies are, I think, disputed the level of evidence that Tom's work gives to some of this would put them in higher categories as well. I'm talking about Dr. Sinks.

But in any case childhood leukemia, again, that's where those of us that know the Woburn story have lived with it for decades now and have seen the multiple studies that have been done there, and then the animal evidence has come along since. There's no way

that childhood leukemia should be in this category. And so I didn't talk to the people who decided this, but in any case it doesn't reflect the science as I know it and as the people that I work with know it.

Yeah, on and on it goes. This is way too much to try to cover here. So they asked for, these are getting to the findings and recommendations: focused evaluation on the most directly relevant studies of community solvent contamination. That's what they think is sort of informing their judgment about where to go next. It's these community studies like the Woburn and Toms River studies. And so that's why I think they would say, well, we don't see as much evidence there as if these were workers that were exposed in dry cleaning establishments or something.

Yeah, I think here we're just repeating what were on those previous lists. And here they review the previous per dot com^ studies that were done by ATSDR and Nancy

Sonnenfeld and published previously or reported previously. There is this issue about small for gestational age infants which they say is really from a subgroup analysis in the Sonnenfeld study.

There's this larger issue which is there was a misclassification in the Sonnenfeld and these earlier studies because there were people in, what was it, Holcomb Boulevard, that were called not exposed or actually exposed. So that's going to be redone. The Agency has already committed to do that. They even say that in the NRC that that's a good thing to do, and that could be done quickly because the data's already in hand and so forth.

But then they have this notice, this point at the bottom, subgroup analysis in the Sonnenfeld study found this SGA, Small for Gestational Age, result. And then they say it's highly vulnerable to chance associations. Some of this is in the eye of the beholder.

What's a reasonable subgroup to look at? This was older women. And are children of older aged women at higher risk? The answer is yes in general for lots of things.

So this is a subgroup that has clear rationale. It's not a randomly or post hoc subgroup that was created as far as I know. And so in any case I think this is -- I don't know how to put this. This is like a purist approach to epidemiologic analysis.

You can't do subgroup. You have to have a main analysis, and you stick with that. Or if you have subgroup analyses, you have to have stated it ahead of time. You can't do it after the fact. I don't even know if that's how this was done with respect to the small for gestational age in the older women.

DR. BOVE: It was because, as Dick was saying, that older women and those with more, additional miscarriages prior to ^ are more vulnerable to other insults, and that was the hypothesis there. So that was the hypothesis

to the subgroup analysis.

MR. ENSMINGER: But there was a different breakout, too, for the limited number of births they had at the Hospital Point housing area where the Navy doctors lived. I think they cited like 31 births.

DR. BOVE: That's right.

MR. ENSMINGER: Those male children that were in that subgroup of 31 children were not born to older mothers. They were born to regular-aged women --

DR. BOVE: That was a different analysis.

MR. ENSMINGER: -- and those male children -- that's not on there -- those male children showed a lower birth weight, and they weren't born to older women.

DR. BOVE: No, no, and that's another subgroup analysis. As for females, there was no small for gestational age females in that group, and so that's something to figure out. I mean, that would be if the problem here is with those 31, those 31 are, there really

should be a thousand, not 31.

MR. ENSMINGER: Yeah, because the four years of data --

DR. BOVE: So that whole analysis I don't know what to make of because until we do the analysis over again, I don't know, if we do an analysis now with the 1,000 or 1,500 births that are exposed to TCE, we may find something totally different in that case, so I don't know what to make of that.

The PCE findings on the other hand have more, I mean, they may change but what Nancy did -- and by the way, Nancy did both. I mean, it's just one study. They call it two analyses, but it's one study. Nancy looked at other periods of time where there wouldn't have been this misclassification of exposure and found roughly similar results.

So I don't know how different things will be just by using the exposed-unexposed. But we plan to use the monthly levels that we have in this analysis because it makes sense

to do that. But, so we may see something different again with the subgroup analysis.

But to get back to what Dick's saying, and I just want to re-emphasize that, yeah, women who are older, women who have had previous problem pregnancies are at a higher risk for small for gestational age. And the hypothesis could be and make plausible sense is that any other additional insult you would possibly see an effect there; whereas, women who don't have the precondition issue, where either they're older, where they have had previous miscarriages may not, an exposure of drinking water may not push them over the edge. But if they already have a precondition, the exposure could push them over the edge. So that's sort of the hypothesis.

DR. CLAPP: Well, there's a rationale for doing the subgroup analysis, and it's not random or it's not just a chance.

DR. BOVE: We weren't just data dredging.

DR. CLAPP: Right, so I think it's a false criticism just to put that on this slide.

MR. STALLARD: Jeff, go ahead.

MR. BYRON: Well, what do you classify as an older woman or mother?

DR. BOVE: Over 30. It was 35 and over at this point.

MR. BYRON: And how many Marine wives do you think have children after 35? I'll bet the majority of them are well before 35.

DR. BOVE: The numbers were not large. That's true, but this study had --

MR. BYRON: How do you know how many of them had miscarriages that weren't documented prior, you know, at a hospital because that could happen at home.

DR. BOVE: It's based on the birth certificate information. This is what all studies --

MR. BYRON: On the birth certificate information the mother puts down how many prior miscarriages she has?

DR. BOVE: It depends on the birth certificate. Some states at this time, by this time, see, the earlier birth certificates -- say the ’68, ’69 -- states had different birth certificates. As time went on they all used a standard form. And in that standard form they asked for previous miscarriages, previous miscarriages and also previous stillbirths.

MR. BYRON: And also asked for birth defects which they never listed any of my daughters in the county hospital.

DR. BOVE: They listed birth defects, and no credible birth defect study uses a birth certificate.

DR. SINKS: It doesn’t ask for previous birth defects. It asks for current birth defects --

DR. BOVE: Current birth defects.

DR. SINKS: -- that are apparent at the time of the birth of that child.

DR. BOVE: Yeah, but even so, you’re right.

It wouldn't necessarily be on the birth certificate that your child had a birth defect even if your child did have a birth defect. And that's why we don't use birth certificates. We use birth defect registries to do those studies or medical records from a hospital. We do not base, and no birth defect registry bases anything on birth certificates.

DR. SINKS: Let me just give you an example, Jeff. My daughter has a club foot, born with a club foot. We knew she was going to be born with a club foot. That is clearly on her birth certificate because it's very apparent at birth that she was born with a club foot. Those are the types of things that pretty well will show up on a birth certificate.

DR. BOVE: Well, neural tube defects won't.

DR. SINKS: I didn't say neural tube defects. I said a club foot.

DR. BOVE: But --

DR. SINKS: Let me finish. Let me finish. The things that are less apparent for birth

defects tend to not show up, so heart defects. There clearly are times when obvious birth defects won't show up, but what isn't on a birth certificate is a history of a birth defect in another child. That I don't believe, but the history of the reproductive outcomes for the mother is usually on the birth certificate. Now, how accurate it is is dependent on the woman providing the information.

MR. STALLARD: Thank you.

DR. CLAPP: So that's their take on the pregnancy outcome studies. I actually think that they should be redone with the corrected exposure information.

This is the reason. Re-analysis of the 1998 study should be completed as soon as possible taking advantage of the new exposure information without delay from more extensive water modeling. Well, that's to their point of just exposed-unexposed is good enough which I don't think is the case.

This also applies to the childhood leukemia study, or the childhood cancer study I should say. You know, complete it is what they're saying. It's already underway and might as well get that done.

At the bottom again say it should be based on simpler approaches, historical reconstruction of the water contamination. Well, to the extent that Hadnot Point simpler approach will be what Dr. Aral or some version of what Dr. Aral and the expert panel suggested, it probably will be based on a simpler approach, but it will still be based on modeling people and on some level of differentiating who was most exposed from less exposed.

The health survey, they comment on and I'm thinking the report -- I don't know if it says it here, but they think the health survey will only be useful if there's a good response. I think we already know that and perhaps Scott will comment later today about

what is the response. But in any case that's their, it may or may not be useful was their take, and it all depends on the response.

All cause mortality, this is the one that -- well, the mortality study is the study that the initial IOM committee that recommended what kind of research should be done here recommended the mortality study. Dr. Ozanoff was part of that, and he personally thinks that, yes, at least do the mortality study as a bottom line. And this report seems to be unclear on whether or not even that is worth doing.

DR. SINKS: Dick, just to correct you, it wasn't an IOM committee. It was an expert panel we had brought in to provide us those recommendations. It was not an IOM committee.

DR. CLAPP: I take it back.

MR. STALLARD: Dick, whose response were you talking about?

DR. CLAPP: Yeah, I think, I don't know the language, but I think that there's some sort

of skepticism in the NRC report about whether this mortality study even needs to be done. Again, because there's so much uncertainty about the water model and who was exposed and unexposed. And it flows from if you don't think the water model will tell you anything, why do this study.

So I hold the position that the water model does tell, will tell quite a lot about at least high exposed, medium exposed, low exposed or some gradation in between. And that because of that, this mortality study is definitely still on the table, should be on the table and should be ^ should carry it forward. Again, I'm switching back between trying to say what the NRC committee report says and what I think, so forgive me if I mix the two sometimes.

And here again, I think the cancer incident study, they actually think -- they, the NRC committee, thinks that it would be more difficult to get cooperation from the

state cancer registries than the ATSDR has found to be the case. The epidemiology group that was convened here over a year ago included the former president of the Association of Central Cancer Registries. I think it used to be the North American Association of Central Cancer Registries.

She knows how all these registries, she was the Director of the New York state cancer registry, Dr. Schymura, and she said, yeah, this is how you do it. It can be done. It may take some time. Different states will deal with it differently, but the cancer incidence work that needs to be done for a Camp Lejeune follow-up study could be done.

So I think the NRC committee took a different position that this person, who used to be the head of the Association of Central Cancer Registries. And then in addition there are several other databases available that can be utilized in this kind of work.

They commend ATSDR for having

considered the major issues in their feasibility study, which I think Frank has presented here. I know Frank has presented here to this panel. Serious questions they claim remain, and here's the adequate state registry participation is uncertain. I don't think it is uncertain. At least certainly not for those states that have been in existence through, from the 1990s, the mid-1990s. So it would be like -- or 1997 I guess it is. So for those states, and that's pretty much all states now, I think participation is pretty certain.

Statistical power: Apparently, they didn't either read or believe Frank and Perri's power calculations, but they're there, and they are, there is sufficient power to show substantial findings in a study of, several of these studies, the mortality study and the cancer incidence study. So the NRC panel was apparently unconvinced or disagreed but didn't say why they disagreed with those

power calculations.

And again, the ability to measure and adjust for potential confounding factors is uncertain. Well, not if you interview, you know, these case-control studies of patients with cancer and then controls, patients of people who do not have cancer. You talk to them; you interview them. And that's how you get information about confounding factors. That's not uncertain. I mean, the quality of the information may vary, and that's always true of these kinds of studies, but there's nothing unique here.

Yeah, this is all kind of why it can't be done or why you can't really learn anything from these kinds of sites. So they say new studies should only be undertaken if their feasibility and promise of providing substantially improved knowledge of whether health effects have resulted from water exposure at Camp Lejeune are established in advance.

I mean, that's the old, it's their kind of bottom line recommendation. That isn't how science works. I mean, you never have that much certainty before you even do the study, or if you did you wouldn't need to do the study. So this is, I think, a rather strange contradictory recommendation. And feasibility, I think, has been established. And whether it can substantially improve knowledge is a judgment.

And again, different scientists will determine what they think that means, substantially improved knowledge. And then to require that that be agreed upon before the study's undertaken strikes me as bizarre actually, not scientific. Something else is going on.

And I think not to be mysterious about it, I think what was going on was that their bottom line was that let's shift the focus away from the scientific studies and onto, well, these people were exposed, so let's just

get on with helping them and their families for compensating whatever has happened to them because of their exposure without linking the two. That's I think what they're trying to do here, and that's why they're so dismissive of future studies.

This is the bottom line. I think this is the last slide. The italics at the bottom says that the efforts to address and resolve concerns with the contamination should not be deferred to await further research.

And again, some of you know this was on a radio show on National Public Radio called "Living on Earth" a couple of weekends ago. And Caroline, the woman from the Environmental Defense Fund, said -- I was on it and she was responding saying I think what people don't understand is people were exposed, and we want to say that. And so that's what needs to be dealt with on a policy level. What is the responsibility of the government or the Department of Defense for

that exposure, just do that.

That was Caroline. She's sort of friendly to the idea that there should be compensation and that that's what needs to happen next, and that we critics didn't understand that's what they were trying to say in this report. But I think the report, I mean, the report is there, but there's a lot of scurrilous stuff in this report as well. And so that's why we said we were disappointed and dismayed when we wrote this, the five of us wrote this statement that we signed. That's it.

MR. STALLARD: Thank you, Dr. Clapp.

We have still more time allotted for this discussion. Clearly, there appears to be some lack of concordance in the scientific community about this report and its implications. We can take some just dialogue and questions here.

I can tell you that from what I know the Agency, ATSDR, is not in a position to

officially respond to their position on this as they have to establish what that response is going to be. So we can have a dialogue.

DR. SINKS: Let me just kind of bridge this by saying where we are and letting you know where we are because I think that's important. We are not in a position right now to tell you what we're concluding in terms of how we're going to respond to this.

We are taking it (A) seriously. We are looking very much at that report. We are also looking at the other information we've gotten from other expert panels. We're listening to our technical people who've invested many years into this process and have their own considerations. And we also want to hear basically from the CAP and any person who wants to give us, and I've gotten personally several dozen, probably a dozen e-mails from individuals who told me their opinions. And all of that is something that we have to go through.

I will tell you this. This is when the National Academy puts out a report, it has to be viewed with an eye of it's an important document. You can't simply trash it. You can't simply just say, hey, I don't agree with you. I'm going to ignore it and move ahead.

The other part of this has to do with the reality of funding and the reality of what this means because there are other players at stake besides the CAP and ourselves and the community, and it's Congress, and it's Department of Defense. And we have to recognize that one of the limitations for us is if we were to say simply I'm going to ignore this report. I'm going full bore.

If we don't have the resources to go full bore, we don't have a budget that enables us to do that. So we have to look at this in terms of being able to fund the work as well regardless of what we decide we're going to do.

I want to make a couple of comments

about the report itself because I think to me that there's this kind of language that goes back and forth, and I agree with much of what Dick Clapp said. I personally thought there was a positive piece to this which was their comment that says science is science; policy is policy. Don't wait necessarily for all the science to tell you what the policy is going to be.

And I've made that comment before to Jerry and to others which is I've been concerned that holding one's breath and assuming we're going to find a result that you can support will ultimately tell the policymakers how to deal with this problem. Because science is high risk, and one of the issues -- Tom Townsend's on the phone. I've had this discussion with Tom.

I can guarantee we will not provide the answer to Tom about what happened to his son in terms of his heart defect because we're not studying heart defects. And if we're

going to wait or the Department of Defense is going to wait for our study to tell them how to compensate Tom or Tom's son, it's not going to come from our study because it's not an outcome that we have enough cases to look at.

And so personally I felt some relief, if you will, that the committee recognized that there are limitations to science in answering important policy questions. And I like the idea that they were going to look and review the significance of the evidence in terms of the connections.

Now, I'm not certain I necessarily agree with how they ranked things, but they did at least make an effort on that. That's there. We'll have to deal with that or the Department of Defense will have to deal with that.

But in terms of expectations for what our work is I just want to make sure that everybody understands the expectations of science is we will try to do the best science

we can, and we will try to do it in the most credible way. But if people have preconceived conclusions about what the science will show, that's not science. And it makes it very difficult for us because what happens is we win friends and create enemies based on our findings rather than based on the quality of the work. So that's part of this.

In terms of process and how we're looking at this our technical people in our divisions are going through the recommendations specifically identifying the critical elements that are in there. We're going to assess those. We're going to make some decisions about how we go forward, and we will share those decisions probably relatively simultaneously with the Department of Defense players, with the members of the CAP and Congressionals.

And I do want to, I probably have to reach out to Congress just to understand what they're feeling about it. Because the

surprising part of this was the, you know, Congress mandated the health survey. And they have something to play with that, and I don't know where they stand on that, and it's something I'll have to discover.

I will tell you that when we saw the congressional language on this we had concerns because we had already had our own expert panel telling us what to do. And so we recognized that there were potential conflicts because, as Dick said, anytime you get a bunch of scientists together, they're very free to have differences of opinions.

And we clearly have differences of opinions between past expert panels and this one that we have to sort out and we have to look at them. And just like we would look at an expert panel that we've convened with an open mind, we have to look at this with an open mind, too. And we will do that.

I think the goals, at least my goals -- I think I can speak for the Agency -- are

two. One is that we do science in the best way that we can. But secondly, that we don't do it without recognizing how we're serving the public we're trying to serve.

And this isn't just a question of an academic research exercise where we're applying for a grant through the grant system. There's a reason we do the science. It's a public service that we do the science for. We won't ignore the reality of the community that is invested in this issue as we make our decision.

MR. ENSMINGER: Dr. Sinks, for you all to do your science, you have to have the right facts and figures going into it which means the water model, Morris and Dr. Aral and Bob Faye. Now, I know for a fact -- it's right here, right here in this report -- this committee didn't even have all the facts.

They didn't have the 6 July samples from 1984 for well 602. It's right here in black and white. They show the 30 November

sample, 1984, which was really the 5 December sample from 1984. So what did they have, a crystal ball? No, this is just one more example of the crap that we have had to wade through which was being provided by these people to cover their butts.

I'm sick of it. We do not need to reward these people for destroying documents and withholding documentation by shutting down this water model. They were required to maintain those documents. There was an Executive Order dated 13 October 1978 which required all federal agencies to fall under all environmental laws. And when CERCLA became enacted, DOD was responsible for falling in line with that, too.

Now, there are key documents that are missing which would greatly assist the people doing the water modeling. That's not their fault. That's not the victims' fault. That's DOD's fault, and they were required to maintain them.

Now we don't need to reward them by trying to shut down this water model. And that's what they've been trying to do for how long now. How many times have they come in and tried to shut this water model down? Answer me. How many? How many times have they threatened to withhold funding for it?

DR. SINKS: I can't answer that, Jerry. I will -- when you're saying they, I think you're not necessarily referring to the Agency --

MR. ENSMINGER: No, we're talking about the Department of Defense or Department of the Navy.

DR. SINKS: -- the Department of Defense or the Navy or the Marines. I think that -- I'll just make a couple of comments. In my read of the report from the Best Committee I don't think they are looking at a specific, you know, like you've done, a specific result or sampling thing that has drawn them to the conclusion they've made.

I think they're looking at the more holistic issue of the uncertainty and the lack of data, which you've also brought up, in making their conclusion. Which I'm not saying I agree with their conclusion, whatever, but I think that's where they were with that.

Now, I can tell you that in the last several years that we've been working with the Department of Defense, I think we've established a very good relationship in trying to get information and discover information and, yes, it's extremely complex and going back 20, 30, 40 years to find that data is frustrating to the extreme.

But I think that we've been working pretty good at trying to get that and the continued discovery of more information is something that is apparent. Now, I can't tell you why data is missing, and I don't know if anybody can.

MR. ENSMINGER: Well, it's very selective as to what's missing.

DR. SINKS: I'd also compliment you guys for being entrenched and helping us to try to discover that because it's been a very valuable role. I also think that all of us have common interest, and I think the common interest here is to serve not just you members of the CAP, but the general community who had been at Camp Lejeune for many years.

And if we were to look at all -- if the three of us, if there are three parties here, and it's the community, and it's ourselves and it's the Department of Defense, and if we could all agree or think about this as how are we serving that community and doing the best we can for that community and what are the goals we really need to work at. Well, part of it is research. I agree.

But part of it is also this issue that I think the Best Committee has very clearly identified which is let's deal with this issue, and let's identify what those issues are. And we shouldn't ignore, I think, ignore

that opportunity. I think that's a very good opportunity. Because I think the reality is we can go ahead and do our research. We're not going answer every question you --

MR. ENSMINGER: I'm not asking for you to answer every question. I'm asking you to go forward with the research that's underway now, and let's find out the damn truth about the water model. What the hell was in our water? And let them go forward.

DR. SINKS: And let me also say this. I think there are reasons to look at this water modeling beyond just its application to the epi, which is to provide as good information as we can as to what the exposures were. How we incorporate it into the epi or not is one piece of it.

But the information it gives us about who was exposed and how much they were exposed to is not something that the Academy report actually dealt with. They did put in a recommendation in there about -- it wasn't

directed to us. It was directed to DOD -- about creating a database of all of the information on exposure and making that available. And I think the water modeling may have some specific piece to that.

So there are lots of ways we can look at this, and lots of ways we can cut this. I kind of think the opportunity in front of all of us is to ask ourselves what are the important things we really want to come out of this both from you as individuals representing the community from DOD and from ourselves and all of us align ourselves toward those common goals and see what we can do to work towards it. Now --

MR. ENSMINGER: Wait, wait, wait. You made a statement awhile ago about DOD has been more forthcoming in providing you with the information y'all needed over the last few years. Dr. Sinks, I got letters from you guys that were written to the Marine Corps complaining that you weren't getting your

documentation.

Hell, Bob Faye just found out here not long ago that there was an electronic portal that had never been provided to the ^ when they were working on the water modeling for the underground storage tanks program. I mean, how can you sit there and say these people have been cooperative?

DR. SINKS: Again, Jerry, I think there's a difference -- and this is my point of view, and you can agree with it or disagree with it --

MR. ENSMINGER: I do disagree.

DR. SINKS: -- I can't run from you. But I think there is -- and Mike knows this very well I'm sure because you've been doing a lot of the investigation on this -- it is extremely difficult to go back in time historically to look for records that were never intended for the purpose we're trying to collect them for. And I used to --

MR. ENSMINGER: Why do you think CERCLA told

them to keep them?

DR. SINKS: Let me just say, I used to do a lot of occupational health studies where I would have to go back into personnel records and things like that to look for them. And that was easy compared to this, and it's a complex situation. Now, it's complexity and the fact that we can't, that some of the information may be missing is a reality, but it doesn't mean there's an intentional purpose of blocking us from getting it.

And we have sent letters, and we have clearly stated our needs, and we have at times had some frustration in the past. But I'm saying in terms of what we are trying to get I think we're getting. The fact that we discovered that portal is, in fact, a great example of here's something to look at, and our people looking and finding information that we thought was relevant.

MR. ENSMINGER: That was found out by accident. They didn't volunteer it.

MR. BYRON: And can I say another thing? This is Jeff Byron. Each one of these reports that come out has been flawed, every single one of them because the data has not been provided by them. The information that has been gathered for ATSDR has been done by these two guys at my left to correct all those reports, every single one of them.

As you see my shirt it says that I don't trust the government, and there's a reason. Because between the words you're saying to me I'm kind of hearing like maybe these studies won't be done. And that's exactly what I'm getting. All you with the government I do believe you're speaking with a forked tongue.

MR. PARTAIN: And on that note, Dr. Sinks, did not the expert water panel review meeting back in April, did they not conclude that the Hadnot Point water model was relevant, that it would be useful? And are the people who reviewed these, the data, were they not

qualified scientists?

DR. SINKS: Yeah, and like I've said we very much are going to look at that report. We'll look at the other reports. You know, the other expert panel that we, one of the first things that I did when I got involved with Camp Lejeune was look at the series of letters we'd gotten from Marines and from Congress repeatedly saying to us why are you only studying this in a small number of birth defects.

There are other, many other things, and we repeatedly at that time were sending responses which was the same old response which is this is what we think we need to do. And the first time I met with a congressional staff on that we made a decision with them that we would open this decision up beyond our walls and seek outside expert opinion.

That expert opinion -- and Dick has referred to it -- basically said to us you ought to look at doing at least the total

mortality and a cancer incidence study, and we can't really address the others. Now, I'll tell you, we could not provide them the detailed information they needed to tell us if it was feasible because we then spent, and Frank then spent, a couple years gathering that information to look at the feasibility. That was one of the reasons because we had gotten that report that when we saw the language written into the authorizing bill about a National Academy report we were concerned. Because we were concerned that we were already on a course, we'd already gotten expert opinion. To get additional expert opinion which could, in fact, say something different --

MR. PARTAIN: Did you try to interact with the, once you saw that language in the bill?

DR. SINKS: We did. We did.

MR. STALLARD: Could I please intervene here? I'd like to know, help me understand. What's the practical impact of this report?

How is that going to impact what we're doing?

DR. SINKS: Well, I think the practical input is we can't just simply say I'm going to ignore it. We have to look at it. We're going to look at it very carefully. We very much want your opinions on it.

You know, Jerry, what you've just said is very important. We're trying to, this isn't just science. This is service, and we know that.

MR. PARTAIN: There's about a ^ of Marines and their families that need to know this. They have a right to know what they were exposed to.

DR. SINKS: That's right, and we're going to look at that. We're going to, like I said, we're going to look at the opinions of our technical people. We're going to look at the previous expert panels. We're going to look at this report. We're going to draw some conclusions from it. We're going hear what you have to say. At some point we probably

need to hear what Congress has to say.

And we're going to move forward with a, this is how we're going to react to it. I'm just not prepared at this time to tell you. And I also very much wanted to have this meeting and have this discussion as part of our deliberation in terms of what we're going to do.

MR. ENSMINGER: Well, let me ask this one question.

DR. SINKS: Go ahead, Jerry.

MR. ENSMINGER: You say that you've had your experts already make comments about this thing like the people with the water modeling and Frank and Perri. They've already reviewed this report and made their comments?

DR. SINKS: No, I didn't say that. I said that we have had other expert panels looking at these same issues, not the toxicology issue, but the other issues that what are we doing on future studies; what about the water modeling. And they've come up with very

different conclusions than this panel. And we're going to look at those comments as well and sort through them. There are some critical issues that the Academy specifically looks at in their conclusions. We have to look at them. And I think that, you know, all I'm saying to you is we have to be, we have to be open minded to any critique that we get, and we will be. But we're not just going to look at the Academy report and say, well, there's the damn answer. That's what we're going to do. That's not what we're saying.

Jeff, in terms of your comment to me, you know, it's fine to make a general statement, and that's fine. But if you think I am not delivering on what I say, please tell me because I try to deliver on what I say, and I think I've built a reasonable reputation with you guys. And I think I've been fairly up front with you and told you my opinion. And if you think I'm not being, let me know personally.

MR. BYRON: Well, I think you're setting the stage for letting us down is what I think that conversation was. And the reason I say this is because how can you take a report from these individuals as being that serious if they don't even respond to Dr. Clapp's comments? This is the same thing that went on with the GAO report I got to review before that. No matter what comment I made, they still wrote that report the same way with the bias of the Marine Corps' special interests and need.

MR. PARTAIN: And what I don't understand is how one report can create such a crisis in confidence in ATSDR. It's, just hearing, what you're saying today, I just get the impression that ATSDR has turned into an amorphous mass of emotional Jello quivering on a plate. Get some backbone and say something. Your scientists have been working on this for years. You guys know what you're doing, right?

DR. SINKS: Mike, what I'm saying to you is we are going to say something when we are prepared to say it. I'm not saying we're going to turn into an amorphous bowl of Jello quivering on a plate and maybe at a warm temperature, and I love the analogy. What I'm also saying to you is at this point in time I'm not going to declare what that is. We're going to base that on the best evaluation of that report that we can. And, you know, --

MR. ENSMINGER: Have you got your review comments from your people in this agency and the people that are working on this, on the Camp Lejeune thing?

DR. SINKS: I --

MR. ENSMINGER: Have they made their comments? I'm asking you a question. Have these people submitted their review comments to you about this NRC report?

DR. SINKS: The technical people have been writing a lot of information --

MR. ENSMINGER: I'm asking you a direct

question.

DR. SINKS: I actually don't know because I actually was --

MR. ENSMINGER: Dr. Aral, have you submitted a review of this report?

MR. STALLARD: Hold on here. Let me ask a different question, Jerry.

What timeframe are we talking about before we can expect a probable response?

DR. SINKS: Well, it could be relatively soon, and it may not. I really don't know. It's probably in the period of a couple of months. If I gave myself the outside, it's probably a couple of months. The shorter term would be a couple of weeks, but it's probably within then.

MR. STALLARD: In the meantime work continues on in the direction that this has been going thus far?

DR. SINKS: Yes.

MR. ENSMINGER: And, Dr. Sinks, you sat there and said that you have never, ever given

us a reason to doubt your --

DR. SINKS: I didn't quite say that. Jerry, you are welcome to doubt me any time you wish.

MR. ENSMINGER: Well, you went up in front of a congressional committee and sat there and was asked the question had the Department of the Navy or United States Marine Corps done anything to hinder your work at Camp Lejeune or delay it. You sat there and said no. And I know damn well that's not the truth. Why did you do that?

DR. SINKS: Jerry, I don't even recall that.

MR. ENSMINGER: I do.

DR. SINKS: You were there. I don't even recall that. But let me say this.

Mike, this is a time of crisis, and this is a time of crisis for you folks in terms of your concern about how we will respond to this. I understand that.

And, Jeff, you are totally correct to have concerns and about that because this report is saying something totally different

than what we have heard before. And we recognize that.

MR. PARTAIN: We've already had two North Carolina senators, United States senators, come out and reject the report. They made press releases, too.

DR. SINKS: So all I'm saying to you is we are going to look at this report, and we're going to look at it, and we're going to judge it --

MR. ENSMINGER: How long?

DR. SINKS: -- and we're going to make a decision. I think we just said. It's going to be between a couple of weeks and a couple of months.

MR. BYRON: Can I say one other thing?

DR. SINKS: Yes.

MR. BYRON: When this research committee was brought to bear, do you want to know what my opinion was before ever the report ever came out?

DR. SINKS: I'd love it.

MR. BYRON: Is that they would be used to cancel this CAP and further studies. Do you know why I thought that? Just for the fact it says National Research Council. That's like the Government Accountability Office. Do you get my meaning? I don't trust these people because number one, are they going to risk their paycheck? Do you think that I would want to start over at 52 years old?

Most of these people I think are going to go with the flow, and somebody will have editorial privileges at the very end, and I think they're going to be the same people that wrote the GAO report and the same kind of people that wrote this report.

What I can't understand is that they don't want to acknowledge that there's scientific evidence to prove that these people, you know, their illnesses are caused by this, but yet they say go ahead and compensate them before the science. Do you know why it came to this? It's not to get

compensation because that'll be done in another avenue. That'll be Congress. That'll be the lawyers that are involved, because they have plenty.

The reason I'm here is to advance science so that they don't do it again to my fellow Marines or any other service member or any American, and for that matter, any person of any other nationality. They take care of the people ^. I notice that now they want to give healthcare to those in Montana, Libby, Montana, and even the CDC Director and EPA Director have both come out and said what a tragedy, and we should give these people healthcare. What stance do they have on Camp Lejeune? I'd like to hear Secretary Sebelius' opinion of Camp Lejeune.

And by the way, you already know for TT what the situation is, but you refuse to say until the report is done. Now, were these kids' health effects caused by the water? I drank 200 parts per billion every day for two

and a half years at TT. I don't know what we got at Midway Park because first off, they said we weren't exposed.

Then my friends here found that we were exposed. Who's doing the investigating for all these different reports? Because they're not investigating. They're taking the bull crap that they say and writing it out just as if they wrote it for them. And I'm kind of tired of it. Like it says on the back of my shirt, talk is cheap. Let's see some action.

So you need to go back and tell them, no, the mortality, the cancer incidence is going to go on. And then we're going to find the real facts. What is the national comparison to the individuals at Camp Lejeune? And I suspect it'll be the same as what the in utero results have been. And I'd still like to know what's going on with TT. I'd like to know what's your opinion of are those children's illnesses caused by the water they

drank or not.

DR. SINKS: Jeff, what's your opinion of the health survey? So there are three components.

MR. BYRON: I think the health survey needs to go on. I think the veterans need to write down what their issues are. Then you need to go ahead and do your scientific, put the confounders in there just like you're, you know. Tell us what it is.

MR. ENSMINGER: Take a look at this way.

MR. BYRON: I know what the results would be.

MR. ENSMINGER: We've discovered 17 confirmed cases of male breast cancer. That was just through some newspaper articles. What the hell do you think this survey would uncover? I mean, that's 17, and most of them are in Florida and a few sprinkled up around Michigan and other areas.

MR. PARTAIN: Until I got involved no one was even looking at it.

MR. ENSMINGER: What do you think this, how

many more do you think we're going to find throughout the entire nation? All these people have one thing in common, Camp Lejeune. I mean, it is imperative that this goes forward. It is imperative that the water model go forward.

MR. PARTAIN: And one thing on that story that Jerry's referring to, going at the story we had ^ that I had found throughout the past year and a half, the article which was in the St. Pete Times has generated, according to the reporter, he's gotten flurries of phone calls, over 100-and-something e-mails. People just didn't know what had happened. They were like what do you mean Camp Lejeune was contaminated, and they have no idea.

And that is the point of the water modeling because these people need to know what happened to them, and when it happened to them. And to sit there and pull the stakes and fold your tents and close camp because of one report that has some very questionable

science in it. Even one of the comments says the science concerning the LOAELS was irrational.

And I just don't, like I said, going back to my question, I don't understand the confidence in crisis. You guys, they've been working on it, and it was, you guys have been working on this issue for years. ATSDR should be the expert, and you have a hodgepodge committee of scientists who come in on a questionable charge written for the most part by the Department of the Navy. Kind of like the wolf guarding the sheep. And all of a sudden you're standing on quicksand. I just don't understand that.

MR. ENSMINGER: How many water modeling experts were here on the 29th and 30th?

DR. SINKS: You know, again, --

MR. ENSMINGER: No, how many experts?

DR. SINKS: -- let me just say. I don't, where I don't want to be is in an issue of competing expert panels or competing opinions

or --

MR. ENSMINGER: I'm not asking you to do that.

DR. SINKS: -- let me say. I don't want to be in a position of saying, oh, the National Academy of Sciences is a trash organization. It is credible --

MR. ENSMINGER: It is?

DR. SINKS: -- credible. It's highly credible. And Dick won't disagree with me. The issue is the individuals on that panel and how they came up with whatever sausage they came up with. It's not an issue of the National Academy. Now, we have --

MR. ENSMINGER: Their conflict of interest policy stinks.

DR. SINKS: -- well, we have to look at that sausage and pull it apart and take a look at it and come up with a respectable position. And it's not an issue of confidence. It is an issue of some delay. And let me tell you, every time we have an expert panel, if it's

our own expert panel, we have been delayed. So we just had one on the water modeling. We said, fine, we will have a panel on the water modeling, and it will delay us because they're saying go forward, do more. It's a very different thing.

MR. ENSMINGER: So I asked you, I asked you, how many water modeling experts were here on the 29th and 30th? How many --

DR. SINKS: ^ answer. There certainly were more on that because it was --

MR. ENSMINGER: Eight, ten, what? What was it? How many? Morris? How many expert water modeling experts were on this damn NAS panel?

DR. SINKS: But if you want to look at the strengths --

MR. ENSMINGER: One?

DR. SINKS: -- Jerry, if you want to look at the strengths and limitations of the various expert panels, you can identify strengths and limitations for both. Our expert panel met for two days. They were given documentation,

I don’t know, a couple weeks before they met, and that was it.

This panel met for two years --

MR. ENSMINGER: No, no.

DR. SINKS: -- this panel was put together for two years. This panel had a peer review process. Now, I don’t know what comments they got. We don’t have a -- ours, by the way, didn’t give us consensus opinions. They gave us individual opinions, is the difference between a FACA committee and this type of thing. There are strengths and limitations to both.

You can’t just select one because you like what they say and say I’m going to select that one. And we’re not going to just say I like this one. I don’t like this one. We’re going to pull this apart. We’re going to take a look at this, and we’re going to be confident in what we move forward with and hopefully you’ll like it. But I’m not going to guarantee you you’ll like it.

Now, the other thing that I'm saying to you is I think there's something important and valuable in that report that I think the committee thought was important and valuable in that report. And that has to do with there's something here other than the science, and that's the policy. And I think there's an opportunity for the community to be involved in that policy and get yourself involved in it.

And I would recommend it because I think there, I know epi fairly well. I'm an epidemiologist. It's a blunt tool. Jeff, it's never going to provide you all the information you want. I wish it would. I've been saying to you I have concerns for some time. Our study power on the childhood cancer and birth defects one is very limited.

And, you know, it's high risk to just say let's wait and see what that study's telling us and then make decisions on the basis of that study which, by the way, won't

address Tom Townsend's main concern. We shouldn't put all our eggs in that basket. And this report is providing some opportunity not to put those eggs in that basket.

It'll be up to you if you want to embrace that part of it and ask yourselves how can I make something positive out of this. That's not a message going to us. I think that's a message going to the Department of Defense and you. And while it, the difficulty, and I would agree with Jeff. The difficulty with that is their assessment of the toxicology. And I think that is problematic.

If they had come up with a different assessment of the toxicology that said, oh, by the way, there's sufficient causal evidence on all of these things so let's move ahead, I think you would have been extremely pleased, but, unfortunately, that's not what they came up with.

MR. STALLARD: When we return, we will take

this up. We've got plenty of time. We're ahead of schedule. The emotions are high, take a breath. Get a bite to eat.

DR. SINKS: Except from one o'clock to two I've got another --

MR. STALLARD: So are you asking to stay here for --

DR. SINKS: If you could, if there's something. I mean, I want to go on with the conversation, but if there's -- I have a one o'clock.

MS. RUCKART: That's fine, but then there are people who are watching this live, and we can't stream from 12 to one, so I leave that to --

MR. ENSMINGER: Well, I just have one point.

DR. SINKS: Are you going to wrap up at two, at 2:30.

MR. STALLARD: Okay, make your point and then we'll go.

MR. ENSMINGER: I have one point. You've got these people coming out and recommending,

oh, well, let's go on and move this thing toward closure. But they're also recommending you shut down every other damn study that you've got going forward.

MR. BYRON: That's the point.

MR. ENSMINGER: And that's bull.

DR. SINKS: That's not my recommendation.

MR. ENSMINGER: Well, no, but you're a public health service agency. You have a responsibility not just to me or Jeff or Mike or Tom Townsend or any of the other people involved at Camp Lejeune. We have a damn obligation to public health to carry this stuff forward and find out what we can, not just for us. This is for public health. And if you drop this stuff, you're turning your back on public health.

MR. BYRON: And real quick -- this is Jeff again. I'm not looking for a pat hand or a report that proves my family's case or anybody else's for that matter. I'm looking for credible science. But what totally infuriates

me is the millions and millions of dollars spent on these studies, and then we find out they're invalid because they weren't provided the information that they needed during the timeframe.

Then what bothers me even more is the fact that they're going to spend a billion dollars cleaning up Camp Lejeune to 2018, and then you have the nerve to tell me that my family's health experiences aren't caused by that but you'll spend a billion dollars to clean it up. If there's no problem at Camp Lejeune with the health of the public, what the hell are you doing spending a billion dollars?

MR. ENSMINGER: More than that.

MR. PARTAIN: And the big question is --

MR. BYRON: It'll end up being two billion.

MR. STALLARD: This is the time to --

MR. PARTAIN: I know. One last thing and I'm done. The big question is what will be left unanswered by shutting down these studies

would be what happened at Camp Lejeune.

MR. STALLARD: And I think when we come back from lunch, we're going to talk about an appropriate response from the CAP about this report.

Yeah, Tom, we're going to take a break right now. We haven't heard from you much, but I'll tell you what. When we come back at one, we'd like to hear from you.

MR. TOWNSEND (by Telephone): One o'clock, right?

MR. STALLARD: Yes.

(Whereupon, a lunch break was taken from 12:08 p.m. until 1:10 p.m.)

MR. STALLARD: Welcome back everyone. So who do we have on the phone still? I heard Tom I think and Allen.

MR. MENARD (by Telephone): Allen's here.

MR. STALLARD: Tom?

MR. TOWNSEND (by Telephone): Yeah, Tom's here.

MR. STALLARD: And who was that we heard?

MS. BRIDGES (by Telephone): Sandy.

MR. STALLARD: Hi, Sandy, welcome.

MS. BRIDGES (by Telephone): I've been here all along.

MR. STALLARD: And the closed caption person?

THE CAPTIONER (by Telephone): (no response)

MR. STALLARD: Well, welcome back.

THE CAPTIONER (by Telephone): I'm here now.

MR. STALLARD: Okay, thank you.

CONTINUE NRC REPORT DISCUSSION

We're going to continue on in our discussion about the recently released study, or report I guess I should say. And since we have time, and I think there might be more questions, one of the things I would suggest that we may want to consider is what would be an appropriate venue for a response from the CAP to that report.

Tom, did you have anything, since we're just getting started and these folks are getting their paperwork in order, did you have

something you wanted to contribute based on the discussions thus far? You have to speak up because for some reason we're not picking you up too loudly here.

MR. TOWNSEND (by Telephone): Can you hear me now?

MR. STALLARD: When you said can you hear me now we did.

MR. TOWNSEND (by Telephone): I read the initial --

MR. STALLARD: Speak up, Tom. Make believe you're eating an ice cream cone and make that the mike.

MR. TOWNSEND (by Telephone): The mike is --

MR. STALLARD: That's better. The closer you get the better for us it is.

MR. TOWNSEND (by Telephone): It's almost in my molars.

MR. STALLARD: That's a good place then.

MR. ENSMINGER: Don't worry, Tom. We can't see you.

MR. TOWNSEND (by Telephone): I was reading

the Executive Summary and that stuff, and I downloaded the rest of the stuff, and I couldn't believe that the, it waffles on so much stuff. The toxicity section was vague and their conclusions were inconclusive. If they couldn't come to a decision, what the hell is this talking about?

MR. STALLARD: Tom, you're either falling away from the microphone or you've swallowed it or something.

MR. TOWNSEND (by Telephone): Well, maybe my phone line --

MR. STALLARD: That's better. That's better. Stick with us here.

MR. TOWNSEND (by Telephone): (Inaudible). The review panel was supposed to have been objective, but to have come up with a piece of crap like that. I'm disappointed that they just seemed to say, well, too bad we can't, it's so confusing. It's so much conflicting data, we're just not going to voice this opinion. Just neutral, just let it drop. I

thought that was very disconcerting. I hope that the CAP and ATSDR can respond in some appropriate fashion ^ including squelching the VA operation I know that. Any claims of the VA are dead as a result. That's about all I have to say at the moment.

MR. STALLARD: Thank you very much, Tom.

MR. MENARD (by Telephone): Christopher, this is Allen. Can I speak to that?

MR. STALLARD: Yes, sure.

MR. MENARD (by Telephone): PCE and TCE are right now listed as probable carcinogens. Since benzene is a known carcinogen, I got a letter from an epidemiologist that states that PCE and TCE are going to soon be, if not in the very near future, elevated to known carcinogens. I mean, for ATSDR to halt their water modeling would be insane. It would be against the public health interest of all the people here.

And also, when it comes to the VA, Section 5107, Title 83 of the United States

Code, it said that the Secretary shall administer the evidence, the medical evidence that the VA Guide responds to with both positive and negative regarding any scientific data that they put forward.

And, Jeff, if there's any issue where it's 50-50, it says that the claimant shall get the benefit of the doubt. And I think with a lot of these VA claims that we have submitted, we have given the benefit of the -- I mean, we have given more evidence positive than negative. And we should be given the benefit of the doubt.

I think a lot of people have been denied just because of an NRC report and public health assessment which was thrown out because now we've got benzene in there. I mean, you know, it's really ridiculous. There's really no way all these VA claims should be denied. We have given more than enough evidence that we were exposed to these chemicals.

MR. STALLARD: All right, thank you, Allen. Jerry.

MR. ENSMINGER: Dr. Sinks said that there were, that they had received review comments from all these folks that were involved in Camp Lejeune efforts. I was wondering, Dr. Aral, have you submitted your comments?

DR. ARAL: Yes, I did.

MR. ENSMINGER: Could we let Dr. Aral give us his viewpoint on the --

MR. STALLARD: That would be Dr. Aral's choice to do or not. I think --

DR. ARAL: I can give my summary. Okay, thank you for the question, and I'm assuming that the question is what I think about the NRC report.

MR. ENSMINGER: Yes. Dr. Sinks said that review comments had been submitted by, he initially said that, and then when I asked him, he kind of hedged on it, kind of slithered away. But I wanted to ask you specifically had you reviewed this report.

DR. ARAL: Of course.

MR. ENSMINGER: And I'd like to see what you think as the expert in this water modeling, or one of the experts, what your viewpoints are.

DR. ARAL: Before I go into the details of what I'm going to summarize, I need to give you some disclosure and some disclaimer. My group at Georgia Tech is contracted by ATSDR to help support their scientific activities, such as the Camp Lejeune. And I'm involved in this project for a long time funded by ATSDR. And I was involved in other studies of ATSDR as well like Toms River and other site-specific applications.

And as we have heard this morning there are several sides to this story in the sense that there is a science part and then there's a policy part. My expertise is of course in the science part, and I'm just going to respond to your question on the science part.

When I read the NRC report, I

recognized that they basically came up with good response to the Tarawa Terrace modeling study. It says, the report says ATSDR has done what could be done with the state-of-the-art modeling tools that are available or at their disposal. And then having said that they end up that sentence with a but, and then they start criticizing the effort.

If you look at the critiques of the effort, I can categorize them in two groups. The first one will be their lack of understanding of the site conditions. The second one is going to be the, their misrepresentation of the findings of ATSDR. In the first group there will be where I claim that they have lack of understanding of the site conditions, they are basically focusing on theoretical aspects of this environmental pollution.

They are making assumptions, for example, of the source condition at the site. They’re stating that the source is PCE, and

it's a D-NAPL. Well, PCE in a drum is a D-NAPL. But PCE when it is processed in a cleaner operation and discharged into a septic tank along with other things that go into the septic tank may not be a D-NAPL. They are not looking at the site-specific disposal conditions of the PCE at the site.

The other site-specific concern I had was that they criticized the ATSDR work and bioremediation modeling. They say the byproduct sequence that we have chosen in our analysis is not correct, and they are right in the sense that theoretically another path should be followed. And I'm not going to go into details of what those paths are. It's technical.

What they are ignoring is that that path is site specific. In other words we can provide them with literature in which the path that we have chosen based on the data that we have at the site is the correct path. So these two are in a sense forgivable errors

that I see in the first grouping that they don't understand the site. It's forgivable because they may not have enough time to look at the data or characterize the site or understand the site. That's not an excuse, but understandable error.

The second group, as I have mentioned, is mischaracterization or misrepresentation of the data that is presented in the Tarawa Terrace study, the reports of which is public domain. In that grouping I think they are picking up certain numbers claiming that they represent different phases or different pathway conditions, and they are criticizing that this cannot be happening at the site.

On the contrary, ATSDR report clearly states that what they have declared is not what they have written. On the contrary, what ATSDR says in their reports is exactly what they want to conclude in terms of the concentrations, and I'm talking about vapor concentrations in the pore space, et cetera.

So these types of mischaracterizations is going on in the report and several aspects of the critique that they have prepared. So this is not acceptable. If they read a report, if they pick up a number, and if they present it in a different way, that is not scientific in my point of view. And that should be put forward. And that should be corrected by the NRC panel. And an addendum should be placed by their panel to declare these corrections eventually.

The other group, or in the second group, I also recognize that they continuously go back to the assumptions that they have made in the first group, like the D-NAPL assumption of the source. D-NAPL is just a certain condition of a contaminant which behaves different than a dissolve phase.

They made that assumption in the first group and then they can come back and assume that that assumption is correct and criticize the rest of the ATSDR work based on that

assumption. That's not a scientific way of analyzing a report as well.

If your first assumption is wrong, then the rest of the document is wrong because your document is based on that first assumption. And as a scientist who worked on this water modeling study for a long time, that first assumption is wrong. So that throws away the whole NRC report.

MR. BYRON: Dr. Aral, could you explain D-NAPL a little for those who may be listening?

DR. ARAL: D-NAPL is a certain phase of contamination which happens to be heavier than water. If it is discharged into an aquatic environment, it sinks to the bottom, in this case, of the aquifer. In the dissolve phase, which we have looked at ATSDR, the concentrations occur at a very small magnitude compared to its solubility, and the migration, advection and diffusive transport of that is totally different than the contaminant sinking at the bottom of the aquifer. So that's the

non-technical summary of that.

MR. BYRON: So what we're talking about is a chemical is not dissolved in water. It's...

DR. ARAL: Pure phase.

MR. BYRON: It's insoluble so it's just 100 percent chemical --

DR. ARAL: Right.

MR. BYRON: -- sitting as a puddle either on top, below, it's heavier.

DR. ARAL: And it is doing its own thing independent of the groundwater flow pattern that may exist in the aquifer.

MR. BYRON: So what we're saying then is since they were mixing the chemicals with the water as the process of dry cleaning was going on, then this D-NAPL state did not occur?

DR. ARAL: It shouldn't occur. It should be in the dissolved phase then.

MR. BYRON: Thank you.

MR. MASLIA: I couldn't just be quiet here. I think it's important to understand it's not just conceptual. We published the data in

Chapter E of the report, and as Dr. Aral said, the NRC used that data. The highest concentration that they reported, the NRC report that came out of our report, was 12,000 micrograms per liter. Now, that's a high concentration, and it could be used to identify the source, but the solubility of PCE is over 200,000 micrograms. So you've got less than six percent in solution. You cannot use that to justify a D-NAPL.

MR. BYRON: Right.

MR. MASLIA: And what they did was use, as Dr. Aral said, our data, that one data point is what they based their whole concept on.

MR. ENSMINGER: Well, I noted throughout this entire history of this water modeling that the Department of the Navy kept hitting on the fact that you didn't have enough actual analytical stuff, historical stuff, to base an accurate water model on. And then, gee, amazing that the NRC report hits on the same thing. Go figure. But your water model, once

you got to the point where you actually had some data, did not your report for Tarawa Terrace pretty much mirror what you actually had data for?

DR. ARAL: Yes, as Morris indicated in today's presentation and also earlier, the predicted concentrations are within the range that we are predicting at the measured points. So these two are major scientifically not acceptable conclusions of NRC report as far as I can see.

Then there are other minor comments one of which I would like to reference, and that is again related to this vapor concentration that we have reported to occur and the pore space of the ground in the elementary school area. And it is within the range of ten to 100 micrograms per liter I think.

In their report they are comparing that number that we gave wrongly using the concentrations not in the vapor phase, but the

water phase. We can correct that very easily because our statements in the report clearly identifies which is the water phase, which is the vapor phase. They totally took that out of context.

But what I have noticed is that they are using a reference where they are picking up a number like 50 milligrams per liter from a study done in New York in a building where cleaner operations were housed, and they have measured the vapor concentrations in the building. And they are stating that the numbers that we had found in the pore space of the ground should confirm to the measurements made at a different year, at a different time, in a building room environment where the cleaner operations were housed.

I mean, when I saw this type of a comparison or an expectation that those two analyses or the measurement and the prediction that we have in our case should conform to each other is meaningless. It is ridiculous.

MR. ENSMINGER: Yeah, because this is coming up from the ground.

DR. ARAL: This coming up from the ground, it's coming up from a different source. The processes are different. Why should it be the same concentration in a building which is measured in 1970s, I believe. This is not scientific. This is absolutely ridiculous.

So in summary I have presented ATSDR about 20 pages of report which is full of these facts of discussions with references included. And I am sure some time in the future it will become public domain. I have no problem for it to become public domain.

MR. ENSMINGER: Thank you.

MR. BYRON: Thank you.

MR. STALLARD: So where do we go from here?

MR. ENSMINGER: We need more questions.

MR. STALLARD: Need more questions? Any potential strategies for, I mean, we heard Dr. Clapp talk about a rebuttal, I guess, if you will, that was compiled by five of you. Is

that correct?

DR. CLAPP: Yes, five of us who are epidemiologists. I think Dr. Aral has just given a devastating critique from the perspective of the water model. So it may be that those things can be compiled. And if there's toxicological questions, the use of the LOAEL, for example, that if we could hear about that now maybe we could consider some kind of composite response.

MR. ENSMINGER: Yeah, who has the knowledge to do the LOAEL? Frank?

MR. STALLARD: Well, we cannot compel him to speak.

DR. BOVE: I can say that what you usually use a LOAEL for is to level where you'd expect to see major health effects to occur. Usually when we assess a site we never use the LOAEL and compare it to an exposure. A LOAEL needs to have uncertainty factors attached to it as the footnote suggests.

Now, how much uncertainty, because you

usually have to go from a LOAEL to a NOAEL or what they call benchmark dose, but a LOAEL's not that so you have to have an uncertainty factor for that. You have an uncertainty factor from going from a rodent to a human, unless some of us are like rodents. Then you have an uncertainty factor for differences between people, susceptibility. So that's three already. There are a couple other ones. I have some notes here. Excuse me for one second while I look at my notes here.

So I said human variability, human differences, and then just basically any limitations to the toxicological database itself, or the study limitations itself. And the report certainly talks about all the limitations of the epi studies. And there are limitations to animal studies, too. So there's some uncertainty factor attached to that.

Now, depending on how much uncertainty for each one of those factors, they usually

use a factor of ten or a factor of three. This is arbitrary, but that's what the practice is at this point. So if you have, say, three uncertainty factors, and you give them all a weight of ten, you have 1,000. Oftentimes you see uncertainty factors between 300 and 3,000. Usually 3,000 is the one they stop, although in the footnote, Nan Shepherd (ph) said it's justified to go beyond 3,000. But I think EPA stops usually at 3,000.

So if you divide those LOAELS by 3,000 and compare them to the exposures in the report, especially the TCE exposures -- first of all, you never do this with cancer because cancers you assume a no threshold model. Now, that doesn't mean there isn't some kind of threshold for cancers. We just don't know what it is, so we assume a no threshold model.

Certainly, I've never seen anyone use a LOAEL for cancers, LOAEL in rodent studies for example. But I guess someone must have done it, but it's not standard practice. So

what you do is forget about the cancer one there and look at the other end points in that. And I don't have the report in front of me, but forget the end points. But if you divide the LOAEL by 3,000, you'll see that that value is lower than the exposure at Hadnot Point for TCE.

MR. ENSMINGER: Can we make a suggestion?

DR. BOVE: Yeah.

MR. ENSMINGER: Why doesn't ATSDR take the way that the LOAEL was used in this report --

DR. BOVE: First of all, first of all, let me say one thing --

MR. ENSMINGER: -- and request from the EPA what the EPA thinks about how this was used in this report?

DR. BOVE: -- the first question is is this a proper LOAEL. I mean, at least a proper -- see, there's a couple questions that I'm not, I'm not a toxicologist, and I haven't looked at it in depth. So a couple questions can be raised.

First of all, is this the right animal model? Second question could be is this the right end point? Is this the most sensitive end point? Third, was this the right study to base the LOAEL on? There's a couple of questions here.

So the first question is this LOAEL that they came up with, is it a good number or a poor number. Is it well justified or not? And I don't have the answer to that. That requires a lot of work to do that. We have toxicologists here who do tox profiles, and that's exactly, and they have consultants who work on those tox profiles, and that's what they do. So that's one thing that could be done.

And then after you have a LOAEL you feel comfortable with, actually, you'd like to see if there's a NOAEL, but if you're stuck with a LOAEL, then you have to apply the proper uncertainty factors which they did not do. So there's a couple steps here.

Right end point, right animal, right study, proper definition of the LOAEL, proper uncertainty factors. There's probably things I'm missing, but there's a whole bunch of steps here to evaluate that part of their section. So that's as far as my expertise can go here. As I said, I'm not a toxicologist.

MR. ENSMINGER: I would like ATSDR to submit a list of questions to the EPA as to whether or not the LOAEL was properly used for reference in this report.

DR. SINKS: I've heard this anecdotally, Jerry, but I've heard that EPA's already been asked that question and have already made a statement about it, but I don't know where that's coming from. It's just an anecdotal information I've heard. But I think it's fair for us to ask them what their opinion is of the assessment. I also think it's fair for you to ask as the community or as representatives for you to ask because you are --

MR. ENSMINGER: You are our representative.

DR. SINKS: That's fair enough. I said as an agency we can do that, but I think you could, I think there are a number of people who could be doing this, DOD, anyone.

DR. BOVE: The other thing is for the cancers, I mean, you can do this yourself. If you -- I know how you feel about the health assessment -- but the formula for figuring out what the cancer risk is is in there. There's an exposure factor that's used to take into account, an intermittent exposure, so you can take that out if you don't think it was an intermittent exposure.

And you can use the potency factors from the EPA draft risk assessment for TCE which gives you a range, and figure three years' exposure roughly for the usual person there or ten years' exposure or whatever exposure you want, and take a look at the risk ranges using the range that EPA has in that draft risk assessment, for example. You could

do that or use the potency that was published back in the ‘80s or whatever you want to use. But you don’t use a LOAEL.

And so what we did in the health assessment was the right approach using a cancer potency level and using that equation. As I said, there are different potency levels that are in draft form in the EPA’s risk assessment. One could use those, but the committee decided to use the LOAEL.

DR. SINKS: I didn’t read this section in great detail -- but Dick, maybe you know this -- but my impression is that they were very clear they were not doing a quantitative risk assessment, and they were not looking for assigning a reference dose which is a level considered to be safe over the course of the exposure of a lifetime.

What they were looking for essentially was a point of departure at which something might be considered unsafe and what the weight of evidence was that something like that

existed for certain outcomes which is why they looked at a LOAEL which makes sense for non-cancer outcomes and not the reference dose.

And this gray zone, which is the level of the concentration that falls between the reference dose and the LOAEL, which is a gray zone because the reference dose is considered to be a -- I don’t want to use the word safe -- but people use it as that. In other words, you can be exposed to this level throughout the course of a lifetime without, you know, the vulnerable population, without an adverse event.

And that level which may be 3,000 times higher or 30 times higher or 100 times higher, which is the LOAEL, that gray zone is kind of considered to be the uncertainty of if there’s an effect or not. And I think what they did in this committee is they basically were not looking at the uncertainty area. They were looking at where is the evidence, strongest evidence of an effect, not the

strongest evidence of no effect. So you can't look at their report in terms of quantitative risk assessment and think that they weren't using it appropriately. I think they say it pretty clearly in the report.

DR. CLAPP: It's a hazard assessment instead of a risk assessment.

MR. STALLARD: Did that help clarify?

(no response)

MR. STALLARD: So the question that's before us, I think, is as a CAP can we, can you compile a response, I suppose, to this report.

MR. ENSMINGER: Well, it's being done.

DR. SINKS: And specifically, the comments that you provided to me directly before the meeting, but specifically, you know, your feelings either as individuals or the CAP in terms of how you think ATSDR should be responding.

And I think something in writing would be, I prefer to get something from you in writing that you think through, and you really

assess, and you share with us. Because it is part of what we're, I'm very interested to make sure I have it. And I know there's a lot of emotions involved with it. But having something without the emotion but with more of this is what we think you ought to do would be, I'd look forward to it.

MR. ENSMINGER: I can't help but notice that they keep referring to the uncertainty and these proposed studies that have been worked up, protocols have been written on. What are the difficulties they keep citing in this NRC report of carrying out those mortality studies --

DR. SINKS: In terms of the specific studies I think what they cite most of the ones we've already cited. And, in fact, they actually -- commend might not be the right word -- but they actually make a very clear statement that we have identified all of the most important limitations to doing the work, and we've appropriately addressed them in our study

designs. They actually say that in their summary.

DR. BOVE: They actually had a few that aren't, we didn't cite as limitations because they're not limitations. One was statistical power, which is not a limitation, in the mortality study. And they had the power calculations as Dick mentioned in the feasibility report.

The second thing they didn't have was the power calculations for the health survey because those power calculations are in a draft protocol. And the NRC has a policy, which you can agree with or not, not to review stuff that's draft form. So fine, we didn't have power calculations for the health survey in the feasibility assessment. Instead what we had were calculations on cancer incidence and the power of a similar size population.

The power calculations actually look good for the health survey as well though and roughly not that different from the power

calculations in the mortality study or the cancer incidence power calculations in the feasibility assessment. So statistical power as mentioned is one problem, and it really isn't in either study. So that's one limitation.

The second limitation they mentioned about the mortality study was the difficulty of ascertaining outcomes, which is not a problem with the mortality study. Another issue -- let's see if I can remember some of the other issues they raised. Oh, yeah, well, participation rate is a problem with the health survey, and we did cite that. So that's not one I want to, what I want to cite is just the limitations they cite that aren't limitations.

They said that it would be hard to assemble the population for either study, and that's not true. Well, let's put it this way. I'm assuming that I'm going to get the, that we're going to be able to get the DMDC data,

and it'll be of useful quality. It has been useful for the notification, and there are the proper identifiers in that database so it should not be a problem. And we talked about that. We, meaning we met with the NRC panel committee, both went up there and over the phone. We went up there twice and went over these studies. So some of these things that they claim were limitations are not.

Confirming cancers was the last one. Now for the mortality study that's not a problem. For the health survey it isn't going to be a problem we believe because we -- and I mentioned this when I talked to the committee -- we've been getting the cooperation working with our Division of Cancer Prevention at CDC to work with all 50 state cancer registries. We've also got the cooperation from the VA cancer registry so that we don't think that confirming the cancers is going to be a problem.

Now non-cancers in the survey, we have

to get medical records to confirm that. There may be some difficulties there. And so but for cancers in either study, mortality or the health survey, we don't expect to have any problems at all. So those are some of the limitations they raised that aren't.

Limitations that we all agree on are, as Perri just pointed out, participation rate. We're trying to address that. We're working with the Marine Corps, for example, to get the Commandant to sign a letter. We think that that's more important than any incentive. We're following a methodology we went over with the panel. It's called the Dillman, Modified Dillman Method, which is the state-of-the-art for mail surveys and increasing participation rates.

All that being said, we still could have a problem with participation rate. Mail surveys do have problems including the one that the military's doing, the Millenium Cohort had difficulties for example. As Tom

pointed out before, it's a crude, we have crude tools here.

A mailed survey's a good approach. It's certainly cost effective but does have some limitations. If you tried to telephone everyone, get their phone numbers and contact people over the phone, that's even harder. So there are all kinds of approaches in doing surveys. All of them have their limitations including a mailed survey.

In that sense we all agree the participation rate's going to be an issue. We're trying to address that, and we went over that with the committee on how we're going to address it.

MR. BYRON: Real quick, Frank, since participation is a critical issue for the health survey, is it possible to put the health survey online to be filled out or is there some issue with that, verification or what?

DR. BOVE: We're going to have a web-based -

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Go ahead. Why don't you say something?

MS. RUCKART: We actually discussed this in a previous meeting, but we're going to mail it out to people. And then as part of the invitation letter to participate in the survey, the plan is to provide a website address and a personal identification number so that if you prefer to fill it out online that you could. And then if we also have an e-mail address for somebody, they would get an e-mail invitation as well.

MR. BYRON: Great. The other question I had is we're talking about participation and I keep seeing this comment of a small group, that we're a small group. It's relationship, please explain to me what's a small group; what's a medium-size and what's a large. And then the other thing is transient and because we're all over the place. I see that in the other situation I spoke of earlier with Libby

I guess it is. How many people are involved there?

DR. BOVE: There's a couple different issues with the population. One is it's a transient one. Or not transient. It's all over the country. It's different than transient.

MR. BYRON: We're not --

DR. BOVE: Well, we're dispersed, and so that's an issue of locating again the correct mailing address. And we have a social security number on most of the people and name or date of birth. So there shouldn't be too much problem with locating most people and getting the correct address. Notification's been going on and that's, as far as I know, been pretty successful in getting letters to people. Scott can correct me if I'm wrong, but so that's been successful.

The problem with notification and the problem with all these studies is one problem is that we don't have information for a lot of people before '75. We have some from the

ATSDR registry and people registering with the Marine Corps, but who were before ’75. But the DMDC data, as we well know, is only going back to ’75. But we have enough information for tracking so that’s not really an issue.

Large versus small population, that’s a discussion of sample size and statistical power. As I just said we have plenty of statistical power. We assumed a 65 percent participation rate. We actually included a latency period for cancers as well and still have a pretty good power for the cancers anyway. So in particular the kidney cancer, one that they raised for the mortality study we can pick up an SMR with very high statistical power, a 1.6 which for a mortality study is pretty damn good in any study.

So they were carping about the age of the cohort. The age of the cohort is young. That’s taken into account in the power calculations, and it’s stated in the feasibility assessment exactly how the power

calculations were done. I also mentioned it when I met with the committee.

It does take age in account. The reason we still have statistical power with a young cohort is because of the size of the population. It's enormous. And it is true though that it would probably be a good idea to repeat a mortality study ten, 15 years from now where the cohort's now a lot older.

But you have statistical power to look at the cohort right now, and so that's why we're doing that. If we didn't have decent statistical power, that would have been one mark against it and the feasibility would have been mentioned in the feasibility assessment we would have maybe made a different decision than we did to go forward.

DR. SINKS: Let me just mention, I thought the term transient when it was used in the report was more of a reflection on exposure and more a reflection, I thought it was used more as a reflection on the population is

transient in terms of its duration of time at Camp Lejeune. Some people come; some people go. Some people are there for a year and a half; some people are there for four years, but they're not long term.

And they were, I think, using it in the context of most of the human epidemiologic studies which are done in the workplace are looking at workers who work in a facility much longer, you know, 30, 40 years. So I thought that's how they were using that term.

MR. ENSMINGER: We were referred to by one of the former Navy Environmental Health Center people, Andrea Lunsford not to mention any names, as a bunch of damn gypsies. That's what she referred to us as.

MR. STALLARD: That would be transient.

MR. ENSMINGER: Has historical exposure reconstruction been used in other epi studies throughout history?

DR. BOVE: Tom?

MR. TOWNSEND (by Telephone): Yeah, how far

back does the cohort range in time?

DR. BOVE: From the Defense Manpower Data Center personnel records, we can only identify Marines at Camp Lejeune from June ’75 onward. Because before that they don’t have the unit code in the database.

MR. TOWNSEND (by Telephone): What are you going to do with the people that have signed up already that precede that date?

DR. BOVE: Well, we’ve been over this before. The people we identify a priori, people who have identified by using databases such as the DMDC database or the ATSDR survey from 1999-2002, they would be part of the study. We will send surveys to everyone who registers, however, but they’ll be, the people who register who are not part of these databases, their surveys will be analyzed separately because they weren’t identified a priori.

There’s some feeling that selection bias would be an issue with them more so than

with the people we identify from the records. So that's -- we've been over this before. It made sense from a scientific point of view to do it that way.

MR. TOWNSEND (by Telephone): Okay.

MR. STALLARD: Go ahead, Morris.

MR. MASLIA: There've been a number of studies. I guess one of the earliest ones are, and these are published studies, at the Hanford site where they look at radionuclides. In Oak Ridge they've done dose reconstruction. And, in fact, all the studies, especially those, do express their results as we did in terms of uncertainty in probabilistic bands. Then there's been one at Tucson, Arizona, that Sven Rodenbeck did that used analytical models for fate and transport. We did, or myself, Dr. Aral and other colleagues, did Toms River, New Jersey. And, of course, in the current one at Tarawa Terrace, and I'm sure there are many others. But those have reference-able publications, in other words documents, both

agency as well as published in the scientific peer review scientific literature.

MR. ENSMINGER: Were they considered successful in the studies?

DR. SINKS: Yes. And let me just say that the Hanford Thyroid Dose Study is probably, I think probably at least the biggest and most influenced in a similar way by a few data points and then a model and exercise of historic dose reconstruction to try to figure out what individual exposures may have been for a large community of people who lived surrounding the Hanford plant where winds took radiation in certain levels.

So they did not have the actual data available to them about individual exposures, but they used this multimillion dollar dose reconstruction to try to assess what individuals might have been exposed to. And then they did this large study to look for thyroid cancer among that population.

So it was a very elegant study in

terms of that and in many ways is kind of the same size of population. Now, it was focused on only one cancer which was thyroid. I will tell you though --

MR. ENSMINGER: Did it work?

DR. SINKS: Well, it depends on how you define work. I think all of us were surprised the study was negative. The study did not find an excess of thyroid cancer even though we expected to find one given the exposures that had been modeled in this population. So while kind of an analogy to this study size, the dependence on the model to do historic reconstruction is fairly similar, but the actual ability to detect an increase wasn't.

Now, they also -- because thyroid cancer is often not a fatal disease -- they also did examinations, physical examinations of I forget how many thousands of people to determine whether they had thyroid nodules and then to biopsy thyroid nodules to determine if they had cancer. It was a congressionally-

mandated study. Congress gave us several millions of dollars a year to do it.

It took seven, eight, nine years to get it done. In many ways scope-wise and interest-wise politically it's of interest. Size-wise, it's, you know, having to use a few data points to come up with what these exposures were. So it was successful in getting it completed, but if you used success as were we able to connect thyroid cancer to them, we actually came out being surprised that we weren't able to connect it.

DR. BOVE: However, we were surprised we saw an association with pre-term birth.

MR. TOWNSEND (by Telephone): Hey, Frank?

DR. BOVE: Pre-term birth. It's one of these studies where what you expect doesn't happen, and what you don't expect does. And that happens a lot.

MR. ENSMINGER: Well, the point being is if they did it there, why would anybody want to stop it here?

DR. SINKS: Let me also say, and I kind of mentioned this to you earlier, there was huge value in doing the dose, the historic reconstruction beyond the epi. We were able to determine what we thought people were being exposed to, and we were able to provide that up on the web to individuals who were in that community for them to determine their own exposure.

And whether or not it proved to be valuable in the epi study, it did prove to be useful, I think, in evaluating what those exposures were. What people were exposed to from radioactive iodine, Iodine-131, for that community.

MR. BYRON: Did that work at Fernald, Ohio, also, Fernald plutonium plant?

DR. SINKS: So let me just tell you. Three parts of CDC, NIOSH, ATSDR and the National Center for Environmental Health, were all provided resources from the Department of Energy to evaluate the health effects from the

facilities involved in building bombs. And what the National Center for Environmental Health did primarily was, we did the historic dose reconstructions for the communities surrounding many of those plants.

We did not do all of them. We did Hanford. We did Fernald. We did Savannah River. Los Alamos we're actually still working on. And all of that information was very expensive, took a lot of time. We used contractors rather than in-house people like Morris to do a lot of the modeling type of work. But only a few of them were used for epi studies.

In fact, part of the historic reconstruction was to assess whether or not we thought the data was useful to do the epi studies. And in several cases my recollection is we decided it was not. And with Hanford we were basically told you will do this study. We may have decided to do that on our own anyway.

But just because you do the historic reconstruction part of it is this issue, are you getting enough information so you can do the epi study before you go ahead and run on to do the epi study which you then decide isn't worthwhile because the exposure assessment isn't any good. So just to give you a little bigger picture of that activity.

MR. PARTAIN: Dr. Sinks, let me jump back to a basic question here. What were the reasons why ATSDR decided to do the studies at Camp Lejeune?

DR. SINKS: Well, I'm not -- let me punt, Mike, asking me about the earlier studies which I was not involved with.

MR. PARTAIN: Or all the studies.

DR. SINKS: Well, let me punt on that because I wasn't involved in those decisions. So I wasn't involved in the early decisions. I wasn't involved in the current, I was involved in we need to reassess the outcome study because of the exposure information.

That's about when I became involved. But I wasn't involved in why were we doing the childhood cancer or the birth defects.

I have been involved very much in terms of what else are we going to do. And I could tell you why we -- and I said it to you earlier -- when I first, when the National Center for Environmental Health and ATSDR became linked, and I first got sucked into the vortex of Camp Lejeune, if you will, it was really because of a lot of letters that we were getting from people like yourselves, from Congress, really concerned that we were only looking under the lamplight, if you will.

You know, where the light was shining at these outcomes of a few childhood cancers and a few birth defects and why the heck weren't we opening this up more broadly to adult Marines and their relatives who lived on base and would have been exposed. And the reason, and when I first became involved, our response -- and I haven't looked back at the

letter so this is just recollection -- but our response is very consistent. The reason we're not doing it is we made a decision not to do it, and we're going to look at these studies, and that's what we think is the most important.

And when I met with congressional staffers, and it was very clear that they were not happy with that answer. And we decided to open up the door, if you will, to get expert opinion outside of our own opinion, which we seem to be pretty entrenched with our opinion. And we decided to have an expert panel, individuals, not as a FACA Committee, but experts who we wanted their advice given the information we had about what else we should do.

And it's a matter of record. That report is on our web. Ken Cantor, who is a very good cancer epidemiologist at the National Cancer Institute, was the Chair of that group. And they basically came back to

us, and they essentially said, look, you don't really have the information we need to know whether or not doing these studies are feasible. But we think that at the least you should determine if it is feasible to do an all-causes mortality study, possibly a cancer incidence study.

And they also made some comments about other parts of the population who were at Camp Lejeune who they thought we ought to include in those studies. And because of that we then didn't decide we would do the study. We said, well, let's look at the feasibility because we couldn't really provide that information to the panel. And that's really the work that Frank has had to do over the last couple years of trying to sort through the information and determine if it's feasible or not.

In Frank's opinion, and I think the opinion of the agency, is that we have good information about the feasibility. We know there are uncertainties, so part of the

uncertainties is being able to place all these people on the base in certain places and how well we can do that. We have ways of approaching that, and you know about that. We've discussed that. But --

DR. BOVE: Let me say something.

DR. SINKS: Yeah, go ahead.

DR. BOVE: We certainly didn't think that we were going to provide definitive results. But we did think that we were going to --

MR. ENSMINGER: ^ ATSDR.

DR. BOVE: -- because no epi study provides definitive results on its own, but we did think we could make a substantial contribution, and this is why. At the time when we started the small for gestational age study, there really was only one study out there, a New Jersey study, which looked at small for gestational age and these kind of contaminants.

There was also only one study at the time that looked at birth defects and these

contaminants besides the Tucson study which had problems with interpretation in the way they did the study. So any additional study would have made a substantial contribution just because there was nothing there, very little out there, to begin with.

So then we were thinking back then that here we have exposures, and it's not a ^ that we have exposures, drinking water. We know people are exposed. It's not a question of living around a landfill and not sure people are exposed or not. But we have a definite exposure route and high levels of contamination, at least high compared to what we've seen elsewhere.

And so it was a natural to want to say, okay, let's follow up what New Jersey found, or it wasn't totally clear from that one study for TCE and PCE and small for gestational age, but there was some indication with carbon tetrachloride, for example. But the question was can we see the same thing at

Camp Lejeune.

And so for childhood leukemia and the particular birth defects, childhood leukemia was the Woburn study. The Woburn study we felt had to be followed up. It was a good study, a pretty important finding. Can we see it again with another population exposed to now it's PCE instead of TCE, but then the results of TCE, and we wanted to look at both. So, again, that was the reason why we wanted to do these studies. It was exposure and we wanted to add to the scientific literature on these end points.

And it wasn't easy to get approval for these studies. But that was the point. Not, again, to say definitively anything but to add to the scientific literature because if we find something that adds to the previous study that found something, that maybe there's some -- well, for birth defects there's not that much in occupational literature to go on, but there's some. Then you start building a body

of evidence. And the body of evidence might become, if not definitive, at least convincing or strong enough for people to take action.

So that's why we do, why we chose those studies. Not because we thought that Camp Lejeune was a problem with any of these end points necessarily. We didn't know. We didn't know. But we saw there were exposures, and we wanted to look into it. We didn't think, it wasn't that we didn't think that adults weren't affected by this. That had nothing to do with it, our decision. We didn't know about that either.

At the time, if you look at the drinking water literature and TCE and PCE, the only study, I think the Cape Cod study maybe the initial one might have been around at that point. That's the only one that looked -- and the New Jersey study. The New Jersey study looked only at leukemia and non-Hodgkins lymphoma. That was it.

So there wasn't -- so we thought -- we

could have also decided at that point, well, since the New Jersey study and the Cape Cod study saw adult things we should look at that, too. But we thought we would try the childhood thing. We also had support from the health assessment which said go look at the children, you know, and said adults weren't a problem.

Even if we disagreed with that internally, we still, it did say to go look at children, so that was additional support. It had nothing to do with where the light was. There was no light. All we had was a few studies out there. And it wasn't the low hanging fruit either because in order to identify childhood cancers and birth defects, we had to do a survey.

If we had a situation like in New Jersey where there was a birth defect registry and a cancer registry and we could do these studies without having to do a survey to find out who has these diseases, and that's why the

New Jersey studies were possible. So that's this history, the early history.

Then there were a number of us who always thought that adults would be next because we wanted to follow up what happened in Cape Cod. We wanted to follow up the New Jersey study. And again, because sometimes you need an impetus from the outside to move you, and Congress moved us. The expert panel then said go check it out, and that's what we did. So that's the history from my point of view for being involved in most of those steps.

MR. ENSMINGER: So now what we're getting into, we've gotten deeply involved in these feasibility studies, drafted the studies, drafted the feasibility assessments, drafted the protocols and now we want to take it and club it in the head and kill it like a baby seal, right?

DR. SINKS: Jerry, I haven't heard you say you wanted to do that.

MR. ENSMINGER: I don't want to do that. I think you do.

DR. SINKS: Jerry, we haven't said we wanted to do that. Now what we do know is what the National Academy wrote. And what we've said to you is we're going to look at what the National Academy wrote. I don't have to repeat myself, but please don't misinterpret or try to read between the lines in terms of what our intentions are.

Our intentions are to do the best job we can, do the best with the science, do the best in terms of service because I think there's a strong service component here that is not the science issue. And that's the service to the community who you represent.

MR. PARTAIN: The letters that you have from families are indicative of a service potential. And one thing, Dr. Sinks, and I'm sorry to interrupt you, but one thing I've heard in listening to you, you quoted everything around, talked about around, talked

about the NRC, but I haven't heard what Dr. Sinks thinks about the studies at Camp Lejeune. What do you think as a leader of ATSDR about these studies?

I mean, like I mentioned earlier, your agency has been working on this for the past, what, ten years. So, I mean, I'm sure you have some type of feeling, clarity or understanding of what is going on with Camp Lejeune, and whether it is feasible, whether or not it is worthwhile. And like I mentioned earlier, you've talked up. You've quoted different people, different agencies, but I haven't heard Dr. Sinks. I'd like to hear that now.

DR. SINKS: Well, I will, you've actually been hearing me for a couple of years. I don't think you've been here.

MR. PARTAIN: I've been here two years.

DR. SINKS: But you've been hearing me. And I think one of the things I've been I think fairly clear about is that one of my, that I'm

very interested in making sure we do the best science that we can in doing those studies. I'm also somewhat concerned that the expectations of the studies are -- well, Jerry, don't close me off yet -- that the expectations of those studies may not be totally on target in terms of how those studies will be used.

That, in other words, and I've said this before, that there is a dependency on our studies to drive the policy on what should be done for the people at Camp Lejeune. And that knowing that our studies have limitations that even in the best of worlds that our study is done in the best way it can and it finds certain affects, it's not going to be looking at everything.

There are going to be things that are not done in that study and that potential for policy would be obscured if it was totally dependent on our studies that we've done. And I think I've been fairly clear about that.

And I think, Jerry, you agree with me on that.

MR. ENSMINGER: Yeah.

MR. PARTAIN: You mentioned going to Congress.

DR. SINKS: So I've been very clear about that, and I've said that to Congress, and I've said that to --

MR. PARTAIN: Let me ask you. You mentioned that you wanted to hear from Congress. Well, I mean, as a leader I would think if you believe in the studies that can't be done, that can't be executed, and they aren't worthwhile, then you would be beating down the door to Congress to tell them.

DR. SINKS: That's right. That's right. Let me also say in terms of my personal feeling about the studies, I'm concerned about our power in the current studies with childhood cancers and with birth outcomes. We have fairly small numbers of cases for each of them, and I'm concerned -- the birth defects

and the childhood cancers. And I'm concerned that our study power may be inadequate there. So that's a scientific issue, and Frank and I, we've had this discussion. And that's something as an expectation I would hope you understand as well is that we are moving forward.

We've obviously been given a very green light by the Academy to move forward with that and to do that. But I am concerned about that study power, and they were very correct in pointing out the study power for those things are limited.

I'm not concerned about study power for the other studies, for the future ones, because I agree with Frank. They're quite large. There are difficulties in getting them done. It's not just a simple to say the cancer incidence study can be done. And we've always been concerned about the cancer incidence study and our ability to do it because it's really hard. It depends on the

health survey, and it's how well that gets done.

And the other approach which Frank had mentioned to you, which is the computer-based way of doing cancer incidence, in other words looking for cancers among hundreds of thousands of people by going to 50 different cancer registries to identify them has never been done before. And so we're concerned about that.

MR. PARTAIN: And so was going to the moon in 1969.

DR. SINKS: Yeah, well, it's true. It's amazing we haven't been back since, isn't it?

MR. PARTAIN: I mean, isn't a matter of public health --

DR. SINKS: I'm not saying we can't do it. You didn't hear me say we can't do it. You heard me say I'm concerned about that. And my own belief is on these other studies, the one that I feel has the most likelihood for success is the mortality study.

And maybe it's a bias because I've done several mortality studies, and they've been fairly successful. And they're, it's not dependent on so many other things that fall into line to get them done. It's dependent on the ability to get the database information and the infrastructure to do the mortality studies exist.

I'm very supportive of us moving to do the studies. I think they have utility in terms of the information as long as the expectations are understood that if we don't find something, it doesn't mean there's nothing there. And if we do find something, it may or may not mean it's causal, and that's the way our science works.

And so that's my personal feeling. I think that, I'll just say, my other, I'll put it in a category of concern, is this agency has been involved in this in ten years, close to ten years.

MR. ENSMINGER: No.

DR. SINKS: How many?

MR. ENSMINGER: Eighteen.

DR. SINKS: Eighteen?

MR. ENSMINGER: Since the public health assessment started.

DR. SINKS: But in terms of doing the epi and these studies, for ten years. And I like to see things done as quickly as we can get them done. And this has been, it's been a very difficult road with a lot of twists and turns in it that is probably very frustrating to our staff and to you and to everybody.

And I'd like to see us get this, get it done as well as we can -- before you jump on me, Jerry -- because I think we ought to be getting these things done. And I'm not saying, I'm not saying that we've done a bad job because we haven't gotten done sooner. I'm just saying it's been very difficult, and it's a little frustrating for us to take so long to get something done that's so meaningful to so many people.

MR. ENSMINGER: Well, one of the main reasons why it took so long to get it done was because you couldn't get the stuff you needed to do your work, remember?

MR. STALLARD: That's a perfect segue --

MR. ENSMINGER: Hold on a second. I'm not done yet. Now, you talk about the length of time that it takes to get something done. What is the length of time it's going to take for us to see you come out with a statement about this report?

DR. SINKS: So what did I say three times this morning?

MR. ENSMINGER: Well --

DR. SINKS: I said a couple of weeks or a couple of months. Is that what I said?

MR. ENSMINGER: You know, a couple months?

DR. SINKS: Is that what I said? A couple of weeks to a couple of months.

MR. ENSMINGER: That's a huge window, Dr. Sinks.

DR. SINKS: Okay, well, that's what I said.

MR. ENSMINGER: Why so long? You've had this report since, what, the 11th of June?

DR. SINKS: Couple of weeks to a couple of months.

MR. ENSMINGER: Maybe I can get somebody in Congress to ask you for it.

DR. SINKS: That's fine.

MR. BYRON: Real quick comment, does the Marine Corps or any branch of the service now register cancer victims that are active duty and mortality? Do they have a registry? And if not, shouldn't that be brought to their attention that they should start maintaining one?

MR. ENSMINGER: What's the acronym for the Navy's?

MS. RUCKART: Yeah, there is ACTUR, and the DOD has one, and then the VA has one.

DR. SINKS: Active ^.

MS. RUCKART: Yeah, yeah, we've been working with them. When we say we've been working with the 50 state cancer registries and the

federal registries --

MR. ENSMINGER: I'm talking the military.

MS. RUCKART: Yes, yes, the DOD and the VA, and we've been having conversations with them just like with the 50 state cancer registries as far as working with us to confirm any self-reported cancers in the health survey. They are supportive and --

MR. BYRON: Okay, I just want to make sure it's for active duty, too, because Sovy's (ph) there, because as I understand it right across from the Beirut Memorial, there's a very large cemetery for infants, and it sounds like an awful lot of them were Marine Corps children. And we could probably go right through that cemetery and write down names.

DR. BOVE: Yeah, but you see the problem is that none of these registries that the Defense Department has go back far enough.

MR. BYRON: Right, right, I'm talking about --

DR. BOVE: But if they did --

MR. BYRON: I mean, today have they corrected that problem? Is there a registry for them now? It sounds like there is. I mean, you can confirm that one hundred percent?

MS. SIMMONS: There's medical records, but I don't think --

MR. BYRON: Then you guys should make a recommendation that they make a registry.

MR. ENSMINGER: You have a tumor registry.

DR. BOVE: Wait, wait, there's a tumor registry.

MS. SIMMONS: Yeah, there's a tumor registry.

DR. BOVE: Yeah, the cancer --

MR. BYRON: But if I have a child, and it dies two weeks after being born on base, is there a registry?

DR. BOVE: Would you be captured by the DOD registry? I'm not sure.

MR. BYRON: Well then, somebody needs to make a recommendation --

DR. BOVE: It depends on where they're seen and --

MR. BYRON: -- for that to happen.

DR. BOVE: -- I think that has something to do with it.

DR. SINKS: Jeff --

MS. SIMMONS: I'll look that up and let you know. I'm not sure.

DR. SINKS: Jeff, let me, you know, we throw around words that have different meanings for different people, and so when you speak of a cancer registry, let me just say, a cancer registry specifically is a dedicated place where laboratories or physicians report an outcome that is usually confirmed by pathology as a cancer. And they are totally dedicated usually to just cancer.

So every state has a cancer registry. It doesn't exist in the HMO. It doesn't exist in Kaiser Permanente or your doctor. It's when your doctor sends a pathology slide to a pathologist, and it comes back as positive for

cancer, God forbid, that report goes to the cancer registry and the cancer registry maintains it.

MR. ENSMINGER: The VA has one.

DR. SINKS: Now, I think the VA has one. Now, when you're talking about a cancer registry for the active military, the reality is that most of the people in the active military are fairly young. So most of the cancers, cancer is really an old age disease for the most part. And we, you know, there are childhood cancers and unfortunately.

But for the most part the burden of cancer is going to be in the 60s or 70s or 80s or 90s, and it's really going to be most of the, most military people who develop cancer will develop it after they're no longer in the military. So the military wouldn't even have them. It would be in the VA.

Now, the utility of the military having a cancer registry kind of depends on, it's not clear to me what the utility would

be. There may be some, but you're really talking about a much smaller number of cases. And you really want to follow people up their lifetime past some exposure.

Also, a number of the people who were in the military who developed cancer are going to end up in the state cancer registries because they deal usually with the whole population, a defined population, either in an area of the state or the whole state.

MR. BYRON: When I said cancer, and I meant both, mortality and cancer. When a child dies, is it registered with the military in a registry that says this year 20 children at Camp Lejeune passed away. We don't know why. We don't care. They passed away. That's all there is to it.

DR. SINKS: I would say unless somebody is looking for the infant mortality history of, you know, infant mortality among the infants born to children in active military, there's no registry. Somebody would probably have to

actively be looking for it.

I will tell you that that is usually one of the public health indicators that we use to measure the health of the population. Infant mortality is commonly used to compare this country to another country and state-to-state and whites-to-blacks and things like that.

DR. BOVE: Yeah, the states would have that information. One of the things just quickly - -

MR. BYRON: It doesn’t. One of the problems with the states having it, it doesn’t point to there’s a problem at Camp Lejeune or there’s a problem at Benning, you know.

DR. BOVE: No, that’s true. And you have to do special studies to pick that up. That’s right. That’s right.

MR. BYRON: Well, you shouldn’t have to do too much of a study if there’s a registry and you come up and you say there’s 200 children died this year.

DR. BOVE: They don't have it. That's what I'm saying.

MR. BYRON: And the fact that you recommend they do that.

DR. BOVE: The other thing is that the VA often doesn't report its cancers to the state, and there's been a problem there. That's why we're working with both the VA and the states.

One quick thing though when I said we were working with all 50 states, I want to make a distinction here between a data linkage cancer incidence study and a cancer incidence study based on the health survey. What I'm talking about, because we put aside the data linkage study.

And the reason we have is because it really needs national legislation. There needs to be a federal cancer registry, a nationwide cancer registry, to really do that study properly, and it's something we'd like to see happen.

But what we're focused on is the

health survey, and we have the cooperation of all 50 states so far in confirming the cancers that are self reported in that survey. So that's what I'm talking about when I say we have the cooperation. We would not have 50 state cooperation for the data linkage partly because some of the states cannot do so. They have in their state law that they cannot be part of such a thing. So that's why I said it will require national legislation.

When the VA, they're doing the Gulf War cancer incidence study, they've been having trouble lining up cancer registries for this kind of data linkage. They've been able to line up some, but for example, New Jersey refused to participate. Other states have said that they can't participate because of the laws in their state.

So for a data linkage study that's similar to how we do a mortality study, with a mortality study we send the social security numbers and date of birth to a national

database or databases and do the data linkage. We can do that for mortality. We cannot do that for cancer incidence until there's a national registry, and that requires federal law, I would think.

MR. BYRON: That could be a recommendation from us.

DR. BOVE: Well, I think --

Who's this?

MR. TOWNSEND (by Telephone): This is Tom. Can I get in a minute?

DR. BOVE: Sure.

MR. TOWNSEND (by Telephone): Right now?

MR. STALLARD: Right now.

MR. TOWNSEND (by Telephone): Two things. I live about 120 miles downwind from Hanford. That has been going on as long as I've lived here, and there's a hell of a lot of people. There's down-winders in Idaho and there's down-wind types east of Hanford in Idaho and Washington. There's a hell of a lot of mortality out here that seems to have been

swept under the rug.

Hanford spends a lot of money on restoration projects for cleaning the place up, but it left a trail of destruction that seems to be overlooked. That's water over the dam at this point. I'm very concerned that the National Academy of Science's report for what it is, has been an absolute stopper on the effects on the application of veterans' claims with the Department of Veterans Affairs. Now, they have just put a stopper in everything, and this is the best thing that came down the line for them because they don't have to deal with us.

I'm on an appeal with the Board of Veterans Appeals. I'm tired of fighting with the damn VA. I fought with them for 35 years now, and they have, they just tell you to stick it up your butt as far as the Camp Lejeune has anything to do with it. This has got to be resolved.

MR. STALLARD: Tom, this is Christopher.

Are you saying that since the release of that report on, what, the 11th of June was it?

MR. TOWNSEND (by Telephone): Yes.

MR. STALLARD: You have been denied and they cited that report, that committee report?

MR. TOWNSEND (by Telephone): Hell, no. They'll run you around 'til you quit. No, I just said screw you guys. I just filed an appeal to go to the Board of Veterans Affairs. I don't want to deal with those guys any more.

MR. STALLARD: Okay, Tom, thanks very much.

Listen, I have a question I need clarity on. We heard Dr. Clapp say that the committee tried to disentangle the science from the potential for policy implications, something in there, right? We heard Dr. Sinks say that in the report there's this opportunity about policy.

Can we talk a little bit more about that because it seems to have just over my head anyway. Who's going to be looking at the policy? What is that policy, and who are the

proponents who should be addressing it?

DR. SINKS: Well, let me just say I think it goes directly to what Tom is bringing up quite frankly, which is the committee very clearly stated that there are policy issues that must be dealt with in terms of these exposures, and the Department of Defense should move forward and not await the science that ATSDR was doing to make those determinations. That's fine.

The difficulty in what they've also done is their tox assessment and the categories that they've put out there in terms of how they've ranked the associations between certain conditions which I think actually will make it a little more difficult for the policy decisions to get made.

So there is both an opportunity and a difficulty in what they've done. The opportunity is to address through a different venue than an individual like Tom having to go to the VA and fight his case and put in a very direct statement to the DOD saying you need to

be addressing this and coming up with a policy.

(dog barking in background)

Tom, you should feed that dog.

MR. STALLARD: It's barking up the wrong tree.

DR. SINKS: It's barking up the wrong tree. But the other part of it is the adequacy of the tox assessment that's done in there that I think will just make it more complex for the Department of Defense. I don't know. I think it will leave people with a negative taste, and I think we can --

MR. PARTAIN: In layman's terms, Dr. Sinks, the report is a trump card because it is being, you know, one hand says, oh, don't worry about anything in the future; i.e., ATSDR or any other studies. You need to take care of this now.

But yet on the same hand you may have been exposed, but it really didn't do anything to you. It's a trump card to stop you from

what you're doing at ATSDR and suddenly now based on what that report says. And that's what's going on with that report. And the, you know, we were talking about the LOAELs and using the LOAELs earlier. I mean, it doesn't make sense.

MR. STALLARD: Well, my question is then in this thoughtful and comprehensive response that will be forthcoming in three to whatever months, will we address, will ATSDR be able to address the conundrum, the conflict, in those policy issues?

DR. SINKS: I think in terms of the two-to-six, two weeks to two months statement that I have given Jerry, I think our primary issue there is going to be focusing on what it's saying about our studies, not what it's saying to the DOD about what the DOD ought to do. At the same time I think that we are willing to play a role in helping to assist DOD in looking at that. And I would suggest that the folks sitting over here have a role to play in

that, too.

And what I was saying earlier was there is a very strong message in there to be moving ahead on the policy. Now, it doesn't say how to do it. It doesn't say what to do, but it would seem to me that the more people can work together cohesively, even if they sit on different sides of the table to decide how we're going to do that or what role there is, there's opportunity to do that.

Now, it may be that people aren't comfortable, you know, I think I heard you say, Jerry or Jeff, that maybe you weren't ready to come up with those kinds of things because there are also parts of the report that, I think, you know, their weight of evidence analysis, you know, you don't necessarily want to grab a hold of that. But I think there ought to be a -- and maybe this is just my being naïve and an idealist but which I'm probably a little of both -- but I think there are vested parties in this whole

issue that everybody wants to see a win.

I would like to believe, let me say this, that you can have a lose-lose or a win-win out of the circumstance having to do with Camp Lejeune. And the question is how do we all get together and identify the win-win and make it happen. So that's my kind of view, and it may be I'm an idealist and I'm naïve, but I saw that statement as an opportunity.

I also saw limitations in the report that troubled me, but I think there are things to grab a hold of. The thing I always was worried about, and I've said it several times today, and I've said it before, is a dependency on ATSDR to do science which would be the only thing driving the policy, and that our science I didn't feel would be sharp enough to drive the policy as far as it needs to go.

MR. STALLARD: One practical step toward win-win would be something we haven't resolved and that is the engagement with the VA. And I

think collectively something has to happen. I don't know what that is to engage them in this process.

DR. SINKS: You know, I presume before we have another discussion while I was in the room about it, but, you know, I think we were proactive in sending the letter. It was very direct to them. We then followed up last month, probably a little too late, but in June I think with a second letter saying, hey, please come. We haven't heard back from them on that.

But it would be very nice to have the VA or have somebody who was very interested in this situation, not disinterested, but interested in this situation and seeing an opportunity from the VA being involved. How we get that done I don't know. But I think that is part of the policy issue that needs to be resolved. And I honestly have no clue how the VA has been, you know, if they even see themselves as part of the message that came

from this report. I don't know.

MR. BYRON: They do not see themselves as part of this problem because they've not been directed by Armed Services Committees to get involved. So the first thing that needs to happen is somebody needs to go to the Armed Services Committee, Senate and the House, and say, look, we've got all these Marines here that have addressed this, and you're not even participating.

I mean, these are, me and Jerry are both veterans. Denita's a veteran, and she's passing now. And these people aren't even involved? I can't believe that. Where's the EPA? They can make decisions on Libby, Montana, but not Camp Lejeune? Where's Secretary Sebelius? I don't see her here. I'm infuriated if you don't mind. Where's the CDC Director? Where are they stepping out to make a statement that this needs to go further?

Or maybe it doesn't need to go

further, but the point is is they've made no comments. And you're right. It's kind of, for me to bring up certain issues on what to look at in these studies might be detrimental to getting more done later. So as a group we have to decide what we want to bring up to you so I can't give you any answers today on the NRC report, and I don't think you were expecting them today, were you? I mean as far as our comments, you know, to two weeks to two months.

(multiple speakers simultaneously speaking)

DR. SINKS: Jeff, let me just answer this to you. You're not hearing me -- I'm here as me. I'm the Deputy Director of the two centers. You're hearing me. I'm not putting out a policy a week or I never have done that with you guys. I've always tried to be, this is just another guy sitting across the table from you. I can tell you I have brought up this issue to you. I've brought up this issue to DOD. I've brought this issue up to the Senate

Arms Forces, not about the VA but the other issue.

MR. ENSMINGER: What's your boss think?

DR. SINKS: I have brought this up to Howie. Now, I can tell you I as an individual will continue to bring this up. And I am encouraging --

MR. ENSMINGER: What's he thinking?

DR. SINKS: -- let me -- I don't want to speak for Howie. I'll speak for myself. And I'm telling you. I'm sitting here encouraging you to reach across the table to them. The ones you keep saying are they and say what can we do together to start looking at this issue about what to do as a way to do it.

Now maybe that can't happen. I don't know.

MR. ENSMINGER: Well, when I go to talk to them, I'm told they can't speak to me. They've been ordered not to speak to me.

DR. SINKS: It may be, but I will say the same thing to the Department of Defense in

terms of, hey, there's an opportunity here for all of us to be sitting down here in terms of this service piece, not the science piece but the service piece.

And I think the Academy has half done it. So that's just me. Now, I can't speak for Dr. Freidman. I can't tell you I can go tell Dr. Freidman he ought to go do this. But I can tell you how I feel I ought to do it, and I will do it.

MS. RUCKART: There's been a request earlier when we were discussing our outreach to the VA if we could share the two e-mails and letter we sent them requesting they participate in some form with the CAP.

DR. SINKS: E-mails ^ letter.

MS. RUCKART: Right, well before we asked you to send a letter, Christopher Stallard e-mailed his contact there and Frank also e-mailed that staff person who's different than Rear Admiral Dunne, and then when we --

DR. BOVE: He has an official letter from

the agency that I think is more appropriate.

MR. STALLARD: It would be. That was an informal, former CDC person.

DR. BOVE: Informal channel, but the formal channel you should see.

MR. ENSMINGER: Dr. Clapp was putting together a format when we first started this about a response. I would like to hear more from Dr. Clapp on that.

DR. CLAPP: Why don't I draft at least a first stab at this and send it around to the CAP? I can do that in the next week.

MR. BYRON: And that might go miles to getting the VA involved, too, as far as I know. I don't know what your comments are going to say, but I think I have an idea.

DR. CLAPP: Yeah, we might try to put in something about compensation. That would definitely involve the VA.

MR. STALLARD: And that would include the comments made earlier on the water component, correct?

DR. CLAPP: Yes.

MR. STALLARD: And that could --

MR. TOWNSEND (by Telephone): Chris.

MR. STALLARD: Wait a minute, just a minute, Tom.

And if that were to be delivered to ATSDR in a timely fashion it could be considered in their own deliberations I would suspect.

Yes, Tom.

MR. TOWNSEND (by Telephone): Chris, I wrote a letter to Admiral Dunne about three days after Dr. Sinks. And the Undersecretary for Benefits, and they are surrounded by a coterie of no-men, no-women. They don't know what. They're very upset with me because I have the telephone number and fax numbers. I just can't understand why a government agency that has a responsibility to the public is so unresponsive. They won't answer anything.

I have been despondent over what's going on. I'm depressed about Denita. I

haven’t been very active, but I will get back on their butts. They’re using this as just another reason to stay the hell away. They don’t want, the VA I’ve dealt with for 35 years. I have an 80-50 disability, and you have to fight them every bloody foot of the way, and this is just one more problem that they don’t want to face. This guy, the new admiral, he retires and then he takes over as Assistant Undersecretary for Benefits, and do you think I can get an answer out of anybody? Hell, no. They just don’t respond. Just go away and die.

MR. STALLARD: Thank you, Tom.

MR. TOWNSEND (by Telephone): They’re not terribly responsive. I will get off my butt and write them another letter and see what happens. I’m not terribly helpful.

MR. BYRON: I think we need to get the scientists’ responses and take them to the VA and to the Armed Services Committee. I assume they’re going to be sent there. We’ll need to

demand action even if we have to stand on their doorstep in Washington.

MR. STALLARD: We're about ready to wrap up. Thank you all for very robust dialogue this session.

Did you want to add anything, Perri, in terms of DMDC data and any other outstanding issues we have not yet covered?

UPDATES ON HEALTH SURVEY AND MORTALITY STUDY

MS. RUCKART: Well, there's really not much to say about that. Scott told me he is developing a spreadsheet to send to the DMDC and try to outline what is needed. And we're hoping to try to schedule a conference call between the DMDC, us and the Marine Corps soon, either later this week or next week.

As far as any other issues I think there's really nothing to report and we're going to see how some of these other things unfold.

MR. PARTAIN: Scott, is there any way you can redo the thing with the blue?

MR. WILLIAMS: It should have had it on the computer printout.

MR. PARTAIN: Is there any way you can redo it so it can be read? I can't read the light blue.

MR. WILLIAMS: I might can e-mail the file to somebody here, and they could print it.

MR. PARTAIN: You could send it to Perri, and she could --

MS. RUCKART: No, why don't you e-mail it to me, and I will e-mail it?

MR. PARTAIN: I appreciate it.

MR. BYRON: Why don't you e-mail it to Congressman Boehner since he thinks that this is only a North Carolina issue and there's 5,000 Ohio residents because he will be hearing from me.

WRAP-UP

MR. STALLARD: Do we need to talk about potential next dates/timeframe and what we would hope to achieve? Three months from now what would that be? October. So we'll look

at October.

MR. ENSMINGER: Do you think we'll have the comments from ATSDR?

MR. STALLARD: Well, I think that's what we're going to do right now.

DR. SINKS: Is three months more or less than two months, Jerry? I'm trying to remember.

MR. STALLARD: But anyway, what we want to, let's just put out our expectations. By that time we would be able to have the response, an ATSDR response.

Dr. Sinks, is that copasetic to have the expectation that within, by the October timeframe we could have the ATSDR response?

DR. SINKS: I think what my intention would be is that hopefully we'd get this response done, and we present it to DOD, Congress and the CAP at the same time. And I wouldn't wait for a CAP meeting to do it. If we've got it in four weeks, we'll do it then. We'll do it by phone call. If we've got it in nine weeks,

whatever, we won't wait for a CAP meeting to provide you the response.

MR. STALLARD: Thank you.

Outstanding is VA engagement. Between now and then, Dr. Clapp, you're going to have, by next week you said, probably a first draft.

DR. CLAPP: Yes.

MR. STALLARD: CAP response. What else would be an appropriate agenda item or Perri will you coordinate that?

DR. BOVE: There'll be other things to add to the agenda I'm sure.

MR. STALLARD: Any other questions from the CAP members?

(no response)

MR. STALLARD: I'd like to thank you all for being here today. Please take a moment to reflect and think about Denita and her family and this time of passing for her.

MR. BYRON: Also, Sandy Bridges' mother has recently passed away, and that's why she wasn't able to make the meeting.

MR. STALLARD: Thank you, Jeff.

Safe journeys to all. Thank you very much.

MR. ENSMINGER: Tom, I don't know if you and Allen and Sandy were on the phone when I made this announcement first thing this morning, but I got a call late last evening from Denita's son, and she was placed in a hospice care center late yesterday afternoon, and they've given her 72 hours.

MR. TOWNSEND (by Telephone): I thought she was in hospice. I think Sandy told me that.

MR. STALLARD: Thank you, Tom. Thank you, Sandy.

(Whereupon, the meeting was adjourned at 3:00 p.m.)

CERTIFICATE OF COURT REPORTER

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COUNTY OF FULTON

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of July 8, 2009; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 19th day of August, 2009.

_____

STEVEN RAY GREEN, CCR, CVR-CM, PNSC

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