STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:	
APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION FOR REPEAL OF EXISTING RULE 50 CONCERNING PITS AND BELOW GRADE TANKS AND ADOPTION OF A NEW RULE GOVERNING PITS, BELOW GRADE TANKS, CLOSED LOOP SYSTEMS AND OTHER ALTERNATIVE METHODS TO THE FOREGOING, AND AMENDING OTHER RULES TO MAKE CONFORMING CHANGES; STATEWIDE	CASE NO. 14,015

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

COMMISSION HEARING

BEFORE: MARK E. FESMIRE, CHAIRMAN
JAMI BAILEY, COMMISSIONER
WILLIAM OLSON, COMMISSIONER

Volume IV - November 7th, 2007

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Commission, MARK E. FESMIRE, Chairman, on Wednesday, November 7th, 2007, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

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C U M U L A T I V E I N D E X

Monday, October 22nd, 2007 (Volume I)
Commission Hearing
CASE NO. 14,015

(Continued...)

PUBLIC COMMENTS (Continued):

DIVISION WITNESSES (Resumed):

(Continued...)

(Continued...)

(Continued...)

DIVISION WITNESSES (Continued):

* * *

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Additional submissions by the Division, not offered or admitted:

* * *

A P P E A R A N C E S

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FOR NEW MEXICO OIL AND GAS ASSOCIATION; CONOCOPHILLIPS COMPANY; DUGAN PRODUCTION CORPORATION; and ENERGEN RESOURCES CORPORATION; and an INDUSTRY COMMITTEE comprised of BP America Production Company, Inc.; Benson-Montin-Greer Drilling Corporation; Boling Enterprises, Ltd.; Burlington Resources Oil and Gas Company; Chesapeake Energy Corporation; Chevron USA, Inc.; ConocoPhillips Company; Devon Production Company; Dugan Production Corporation; Energen Resources Corporation; Marathon Oil Company; Marbob Energy Corporation; Merrion Oil & Gas Corporation; Occidental Permian, which includes OXY USA, Inc., and OXY USA WTP Limited Partnership; Samson Resources Company; J.D. Simmons, Inc.; Williams Production Company, LLC; XTO Energy, Inc.; and Yates Petroleum Corporation:

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(Continued...)

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* * *

ALSO PRESENT:

JOHN BARTLIT, PhD
DONALD A. NEEPER, PhD
New Mexico Citizens for Clean Air and Water

* * *

WHEREUPON, the following proceedings were had at 9:06 a.m.:

CHAIRMAN FESMIRE: Okay, let's go back on the record. Let the record reflect that this is the reconvening of Case Number 14,015. I will read the style as soon as I get it. The Application of the New Mexico Oil Conservation Division for repeal of existing Rule 50 concerning pits and below grade tanks and adoption of a new rule governing pits, below grade tanks, closed loop systems and other alternative methods to the foregoing, and amending other rules to make conforming changes; statewide.

Let the record also reflect that it is 9:05 a.m. on Wednesday, November 7th, 2007. Commissioner Bailey, Commissioner Olson and Commissioner Fesmire are all present, we therefore have a quorum.

There is a housekeeping matter that we have to take up first.

Yesterday we had worked out a wonderful little schedule that turned out not to be as wonderful as we thought it was going to be. We're going to have to make some changes.

The first change, which I'm sure is going to disappoint everybody is, we're no longer going to be able to work over the weekend and holiday. Ms. Sanchez, quit smiling.

(Laughter)

CHAIRMAN FESMIRE: We will meet today in this room, Thursday in this room, and Friday in this room. Friday afternoon's time will be dedicated to Dr. Stephens' testimony.

We're then going to take Saturday, Sunday and Monday off and reconvene Tuesday morning in Porter Hall at 1220 South St. Francis, Santa Fe, at nine o'clock in the morning.

Tuesday morning -- or Tuesday all day will be dedicated to the OGAP witnesses, plus any other witnesses that we can get in the time that they don't use.

Wednesday the 14th we will meet in Porter Hall from 9:00 to 6:00. Wednesday morning and as much of the afternoon as necessary will be dedicated to Dr. Neeper's testimony.

We will then meet Thursday the 15th from 9:00 to noon in Porter Hall, and we're going to have Thursday afternoon off. The reason is that two of the Commissioners have to be someplace else.

We will then meet Friday the 16th. We had originally intended to take that day off, but it looks like we'll have to meet that day all day, starting at nine o'clock in the morning and going to 6:00 in the afternoon in Porter Hall.

In short, we intend to do the rest of the week in this room, and then starting next Tuesday the 13th, we'll meet in Porter Hall and hold all the rest of our meetings in Porter Hall.

This Thursday morning we will convene at nine o'clock, but the OCD -- OCC has their regular Commission meeting. There are two, maybe three pieces of business before the Commission. We don't expect them to take very long, and we will go immediately into this hearing after we complete the ordinary business of the Commission that morning. I estimate it won't take more than 15 minutes. Those of you who are only interested in this hearing may want to dawdle a little getting here, because we do have something this Thursday, in this room, to address.

Are there any que- -- If we have to go past Friday the 17th [*sic*], it is my intention to take the week of Thanksgiving off and not meet that week, and reconvene on Monday the 26th. Let's hope we don't go that fair. I think that's a vain hope, but that -- and we'll play it by ear after Monday the 26th.

Are there any questions, anything we have to address, anybody who that just simply fouls up their total schedule? Let the record reflect that there were no responses to that question.

And we will -- Oh, Mr. Hiser?

MR. HISER: I will not be here on the 16th because of that pre-existing enforcement hearing.

CHAIRMAN FESMIRE: I'm sorry, I forgot about it. That's the reason -- Is that a problem that we need to address?

MR. HISER: I think it would only be a problem, Mr. Chairman, if the industry committee were trying to be putting on its case on that day. If we're just cross-examining, I think Mr. Carr could probably handle it. But if we have to try to put on our case-in-chief, it would be more difficult.

CHAIRMAN FESMIRE: Okay. Well, since we're going out of order, there may be other things that we can do that day.

Okay, and I have just been informed of one small glitch. We have to be out by six o'clock on -- next Wednesday, out of Porter Hall, so we may have to quit a few minutes early so that State Parks can use Porter Hall.

Other than that, that's the way we're going to go. If we end up in your case-in-chief, Mr. Hiser, during the 16th, we will reschedule and do something else that day. I'm sure there will be something we can do.

Okay. Now, are there any questions or any objections to that?

Mr. Brooks?

MR. BROOKS: No objections, Mr. Chairman. I was drafting a thank-you letter to Commission counsel for getting us Sunday off.

(Laughter)

CHAIRMAN FESMIRE: So we will be taking this at a much more leisurely pace than originally anticipated.

With that, we will go on to the next issue before the Commission.

I believe, Mr. Hiser, that you have a letter from the Secretary to support your objection to the introduction of -- is it Exhibit 12?

MR. BROOKS: 14.

CHAIRMAN FESMIRE: Exhibit 14?

MR. HISER: Mr. Chairman, having gone through the order of the Commission and with the task force itself having said that they would forward a number of additional documents to the Division, I am not going to stand on that objection.

CHAIRMAN FESMIRE: Okay, so you withdraw your objection?

MR. HISER: I withdraw my objection.

CHAIRMAN FESMIRE: Okay. Thank you very much, Mr. Hiser.

MR. BROOKS: Do other counsel also withdraw their objections? Because I believe Mr. Carr and Ms. Foster also

objected to that exhibit.

CHAIRMAN FESMIRE: Ms. Foster?

MS. FOSTER: No, I still have a standing objection to that exhibit.

CHAIRMAN FESMIRE: Okay, I'll overrule that objection.

MR. CARR: And since you overruled Ms. Foster's, I'll withdraw.

CHAIRMAN FESMIRE: Okay.

(Laughter)

MS. FOSTER: Thank you.

CHAIRMAN FESMIRE: Okay, for those who are keeping score, it's one overruled, one -- two withdrawals, right?

MS. FOSTER: Pertaining to that exhibit then, Mr. Chairman, if I could just have a clarification from the Division. They made the statement that that was not going to be used for the truth of the matter asserted. Is their intention with that exhibit, then, just to demonstrate the number of communications that occurred between the parties? Because I don't think that that was really made clear yesterday.

CHAIRMAN FESMIRE: Mr. Brooks?

MR. BROOKS: Well, Mr. Chairman, we are not certain what relevance exactly this will have in the

context of the proceeding. However, we are going to put on testimony by Mr. Jones as to what was consensus and what was not consensus as to the specific language, section by section, line by line in the Rule. If there are disputes about that issue, then some of that correspondence may be relevant.

Now we are not going to contend that there's any evidentiary value to the effect that some members of the task force, or members of the task force at some times, expressed agreement with certain matters that were not consensus. But if there's a dispute about what is consensus and what is not, then we might want to refer to some of these communications for that purpose.

CHAIRMAN FESMIRE: Okay, so you're asking that this exhibit be admitted simply to show the number of communications, but you're reserving your right to bring it up as a rebuttal exhibit at some point in the future?

MR. BROOKS: Well, we believe it is relevant for the purpose of showing what -- We believe it is admissible for the purpose of showing what the people in the task force said. Now I cannot anticipate at this time exactly for what purposes that might be relevant. Obviously it could be admissible for that purpose, but if what they said is not relevant then it doesn't prove anything. But we cannot anticipate how the testimony will develop as to

necessarily exactly for what it might be relevant. That's why I don't want to limit it to what Ms. Foster suggested.

CHAIRMAN FESMIRE: Okay. Ms. Foster, I'll go ahead and overrule the objection, but you still have the opportunity to object at some point when that relevancy objection raises itself.

MS. FOSTER: As I mentioned yesterday, in light of this exhibit coming in, then, I would like to expand my witness list, and actually the person I would like to have testify on this matter, then, would be Mr. Reese Fullerton, who was the facilitator on behalf of OCD on this issue.

It just has to do with, you know, the consensus agreement, what the parties agreed to in terms of consensus and that the consensus was going to be unanimous and that was how the report was going to come out. I believe that this exhibit really is an end run around whether an issue was full consensus or not. I believe that, based on what Mr. Brooks just stated, you know, if there's a question of consensus, they're going to -- they're intending to look at some of those e-mails. And the substance of those e-mails, to determine whether there was consensus, I don't believe that is really something that is -- what I'm saying is, that is really more than for the truth of the matter asserted. That is the truth of the matter asserted in this issue.

So I would like to ask the Commission's indulgence to add Mr. Reese Fullerton as a witness to my case, then, on this particular issue.

CHAIRMAN FESMIRE: As a rebuttal witness?

MS. FOSTER: As -- Yeah, I could use him as a rebuttal witness.

CHAIRMAN FESMIRE: Okay. I think that would be the proper way to address this, rather than adding to the witness list now --

MS. FOSTER: Okay.

CHAIRMAN FESMIRE: -- because I don't think that would be viable.

MS. FOSTER: Okay.

CHAIRMAN FESMIRE: Okay?

MS. FOSTER: Thank you.

CHAIRMAN FESMIRE: Mr. Brooks, I believe your witness was being cross-examined.

MR. BROOKS: Mr. Chairman, that is correct. We do have a couple of housekeeping matters that we need to raise at an appropriate time, and we'll ask the Commission -- with your permission I'll describe them and ask the Commission if they would prefer now or later in the proceeding.

One is, the Division is now recommending some changes to the proposed rule. It is a very short list of

changes, one page here, but we wanted to -- we would have had this on the first day of the proceeding, had the computers not crashed, but that is one of the items.

The other is, the issue came up concerning the notice to Mr. O'Donnell yesterday, which according to my -- the response to my motion to compel was attached, but apparently in fact was not attached. The computers now being back up, I have been able to generate copies of that response and have them available at this time.

Does the Commission wish for me to address those two things now, or go ahead with the witness and take them up later?

CHAIRMAN FESMIRE: Why don't you go ahead and take them up when they're relevant, when it becomes --

MR. BROOKS: Very good.

CHAIRMAN FESMIRE: -- pertinent to the argument?

MR. BROOKS: Very good.

CHAIRMAN FESMIRE: Okay?

(Off the record)

CHAIRMAN FESMIRE: Okay. Mr. Brooks, Commissioner Bailey has convinced me that perhaps now is the time to do it.

MR. BROOKS: Very good. Thank you, Commissioner Bailey. Thank you, Mr. Chairman.

Okay, the first matter, then, is the proposed

revisions to the Commission -- to the Division's proposed changes.

(Off the record)

CHAIRMAN FESMIRE: Mr. Brooks, what's the reason that these weren't presented to counsel earlier?

MR. BROOKS: The requested changes?

CHAIRMAN FESMIRE: Yes.

MR. BROOKS: They were generated and Mr. Brad Jones was working on them. They were generated last weekend, and a series of snafus occurred.

Mr. Jones attempted to e-mail them to me on Sunday at a time when my in box was full, and was unable to e-mail them. I cleared out my in box and communicated that by e-mail to Mr. Jones on Sunday, however he apparently did not receive that e-mail, and he did not transmit them again on Sunday. Then on Monday when we got back to the matter, the computers were down. And he attempted to e-mail them to me at home Monday night, however he didn't get them till much later than I expected him to, and I didn't check my e-mail box late. I found them again on Tuesday, and that's how we got to where we are now.

CHAIRMAN FESMIRE: Okay. And these are requested changes to your proposal?

MR. BROOKS: That is correct, Mr. Chairman.

CHAIRMAN FESMIRE: Okay. Any objection?

MS. FOSTER: Mr. Fesmire -- Mr. Commissioner -- Chairman, yes, I do. I have a very serious objection. These are very substantive changes to the rule, particularly the question of the stitching of the lining was something that was -- we do not have witnesses specifically, that was -- I'm sorry, I'll start over.

The stitching question was something that I believe was an issue that was discussed at the task force, and it was agreed upon that the agency was going to allow for the double-stitching, provided that there was adequate foldover. And that was something that was discussed.

If there was -- if the Commission had decided that they were going to require the welding, they knew about this, they -- Mr. Brooks just said, even last weekend before we started this. If they didn't have the computer facilities to do so, we are in a State building right now, they could have done it here. You know, there were many ways that they could have informed the Commission that these substantive changes were going to occur, such that we could have cross-examined, for example, Mr. Wayne van Gonten [*sic*] or Mr. Price, who is now off the stand, adequately on this issue.

I'm also very concerned that this would be -- the changes here seem to -- it would appear that drying pads are no longer available or an option in the closed-loop

system, based on the change in F.(1).(e). And based on this representation that was given to me by counsel, I don't -- you know, I haven't had the time to actually see where this fits into the rule. But my general reaction to this is, the removal of drying pads as an option in the closed loop systems is also a very substantive issue for us as an option, particularly as we represent small operators.

So I would -- you know, I would ask for some time to find out where these changes fit in. I would also ask, you know, that the Commission remind the Division that they do have a responsibility when they know that these changes are going to occur to notify the Division, and therefore parties, as soon as they can, rather than having -- and I understand and I respect the fact that they did have technical snafus, but Mr. Brooks's mouth was not removed from him on Monday, so he could have told us on Monday.

CHAIRMAN FESMIRE: Okay. Mr. Brooks?

MR. BROOKS: Mr. Chairman, we'd point out that the rule -- First of all, I would point out that this issue has come up in every rulemaking proceeding I've been a party to. There are always changes that need to be made during the proceeding. In this instance -- Well, in this instance the changes are fairly minor in extent.

The rules of the Commission do allow the applicant to make changes. The applicant is specifically

excepted from the requirement that proposed changes must be filed in advance of the hearing.

On one particular matter, Ms. Foster's understanding is incorrect. That is, the change to 17.13.F.(1).(e). The purpose of that change is to eliminate from the rule the requirement that in closing a closed loop system that there be delineation done underneath the drying pad, which is actually, I would assume, a change that the industry would welcome.

But so far as the seaming is concerned, our expert witness on liner seaming is Mr. Chavez who has not yet testified and probably will not until next week, is the way things are looking -- or may not until next week, the way things are looking now.

So we would again submit these changes for your consideration, and the Commission, which can accept or reject them.

CHAIRMAN FESMIRE: Right, and these are changes in your proposal, and the Commission allowing you to make this change is facilitated by the rules, is it not?

MR. BROOKS: Yes, the rule is there. You know, I'm having trouble finding it quickly, especially since I forgot my glasses this morning, and rules are printed in very small type. But -- I probably can find it in a few minutes, but this has been an issue -- this was an issue in

the Marbob vs. OCC case that was appealed on notice issues to the District Court of Santa Fe County and was affirmed on all issues by the District Judge of Santa Fe County.

CHAIRMAN FESMIRE: Okay. And this is a change in your proposal, it's not -- by accepting this change, it's simply a change in the proposal. The Commission is not voting at this point?

MR. BROOKS: No, the Commission can accept or reject the specific provisions, just like it can anything the Division proposes.

CHAIRMAN FESMIRE: Mr. Hiser?

MR. HISER: Mr. Chairman, we agree with counsel for the Division that it is certainly the Division's right to make changes to their proposal as facilitated by Commission rules.

I guess that our one concern, which would be the same one that we expressed to the Commission at the surface waste management rule, is, it makes it difficult for us to prepare witnesses, particularly in advance of the proposal. And so we would simply ask that the Commission give us discretion or some latitude where our witnesses may not be able to identify all these new topics in there, that they be able to expand and testify, to address them appropriately.

CHAIRMAN FESMIRE: That's certainly fair.

MR. BROOKS: The Division has no objection.

CHAIRMAN FESMIRE: So we'll go ahead and accept these changes in the OCD proposal, given the provision that -- the industry committee, or Yates or who?

MR. HISER: This would be the industry committee.

CHAIRMAN FESMIRE: -- the industry committee has the right to expand their case-in-chief to include these issues.

MR. HISER: That means Yates too.

(Laughter)

CHAIRMAN FESMIRE: I hope the record reflects all those. And we'll proceed with that.

Mr. Brooks, you had another matter?

MR. BROOKS: Yes, the second matter concerns the notification that was sent to Mr. Kelly O'Donnell of the Economic Development Department on October the 22nd. My response to IPANM's motion to compel states that that is attached to that response as an exhibit.

The Commission clerk informed us yesterday that it was not attached, and so I stand corrected in my statement that it was attached. And I assume if it was not attached to the copy that was filed, it was probably not attached to the copies that were served.

I have this morning printed out a copy from the sent-items file in my e-mail, and wish to correct that

deficiency at this time.

CHAIRMAN FESMIRE: Okay. Ms. Foster, do you have anything to add to that?

MS. FOSTER: No, I don't. Thank you, Mr. Chairman.

CHAIRMAN FESMIRE: Mr. Hiser?

MR. HISER: (Shakes head)

CHAIRMAN FESMIRE: Mr. Carr?

MR. CARR: No.

CHAIRMAN FESMIRE: Mr. Frederick, would you have anything?

MR. FREDERICK: (Shakes head)

CHAIRMAN FESMIRE: Mr. Huffaker?

MR. HUFFAKER: No, Mr. Chairman.

CHAIRMAN FESMIRE: Okay.

MR. BROOKS: Sorry, I should have requested permission to approach, so I'll do so now even though I'm already here.

CHAIRMAN FESMIRE: It's easier to ask forgiveness than permission, eh?

MR. BROOKS: I'll give it to the clerk first, because that's intended to cure the defect in the file in this --

CHAIRMAN FESMIRE: But this was sent to Mr. O'Donnell on the 22nd; is that correct?

MR. BROOKS: Yes, it was.

MS. FOSTER: Just for clarification, Kelly O'Donnell is actually female, just for --

CHAIRMAN FESMIRE: Oh, Ms. O'Donnell?

MS. FOSTER: Yes.

MR. BROOKS: That's the trouble with --

(Laughter)

CHAIRMAN FESMIRE: You're talking to a guy who employs a female attorney named Mikal, we understand that issue.

MR. BROOKS: And a male attorney named Sonny.

(Laughter)

CHAIRMAN FESMIRE: Okay. Mr. Brooks, are you ready to present your witness for cross-examination?

MR. BROOKS: We are ready to present -- I'm sorry, sir?

CHAIRMAN FESMIRE: Are you ready to present your witness for cross-examination?

MR. BROOKS: I am, sir.

CHAIRMAN FESMIRE: Okay.

Mr. von Gonten, would you take the stand, please? And I need to remind you on the record that you are under oath. Do you understand that?

MR. VON GONTEN: Yes, sir, I do understand that, Chairman Fesmire.

GLENN VON GONTEN,

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

CROSS-EXAMINATION

BY MS. FOSTER:

Q. Good morning, Mr. van Gonten.

A. Good morning.

Q. Yesterday you started talking about the task force that convened pertaining to this pit rule, and you stated that the members of the task force were actually selected by the Governor's office, correct?

A. That's my understanding, yes.

Q. And was IPANM part of that task force?

A. No, it was not.

Q. And was NMOGA a part of that task force?

A. No, it was not.

Q. NMOGA is the New Mexico Oil and Gas Association, just for clarity of the record, and IPANM is the Independent Petroleum Association of New Mexico.

In fact, how many people were part of that task force? How many people were on that task force?

A. Fourteen initially.

Q. And was any OCD staff on that task force?

A. Two members of OCD were on the task force.

Q. Two members?

A. Two members.
Q. And who were those members appointed?
A. Glenn von Gonten and Ed Hansen.
Q. And was there a facilitator for this task force?
A. Yes, there was.
Q. And who was that?
A. That was Deputy Secretary Reese Fullerton.
Q. And do you recall that there was a complaint concerning OCD staff participation on the task force?
A. There was a -- there was that issue raised, I think, very early on in the proceedings.
Q. Yes, at the very beginning, I believe it was, and that was raised by, I believe, Mr. Terry Riley?
A. I don't remember who raised the issue.
Q. And the complaint concerned -- the complaint about staff participation was because you were -- the staff, the OCD staff, was the one that was driving the agenda on this; is that correct?
A. I'm not sure what the complaint was due to, what the motivation was for it.
Q. As a staffer that was assigned to the task force, what was your job?
A. My job was to represent the OCD during the task force.
Q. And did you set the agendas?

A. Did we set the agendas? The agenda was set by the Secretary, and there was another letter that was sent out organizing it, by Chairman Fesmire.

Q. But the topics that were going to be discussed at the meeting, who -- at the different meetings that you had over the course of the summer, who set those topics?

A. Those topics came about as a result of the outreach meeting, and there were also some additional items that we attached to that list of topics to be discussed.

Q. And the list that came out of the outreach meeting, that was included in Secretary Prukop's letter sent to members of the task force prior to the first meeting; is that correct?

A. That's my understanding, yes, that's my recollection.

Q. And in fact, the list that was in Secretary Prukop's meeting was exactly identical to the list that you had posted as Exhibit 13, page 3; is that correct?

A. Let me refer to the -- Yes.

Q. So the list that you presented, where you stated that all these issues were actually discussed, were actually recommendations from the Secretary's office on issues to be agenda, correct?

A. No, that is not correct. As it states, it says "issues that may be addressed by the task force".

Q. And I believe you testified yesterday that not all those issues were actually -- were discussed in your presence, correct?

A. That's correct.

Q. So you don't know if all those lists -- all those things were discussed?

A. No, I don't.

Q. And Mr. Reese Fullerton, who does he work for?

A. He is the Deputy Secretary, and he reports directly to the Secretary of the Energy, Minerals and Natural Resources Department.

Q. And the OCD is a subset of the Energy, Minerals and Natural --

A. It is a Division --

Q. -- Resources Department?

A. -- of the Energy, Minerals and Natural Resources Department.

Q. And so Mr. Reese Fullerton works for the Energy and Minerals Department?

A. Energy, Minerals and Natural Resources Department.

Q. Yes. And when Mr. Reese Fullerton conducted this -- the task force meetings, did he disclose that he was an employee of the Energy and Minerals Department to the task force members?

A. I believe that was the introduction.

Q. Okay. Do you know if there was any sort of written document concerning the conflict?

A. What conflict is that?

Q. That he is an employee of the Division?

A. Rephrase the question, please.

Q. Okay. Are you aware as to what a facilitator's job is in a -- on a task force?

A. My understanding of what his job was, it was what he presented when he started the task force meetings.

Q. Okay, so he was not meant to be an unbiased party, though?

A. No, he always represented that he was unbiased.

Q. Okay, so was he a facilitator or was he there as a representative of the Energy, Minerals and Natural Resources Department?

A. He was there as a facilitator.

Q. So as a facilitator is supposed to be an unbiased person, correct?

A. I have had very little experience with meetings conducted by a facilitator, but yes, their obligation is to be neutral.

Q. Do you know if there was a written document between Mr. Reese Fullerton as the facilitator of the task force and the task force, concerning the fact that he was

an employee of the department?

A. I don't remember.

Q. You don't remember, or you don't know?

A. I don't remember whether there was or not, which is another way of saying I don't know.

Q. Thank you. During the -- You stated earlier that you were not at all the task force meetings; is that correct?

A. That is correct.

Q. How many did you miss?

A. I don't remember how many there were. As I didn't attend them, I'm not sure how many there were after I quit participating in the task force.

Q. Okay, it's very nice that you're trying to be coy with me, but I am absolutely aware of the fact that you --

MR. BROOKS: Mr. Chairman, I object to the witness's characterization. If the witness -- to counsel's characterization. If the witness doesn't know and doesn't remember, he's -- it's appropriate for him to say he doesn't remember. There should be no criticism of the witness.

CHAIRMAN FESMIRE: Sustained, Ms. Foster. Please treat the witnesses with respect.

Q. (By Ms. Foster) All right. So what you're saying is that you're not aware, or you were not -- the

meetings that were scheduled, you were not aware of the schedule of all the meetings, since you missed some?

A. There were some other meetings, it's my understanding, that there were being held, but I didn't participate and I don't know whether they were actually held in Porter Hall or if they were being conducted by e-mail or by teleconference.

Q. But the official meetings of the task force in which Mr. Reese Fullerton was the facilitator, were you present for all of those meetings?

A. No, I was not.

Q. Were you aware of all of those meetings where Mr. Reese [*sic*] was the facilitator and it was an official meeting of the task force?

A. He was there for all the meetings that I attended.

Q. And the 14 members of industry -- Sorry, withdrawn.

The 14 members that were on this task force, they were from industry as well as citizenship of the State of New Mexico and the ranching industry, et cetera, correct?

A. That's correct.

Q. And was not part of the reason that Secretary Prukop ordered this task force was to reach a consensus report?

A. That was the product of the task force, was to reach a report on consensus.

Q. All right. Was that not one of the goals as stated by Secretary Prukop at the beginning of the task force, to reach a consensus report?

A. Yes, it was.

Q. And in order to reach a consensus report, that would involve discussion amongst all the task force members, correct?

A. Yes.

Q. And under this process, the task force process, it would be okay for task force members to take a position on an issue and then revise that position on the issued, based on conversations that were held with other task force members, correct?

A. Yes, that was explicitly stated, that the people could get a tentative consensus and go back and discuss it with their office and other members and then come back. It was not a final consensus, it was called a working consensus on some issues.

Q. And was there not an agreement between the parties that for the final report to state that there was a consensus it had to be a unanimous opinion of the task force?

A. That was part of the ground rules for the task

force.

Q. And was there unanimous agreement on all the points pertaining to the pit rule?

A. I wasn't there when the final consensus report was generated. I don't know the answer to that question.

Q. Have you read the final consensus report?

A. Actually no.

Q. Okay. Was there any other documentation pertaining to the findings of the task force that you had read in terms of moving forward with creating the rule, or to use as a basis for creating the rule?

A. I'm not following your question.

Q. Okay. It is my understanding that the OCD was going to use the consensus report as a recommendation from the task force in promulgating this rule, correct?

A. That's right.

Q. And so -- and you're one of the main drafters, and you worked on this -- on creating this rule, correct?

A. No, I would not say I was a main participant. They were actually doing the drafting after the report was generated. I was not available to work on it.

Q. So you did not work on this rule from after the task force convened to when the rule was released on September 21st?

A. I did work on it, I was not a main participant in

that process. I did do some technical review of the various drafts.

Q. All right --

MR. BROOKS: Mr. Chairman, just for a point of information, the Division will have another witness, Mr. Jones, who will testify to the matters -- specifically to the matters of which Ms. Foster was inquiring.

MS. FOSTER: Okay, I'll move on, Mr. Chairman.

CHAIRMAN FESMIRE: Please.

Q. (By Ms. Foster) Okay, looking at Exhibit 13, can you pull that up, please? Page 6, please. Or slide 6, I should say. I believe I objected to this slide previously, and I'd like you to address the bottom line there, the statement: OCD's files are full of photos of pits that have been clearly compromised - general performance or narrative standards are not enough. I want to make sure that I understand what you're saying in that sentence.

When you're addressing the issue of pits in this sentence, what type of pits are you talking about there?

A. All types of pits, oilfield pits.

Q. But you understand that the industry committee and the task force consensus was that the issue of permanent pits and lining pits was not going to be an issue of contention in this hearing, correct?

A. Actually, I wasn't involved in that, so I can't

answer that question, so --

Q. You weren't --

A. -- I'll say I don't know.

Q. You weren't part of the task force meeting concerning discussion of pits?

A. Oh, yes, I was. But I wasn't involved with the report.

Q. So the hearing -- the meetings that you were at the task force didn't discuss any differentiation between permanent and temporary pits?

A. Yes, they did.

Q. Okay, then why don't you clarify the answer to your question to -- why don't you clarify your answer for previous --

A. Well, actually, restate the question so I understand where you're going with this, please.

Q. All right. You stated that you -- that this sentence and your photos pertain to all types of pits, correct?

A. That's correct.

Q. And you are not aware that the industry asked for a distinction, and in the rule there is a distinction between temporary and permanent pits?

A. We discussed the types of pits at length. That was the whole purpose of the task force. However, I was

not on task force when they were getting to the consensus language and writing the report, the recommendations to Mr. Sanchez.

Q. All right. Do you know if there was an attendance list that was taken at the task force meetings?

A. I believe that there was. But to clarify that, I don't know that every task force meeting started off with an attendance roll-call. I don't remember that.

Q. So it's possible that you didn't put your name on the list, and you might have walked in and out of -- and left meetings at the time?

A. It's possible that any person on the task force might have done that.

Q. Well, I'm asking about you specifically, Mr. van Gonten.

A. I don't remember whether I signed every sign-up sheet or not, and I don't really remember whether there was a sign-up sheet.

Q. All right, moving on to the rest of your sentence. When you say something has been clearly compromised, what do you mean by that?

A. Rips and tears --

Q. Rips and tears --

A. -- in the liner --

Q. -- beneath the water surface?

A. Excuse me?

Q. Beneath the water surface or above the water surface?

A. Rips and tears in the liner, and there would be a water mark above that, that indicated that at one point the fluid level was above that rip or tear.

Q. Okay, but when you say --

A. The liner was no longer suitable for actually holding fluids.

Q. When you say clearly compromised, meaning that -- that statement is just based on your observation that you saw some tears at some pits?

A. It's based on a review of the OCD's administrative record, which includes thousands of photographs which I went through and made a subset of them and reviewed them because they were clearly relevant to pits of one type or another, and also below-grade tanks.

Q. And what do you mean when you say general performance or narrative standards are not enough? That's kind of a squishy terminology, so please explain that to me.

A. That is what the current pit rule, 50, contains, general performance standards. It does not have technical standards.

Q. Okay. When you say general performance

standards, when the current Rule 50 sets down requirements, you're saying that was not specific enough for you?

A. That's correct, not specific enough for OCD, and that's why we're here today.

Q. All right, are you saying that the Commission made a mistake when it passed the rule in 2003?

A. It made its decision based on the evidence presented to it. I was not a participant at that time, so I don't know what evidence was put before the Commission at that time.

Q. And what do you mean by narrative standards?

A. It's another term for performance standards.

Q. And where is that term found?

A. Actually, I think it is used in the Water Quality Control Commission standards.

Q. Narrative standards?

A. I think it's referred to as narrative standards.

Q. Do you have any idea what it means?

A. It means the same thing as a general performance standard, Ms. Foster.

Q. So it just means that, you know, the rules are so generalized that basically anybody can come in and interpret whatever they want from it?

A. It means that it does not specify a technical standard.

Q. Now you stated yesterday that part of your concern with this rule was that you wanted to have permissive standards in the rule, correct?

A. Permissive?

Q. You didn't want to have ruling by guidance, you wanted to have more specificity in the rule, correct?

A. That was one of our goals, was to incorporate OCD's guidance into the rules --

Q. Okay.

A. -- at the request of industry.

Q. Now as a member of the OCD staff, doesn't the OCD currently enforce Rule 50?

A. Yes, it does.

Q. All right. Which has these general performance standards, right?

A. That's correct.

Q. And what you want -- I believe what you stated yesterday concerning the picture of the windflap, is that if you have an enforcer go out to a location and they see windflap, that is an automatic enforcement action, because that means to you automatically that there was a lack of anchoring in the trench, correct?

A. No, it doesn't mean that. I means that the OCD inspector will make that determination on a site-by-site basis.

Q. All right. So then if -- I want to make sure that what I wrote down yesterday is inaccurate, then.

CHAIRMAN FESMIRE: Is inaccurate?

MS. FOSTER: Is inaccurate, because what I wrote down is now what he's saying. So I want to make sure that he clarifies.

Q. (By Ms. Foster) The picture concerning the windflap, what was your intention for showing that picture, then?

A. That one shows -- we discussed this at some length, that that problem was due to a lack of inadequate [*sic*] anchor of the edge of the liner material. And because of that, during a high-wind event -- our interpretation is that a high-wind event caused that liner material to blow into the pit.

Q. All right, and do you know that for sure?

A. No, I wasn't there, but that's our assumption and that was a point of discussion many times before task force.

Q. All right, before the task force?

A. In task force.

Q. In the meetings that you were at?

A. Yes.

Q. And at the location that you took that picture with the windflap, did you actually check the anchors?

A. I was not at that site.

Q. So you weren't -- you weren't at the windflap site?

A. That particular --

Q. All right.

A. -- one, no.

Q. Okay, then I'll ask you the question pertaining to another one, which I'm sure will come up again.

Are you familiar with the Administrative Procedures Act of the State of New Mexico?

A. No, I'm not.

Q. Are you familiar -- You've been doing oil and gas enforcement actions for a while, correct?

A. I have been working for the OCD since January, 2005.

Q. Two and a half years.

A. Yes.

Q. And prior to that you were in Virginia, right?

A. No, prior to that I was in the Environment Department.

Q. And what was your role in the Environment Department?

A. I was a supervisor, and I was involved in RCRA permitting and RCRA corrective action --

Q. Are you --

A. -- primarily at Department of Defense facilities.

Q. All right. Are you familiar with the concept of knowing and willful violations?

A. No, that's a legal term that I'm not familiar with.

Q. All right. Are you familiar -- are you familiar with the concept that for one of your enforcement officers to give a fine to any operator, that they must prove -- or the Division must prove that the operator actually knew that that violation was out there?

A. No, I have not had that experience as of yet with the Division.

Q. You have not had that experience?

A. That's correct.

MR. BROOKS: Mr. Chairman, I would object that that inaccurately characterizes the knowing and wilful standard.

CHAIRMAN FESMIRE: Okay, I'll overrule the objection. He can answer if that's within his understanding.

MS. FOSTER: Okay, if Mr. van Gonten is not an appropriate officer, then I believe there are other OCD witnesses who are actually field representatives?

MR. BROOKS: That is correct.

MS. FOSTER: Okay, then I could ask this line of

questioning to them.

CHAIRMAN FESMIRE: Do you withdraw the question?

MS. FOSTER: Yes, I do.

Q. (By Ms. Foster) I believe that you stated yesterday that you have -- there is a concern within your Division at the OCD as to the number of inspection officers that the Division has for the thousands of locations that there are in New Mexico pertaining to oil and gas.

A. I believe that was Mr. Price's testimony, as far as the number of staff available to do that.

Q. All right. And would you agree with the statement that if there are no open pits on location, that this would actually make enforcement easier for the officers, if there's just closed loop systems on location?

A. What do you mean by open pits?

Q. A temporary pit, a drilling pit, a workover pit.

A. Okay, repeat your question again.

Q. Okay, if there are no drilling pits or workover pits on location and there is just a closed system, with the drying pad or not, that this -- that this would actually make the inspections job easier for your officers on location?

A. I can offer an opinion on that, which is --

Q. Yes.

A. -- and I would also point out that a closed loop

system is a drilling pit, it's a drilling tank, and it's for reserve --

Q. All right, the differentiation -- for purposes of this hearing, we have pits, we have temporary pits, which are drilling and workover pits, permanent pits, and we have -- they're differentiated from the closed loop system discussion that we're having --

A. I understand.

Q. -- is it not? Correct? Okay. All right.

Moving on to slide 8, you are using the word -- the term open dump under RCRA, correct?

A. This slide uses -- is about open dump, and it's a definition.

Q. All right. And what -- I was a little confused as to why you're pooling RCRA into this discussion. This is a -- We're in the State of New Mexico, correct?

A. Yes.

Q. And the OCC is the jurisdictional authority within the state only, correct?

A. Yes.

Q. And they have no federal jurisdiction whatsoever?

A. That's correct.

Q. All right. But RCRA is a federal statute?

A. That is correct.

Q. But the terminology that you used in your

testimony yesterday was that temporary pits and permanent pits are now what you would call an open dump, and that was one of the reasons why the slide was up there?

A. No, I didn't say that.

Q. Okay, so then clarify why the slide is up there then.

A. It points out that an open dump, which is defined by federal statute -- and by the way, that applies in the State of New Mexico as well -- is any -- Let me refer to this.

Okay, it says what it says. It says, Which is not a sanitary landfill which meets the criteria promulgated under Section 4004 and which is not a facility for disposal of hazardous waste.

Q. Okay.

A. The point where I was going with this, if I can continue --

Q. Sure.

A. -- is that an unlined pit is equivalent to an open dump. It meets the plain language definition of open dump.

Q. Okay, so now you're saying that an unlined pit is the equivalent of an open dump?

A. That's what it says.

Q. But is that your interpretation?

A. Yes.

Q. Is that your testimony?

A. Yes.

Q. All right. I believe you stated yesterday that deep-trench burial is nothing more than having an open pit as well?

A. I don't think --

Q. Did you make --

A. -- I ever said that.

Q. -- that statement yesterday?

A. I don't remember that at all.

Q. All right, deep-trench burial. Why don't you describe for me what you think deep-trench burial means?

A. Well, it wasn't part of my testimony, but I'd be happy to give you my understanding.

Q. Please do.

A. It is where a trench is constructed generally on-site or nearby a pit and is lined. There is a disposal, long-term disposal, permanent disposal, of the pit contents after they have been stabilized to a degree that is bearing capacity. They may also receive additional treatment at that time.

The pit contents, including the pit liner, which is usually compromised during this process, has been transferred from the original reserve pit or workover pit

or other temporary pit and placed into the deep trench.

Then a top liner is applied over that. There's options for the operator to seam that liner. Then it is covered with four feet of topfill, and the site is restored as far as vegetation.

Q. Okay. But if -- Under this rule, under the proposed rule, if an operator doesn't -- is either within 100 miles of a landfill or 50 feet to groundwater, or cannot get landowner approval, or cannot meet the siting requirements, or cannot meet the closure requirements, then the option for on-site burial is not there, and the operator has to use closed loop system, correct?

A. That's my understanding of the rule.

Q. All right. I believe that you highlighted -- I think it's slide 21 -- what you believe is the Commission's jurisdiction under the Oil and Gas Act, correct?

A. That is correct, this is some of the enumerations of power.

Q. Thank you. All right. And what is the Division's responsibility under the Oil and Gas Act?

A. It's fairly broad. These three enumerations, I guess we could call them, subsections, were the ones that have to do directly with our case before the Commission.

Q. But isn't, in general, the overarching responsibility of the OCD is protection of correlative

rights and prevention of waste?

A. Those are subsections with which I'm not personally responsible or that familiar with, Ms. Foster.

Q. Okay, so are you saying that in your job that you don't have to worry about protection of correlative rights or waste?

A. Those terms have to do with another bureau in there. And the term waste in that context actually has to do with waste of resources.

Q. And are you familiar with what correlative rights are?

A. Not in the legal sense, no.

Q. Well, then let me -- why don't you tell me in layman's terms what you believe the OCD is responsible for, then?

A. I can tell you what the Environmental Bureau is, which is part of my job description, Ms. Foster, if that would be adequate.

Q. No, you work for the OCD, so tell me what you think the OCD is responsible for.

CHAIRMAN FESMIRE: Let me guess, argumentative?

MR. BROOKS: Argumentative and beyond the scope of this witness's -- is asking the witness to testify to something he's already said he doesn't know about.

CHAIRMAN FESMIRE: Okay --

MR. FREDERICK: I'll second that.

CHAIRMAN FESMIRE: Mr. Frederick.

I'll sustain the argumentative portion of the objection.

Q. (By Ms. Foster) Okay. So just so I understand, you don't understand what correlative rights are, and you don't believe that --

CHAIRMAN FESMIRE: Mr. Frederick?

MR. FREDERICK: I'm just going to object to that. That's beyond the scope of his direct testimony, he doesn't have to understand what correlative rights are to his testimony.

CHAIRMAN FESMIRE: I'll overrule that --

MR. BROOKS: The Division would join in that objection.

CHAIRMAN FESMIRE: I'll overrule the joining.

Go ahead, Ms. Foster, ask the question.

Q. (By Ms. Foster) Okay. So just to make clear, you don't understand what correlative rights are in your job description?

A. That's correct.

Q. Do you understand what nondomestic waste is?

A. Yes.

Q. And what would you define as nondomestic waste?

A. Those are the wastes that result from the

exploration, development, production and storage of crude oil or natural gas to protect human health and the environment.

Q. And is nondomestic waste part of the Oil and Gas Act?

A. Yes.

Q. Is it defined in the Oil and Gas Act?

A. I don't know if it's defined in the Oil and Gas Act.

Q. Would it surprise you to know that it's defined in the Solid Waste Act?

A. It wouldn't surprise me, but I wasn't aware of that.

Q. And would it surprise you to know that drilling fluids -- Let me see, I'm sorry, this is printed on top of something else, so let me read this here.

Well, let me read you the definition of nondomestic waste under the Solid Waste Act, then.

MR. BROOKS: Mr. Chairman, we would object to bringing that in in this context, because solid waste -- the definitions in the Solid Waste Act, in our legal view, do not control the usage of that term in the Oil and Gas Act, and if it's being introduced for the purpose of suggesting otherwise, we believe that to be a legal issue that's outside of the competence of this witness to testify

to.

CHAIRMAN FESMIRE: Ms. Foster?

MS. FOSTER: Well, I'm just trying to clarify that the definition of nondomestic waste which this witness is relying upon as their authority does not include drilling fluids, produced and waste petroleum products, petroleum sludges or -- unless declared under an emergency by the Director of the OCD. That is what I'm trying to get out under this Act.

MR. BROOKS: Mr. Chairman, this witness did not testify he's relying on that definition. In fact, this witness was not even aware of its existence.

MS. FOSTER: Well, then I would ask why it was in this witness's presentation if he is not personally aware of these issues.

CHAIRMAN FESMIRE: How was it in his presentation?

MS. FOSTER: This is part of -- one of Mr. van Gonten's exhibits.

CHAIRMAN FESMIRE: Yes, but isn't this straight out of the statute?

MS. FOSTER: Well, I'm just asking him if he has an understanding of the statute, if he is testifying to this and it was part of his presentation.

CHAIRMAN FESMIRE: Mr. Brooks?

MR. BROOKS: I'd reiterate what I said previously.

CHAIRMAN FESMIRE: I'll go ahead and overrule the objection. Why don't you go ahead and answer the question, Mr. von Gonten?

THE WITNESS: Could you repeat the question, please?

Q. (By Ms. Foster) Are you aware that under the definition in the Solid Waste Act, that nondomestic waste does not include drilling fluids, produced waste, petroleum products, petroleum sludges unless declared under an emergency by the Director of the Oil and Gas Con- -- Oil Conservation Division?

A. I was not aware of that.

Q. And I believe on page 24 through 26 of that same exhibit you referred to the STRONGER report, correct?

A. Yes.

Q. And the STRONGER report is a New Mexico-based agency?

A. No.

Q. What is it?

A. It is the State Review of Oil and Natural Gas Environmental Regulations.

Q. All right. And the suggestions that are made in the STRONGER report, are they mandates or suggestions?

What are they?

A. I think that they're suggestions.

Q. Are you familiar with Governor's Executive Order 2005.0069?

A. No.

Q. Are you familiar with Governor's Climate Change Mandates for the State of New Mexico?

A. No, I'm not.

Q. You are not aware of them at all, even as a layperson?

A. No, I have not dealt with them and I have not read them.

Q. Okay. Have you --

A. If I may continue, I may have heard that phrase used, but I'm not familiar with it.

Q. Okay, but are you -- So you're not aware of the Governor's executive order mandating climate-change issues in the State of New Mexico?

CHAIRMAN FESMIRE: Ms. Foster, is that within the scope of the direct examination?

MS. FOSTER: I believe it is in terms of what he believes the OCD's jurisdiction is.

CHAIRMAN FESMIRE: Mr. Brooks?

MR. BROOKS: I would disagree, I don't think we went into that issue at all on direct.

CHAIRMAN FESMIRE: Well, if Mr. Brooks were to make an objection on that point, I would sustain it.

MR. BROOKS: Okay, well --

(Laughter)

MR. BROOKS: -- that was my intention, Mr. Chairman.

MS. FOSTER: Well -- If I may continue?

CHAIRMAN FESMIRE: You may.

Q. (By Ms. Foster) All right. The Environmental Justice executive order is one that you should be familiar with. Are you familiar with it?

A. I have heard of it, and I believe I read it maybe a year or so ago.

Q. Okay. Well, when the Governor issues an executive order as an executive agency, are you required to follow that executive order?

A. The Division is.

Q. But you as an employee of the Division, in promulgating rules, are you required to follow the executive order?

A. I don't promulgate rules, Ms. Foster.

Q. In your technical review of the rules and your participation in creating of the rules, are you required to follow the mandates from the Governor's office?

A. I think the Division is. My personal

responsibilities are to be answerable to the Environmental Bureau Chief.

Q. And are you familiar with Legislative mandates in the state?

A. No, I'm not.

Q. If the Legislature were to issue a mandate to the OCD, are you as an OCD employee required to follow that mandate?

MR. BROOKS: Mr. Chairman, I'm not sure what -- The Legislature passes bills and they pass resolutions, et cetera. I'm not sure what Ms. Foster is referring to as a Legislative mandate.

MS. FOSTER: If Mr. Brooks --

CHAIRMAN FESMIRE: Hang on just a sec. Mr. Frederick?

MR. FREDERICK: You know, I don't know what a Legislative mandate is --

CHAIRMAN FESMIRE: Would you clarify your --

MR. FREDERICK: -- and I doubt the witness knows.

MS. FOSTER: Okay.

CHAIRMAN FESMIRE: Ms. Foster, would you clarify your question, please?

Q. (By Ms. Foster) Okay, a statute, a statute that has been signed by the Governor and passed by both houses in the Legislature -- all right? -- passed, creating a law

in the State of New Mexico that would affect operations with the OCD. As an OCD employee, are you required to follow that statute or law?

CHAIRMAN FESMIRE: Mr. Frederick?

MR. FREDERICK: I'm going to object to that, I think that's argumentative. He's already testified that he has to follow the law.

CHAIRMAN FESMIRE: I'll sustain the objection, Ms. Foster, thank you.

MS. FOSTER: All right.

Q. (By Ms. Foster) Looking at Exhibit 13C, I think it is, the northwest slide? I'm sorry, it's 13B. Yes, northwest, please. Okay, this exhibit -- is it 13B, for clarification?

CHAIRMAN FESMIRE: 13C, I believe.

MS. FOSTER: 13C. Mr. Hansen, is it listed as 13B or 13C for you?

MR. HANSEN: 13B.

MS. FOSTER: 13B.

Q. (By Ms. Foster) These photos that were taken for Exhibit 13B, were these the photos that were taken when you went out to sample pits?

A. Yes, it is.

Q. And when you went out to sample, what types of pits were you required to sample?

A. Our sampling analysis plan and our sampling program said that we would go out, look for targets of opportunity, but that we would sample from drilling pits, tanks and from unlined pits.

Q. Okay. And in your documentation did you keep a list and separate for sampling purposes what samples came from your temporary pits and which samples came from your permanent pits?

A. Yes, we did.

Q. And later on in your quantification charts that you do, I believe that you pick out your maximum values for each constituent that was found in the pit, correct?

A. Broken out by media, in other words, fluids or solids, and northwest and southeast, that is correct.

Q. And was it further broken out by which type of pit it was in?

A. No.

Q. Okay. Slide Number 2. Well, actually slide number 2, in light of the changes that were just made by the Division, I will skip.

Slide number 6. Now I believe you testified that this is a demonstration of what you believe is a torn liner, correct?

A. Yes.

Q. And where is the pit in relation to where that

torn liner is?

A. To the left of the photograph.

Q. To the left of the photograph. So this tear is actually quite a bit away from the pit, correct?

A. This part of the tear is on the -- above the side slope of the pit.

Q. Is above the side slope of the pit?

A. That's correct.

Q. And it's away from the pit?

A. That's correct.

Q. And any water that might accumulate on this tear, is that going to end up in your pit?

A. It may flow underneath the liner and compromise the side slopes, yes.

Q. And are you aware that this tear was made when the drilling pit was removed and the rig actually moved from the location?

A. No, I was not aware of that.

Q. All right. Now are you aware that industry is actually adding an extra 15 feet of liner to the edge -- from the edge of the pit?

MR. FREDERICK: I guess I'm going to object to the testimony that's being provided here.

CHAIRMAN FESMIRE: Sustained. Ms. Foster, you haven't laid a -- there's not been any indication that what

you're stating is true. Are you going to state it as a hypothetical?

MS. FOSTER: Yes, I'm asking him as a hypothetical.

CHAIRMAN FESMIRE: Okay, proceed then.

THE WITNESS: What is your question, please?

Q. (By Ms. Foster) Are you aware --

CHAIRMAN FESMIRE: No. What if.

Q. (By Ms. Foster) Okay. What if industry were to add 15 feet of liner from the edge of the pit to the fencing, as seems to be demonstrated by this picture?

A. My observation or response would be, it's not an adequate anchor trench, and there is no berm to control run-on or runoff, so the additional hypothetical 15 feet added would probably still not meet our technical performance standards.

Q. Your technical performance standards under which rule? Your existing --

A. The proposed rule.

Q. -- Rule 15? The proposed rule.

Picture number 7. I believe you stated that this photo will -- because the fence is through the liner, that this will create a contaminant situation, contamination situation?

A. I'm sure that I never used that phrase.

Q. You've never used that phrase?

A. I didn't use that phrase yesterday during my testimony.

Q. Would you like me to ask the court reporter to give us the testimony from yesterday?

A. If you so desire.

Q. I believe that I have in my notes and several other locations as well, but now you're saying that -- Tell me why this picture is in this --

A. The point I put that picture in there, Ms. Foster, is to show that what we commonly encountered was that there were -- This doesn't appear to be a fencepost stake, you don't see the fence material on it, but this is an example of where the integrity of the liner has been compromised by being punctured, and this could also be a point at which a rip or tear could be initiated.

Q. Okay. Is that liner punctured?

A. You can't tell from exactly this photograph, but I believe it was.

Q. Okay, so you can't tell from this photograph, but you're making an allegation that it was punctured?

A. That is my observation, I believe it was punctured.

Q. And do you know which side of the pit this was -- this fencepost was on, or this post was on?

A. I would have to look at the other photographs that went with that to answer that question in detail. I don't have photographic knowledge of it.

Q. Okay, so you don't recall this location?

A. I was at this location, but this particular photograph, as I said, I don't remember the details surrounding it. It shows what it shows.

Q. Okay. Hypothetically, could this stake be on the high side of the well, potentially -- pit?

A. Yes.

Q. Sorry, the high side of the pit --

A. Yes.

Q. -- possibly? And if it's on the high side of the pit, is that going to impact your fluids in the pit?

A. If it initiates a tear that leads into the pit, it could --

Q. If it --

A. -- hypothetically.

Q. Hypothetically, speculatively?

A. Speculating on your speculative question, yes.

(Laughter)

Q. Okay. Could we look at slide 14, please? Actually, could we go back to slide 13, please?

This is -- I understand this is not you, but this is Mr. Ed Hansen, correct?

A. That is Mr. Hansen.

Q. In this photo. And what is he wearing there?

A. It's called a Typek suit.

Q. And what is the purpose for wearing a Typek suit?

A. So that you don't get your clothes dirty.

Q. So the purpose of the Typek suit is only to protect your clothing, correct?

A. That's right.

Q. Slide number 14, please? I believe that you stated that this photo was a demonstration of woven material that was frayed at the edges, correct?

A. That's correct.

Q. All right. And do you know how far away from the pit that tear is?

A. I think you can see the pit contents at the top of that photograph, so I think that's just on the edge of the top -- the top of the side slope.

Q. Okay. And is that on the down side of a berm?

A. There was no berm, as I remember, at this site. It was just flat. There was no two- or three-foot-tall berm around the edge.

Q. Okay, so that doesn't, to you, look like the top of a berm, and the rip is on the other side?

A. I don't think there was a berm there, Ms. Foster.

Q. Okay, you don't -- Okay, thank you.

But this was not within the pit, that tear?

A. This is on the top slope, not the side slope. This photographs documents it being on the top slope, it doesn't document that it goes into the side slope.

Q. Can we move on to Exhibit 15, please? No, actually -- I'm sorry, before you move on, 19, please. I might have the wrong one. I have the wrong one. Why don't we move on to Exhibit 15, please? Page 11.

CHAIRMAN FESMIRE: 15, page 11?

MS. FOSTER: Yes, please, Exhibit 15, page 11, or slide 11.

Q. (By Ms. Foster) All right, I just want to make sure that what I thought I saw in this picture is actually not there. That is not a person's head sticking out through that hole, is it?

(Laughter)

A. I wasn't at this site

CHAIRMAN FESMIRE: At this point, Mr. von Gonten, I feel compelled to warn you about your Fifth Amendment rights.

(Laughter)

THE WITNESS: I was never at this pit, Ms. Foster, but it appears to be a rock protruding through the liner material on the sidewall.

Q. (By Ms. Foster) Okay, so that beige thing is

actually not a person's head, but it's a rock?

A. It's a rock.

Q. Okay. And what type of liner is this, if you know?

A. I don't know what type of liner that is.

Q. Okay, based on your expert opinion, could you guess what type of pit this is?

A. I wouldn't have to guess, but if I was testifying I would go to Exhibit 17 and look this slide up to see what pit it was.

Q. Okay, so you're uncomfortable testifying about what this --

A. This isn't labeled, and I was not at this site.

Q. Okay.

A. But it is in our Exhibit 17, if we wanted to go through the exercise of determining where it was. There was only one production pit sampled in the southeast, so I'm -- and one closed loop system in the southeast, so I assume that this is a reserve pit, a drilling pit.

Q. Drilling pit, all right. And can you see the waterline on that white liner in the photograph demonstrated?

A. There seems to me to be several waterlines.

Q. All right. And would it be fair to say that there's water that has been evaporated from that location?

A. I'm sure evaporation has occurred from this pit.

Q. And the hole with the rock in it is actually above the waterline, currently, in the picture?

A. I see a -- Well, at the current waterline, that's correct. There are other waterlines which are above the hole in the side liner.

Q. Now under the current process for closing a reserve pit, if a -- the operators need to evaporate the water out of the pit, correct?

A. Yes.

Q. In other words, once the drilling rig leaves and they're not using this as a drilling pit, they cannot add additional fluids to it, correct?

A. There's no reason for them to. Illegal dumping does occur into operators' pits, that was discussed at task force. But there's no reason that I can imagine, but I don't know that it would be prohibited, but it may be.

Q. Now if in fact this is a drilling pit and it is evaporating down, does the operator have the responsibility to fix that hole, that tear in the liner?

A. I don't know the answer to that question.

Q. Who should I ask that question to, then?

A. You could ask one of the District inspectors.

Q. Inspectors, okay. In the sampling exhibit, which I would ask the Commission -- or I would ask the Commission

for an electronic version of that exhibit. Yesterday I received a paper copy of that, and it's very, very hard to manage. So I would ask that if the Division has an electronic copy of the new Exhibit 16, the one that Mr. van Gonten found the mistakes in and had to fix, that that could be provided to us so that we could compare those.

CHAIRMAN FESMIRE: Mr. Brooks, would you be able to do that by tomorrow morning?

MR. BROOKS: Mr. Chairman, I would have to confer with Mr. von Gonten.

CHAIRMAN FESMIRE: At the break would you confer, and please inform Ms. Foster if you can or can't?

MR. BROOKS: Mr. Chairman, I will do so.

CHAIRMAN FESMIRE: Thanks.

MS. FOSTER: Thank you.

Q. (By Ms. Foster) How much was the cost of sampling for your program?

A. Around $30,000. I don't remember the exact number.

Q. $30,000?

A. Thirty thousand dollars.

Q. All right, and that thirty thousand dollars, did that pay for all testing relevant -- Withdrawn. Withdraw that question.

I believe you testified yesterday that the

industry committee sampling versus your sampling used a different method of sampling, correct?

A. There were some differences between them. I think that I pointed out that generally for the total fractions that industry used, what would be considered to be equivalent methods if not the same method, analytical methods.

Q. Okay. And the TCLP, is that commonly known as the T-clip?

A. It is.

Q. And was that the test that was used by you or by industry?

A. Industry.

Q. And are you aware that T-clip is now being used at CRI for disposal under the surface waste management rule?

A. No, I'm not.

Q. And I believe that you stated yesterday that the science experiment that you did could have been more comprehensive, had you had more time and probably funding?

A. That's true.

Q. Now did you run the solids resolubility test?

A. No, we did not.

Q. And are you familiar with that test?

A. I am not.

Q. Isn't that the test that will determine whether concentration of chlorides will redissolve and therefore be mobile?

A. I'm not familiar with that test.

Q. Now when an operator needs to close a location, a drilling pit, to get to the steps, ultimately, to re-vegetate, under the current Rule 50 liquids must be removed from the pit, correct?

A. I did not have that understanding. I think they're allowed a period of time to allow evaporation to occur. I don't know that Pit Rule 50 says that they have to remove it or whether they're allowed not to remove it. My understanding was that they were allowed a certain period of time after the rig is released to -- for evaporation to occur.

Q. Okay. Have you -- Have you ever seen a closure operation occur on location?

A. I've seen various stages, but I have not been present from start to finish of a closure program.

Q. You have not been present?

A. That is correct.

Q. Okay. Are you aware of the stabilization process that operators have to go through to close a pit?

A. I am aware of solidification and stabilization, but I'm not sure that operators are required to do that,

other than to a bearing capacity.

Q. Other than to a bearing capacity?

A. Yes, there are other -- that term is also used for -- and I always get it a little confused in my mind whether it's stabilization or solidification, but I believe solidification is where an operator would add something like fly ash or cement kiln dust or cement to actually solidify the pit contents.

Q. Okay. But the contents are solidified, a cover is put on it, and then it's re-vegetated for closure, currently?

A. That's correct.

Q. All right. And why is it that when you were doing your sampling program, that you went into liquefied pits if in fact the closure standards are completely different?

A. We conducted this pit sampling program to answer the questions that we heard during the outreach, which is, What is in that pit?

Q. Okay, what is in the pit during the operations phase, not during the closure phase?

A. That's correct.

Q. So you can't -- you can't testify to what -- or how the constituents in these pits change for closure?

A. That was not the goal of our pit sampling

program, and the data that we collected would not answer that question.

Q. Now I believe yesterday that you stated also that you believe that the new Rule 50 -- or the new -- 17, right, would actually be less complex for operators to work under; is that your understanding?

A. I don't think that would be fair. I think that it would be -- that there are more technical standards specified in the proposed pit rule.

Q. More technical standards meaning the requirements for closure?

A. I was thinking more along the lines of preparation operations, installation operations, maintenance, and yes, the closure would also be more comprehensive.

Q. Okay. And are there not different standards for closure, depending on whether you're going to have a temporary pit or permanent pit or a below-grade tank or a closed loop system?

A. I was not that intimately involved with the drafting of this pit rule, and I would defer that question to Mr. Jones.

Q. Okay. Now there was a picture that you showed, I believe, in a couple of exhibits pertaining to -- it had a ranch house in it and a pickup truck next to it. I believe

that was -- Was it the Westgate case?

A. Yes.

Q. Are you aware that right next to the ranch house there's actually a freshwater well next to the house?

A. No, I was not aware of that.

MR. BROOKS: Mr. Chairman, this was, I believe, a part of the southeast investigation, which this witness was not a part -- did not participate in.

MS. FOSTER: It's still part of an exhibit that came in through Mr. van Gonten, so --

MR. BROOKS: Well, I believe that Exhibit 13B has not yet been tendered -- or 13C has not yet been tendered. Mr. van Gonten did show those exhibits and he made an analysis based on pits included in the southeast, but we specifically deferred tendering those photographs until we could have a witness who could authenticate them.

CHAIRMAN FESMIRE: Okay. Mr. von Gonten, the pictures she's talking about in the southeast that don't involve the pits, the ranch house, et cetera, are you familiar enough with those to testify, what they are?

THE WITNESS: My understanding of it is that this was a site at which the pit had been closed and they had razed the house, and the contamination was so great that they actually had to put a containment structure over it during the operations for control of dust.

CHAIRMAN FESMIRE: Ms. Foster, are those the photos that you're referring to?

MS. FOSTER: Yes, thank you.

CHAIRMAN FESMIRE: Okay.

MS. FOSTER: Yes. So --

THE WITNESS: I don't -- I'm not -- Excuse me. I don't think those were actually in either 13B or 13C. I think they were in another exhibit.

MS. FOSTER: I think they might have been in Exhibit 17. That's where I've got them in my notes, but I could be wrong.

MR. BROOKS: Not 17, 17 is the compendium.

MS. FOSTER: Okay, I'm sorry, then, I apologize. I will ask Mr. -- Is it Mr. Jones who testified -- who's -- the southeast?

THE WITNESS: Excuse me --

MR. BROOKS: Yes, Mr. Jones did participate in the southeast.

THE WITNESS: -- I believe you're referring to Exhibit 18, slides 12 and 13.

MR. BROOKS: Now that is a different -- Okay. Okay, that was not the picture I was thinking about, so you may proceed to ask him --

CHAIRMAN FESMIRE: And that's the picture you were thinking about?

MS. FOSTER: Yes, I was referring to -- specifically thinking of the house with the silver structure there, I guess.

MR. BROOKS: Okay.

CHAIRMAN FESMIRE: Why don't you ask your questions pertaining to these pictures with reference to these pictures, because there was some confusion.

Q. (By Ms. Foster) All right. Is Exhibit 18 -- when he'll pull it up -- is that what you understand to be the Westgate case?

A. Yes.

Q. And again, are you aware that there is a freshwater well behind that house?

A. No, I was not aware of that.

Q. And are you aware that that freshwater well is 50 feet from what you call the contamination site?

A. I was not aware of that.

CHAIRMAN FESMIRE: Mr. Foster, again, are you asking hypothetical questions, or are you going to present evidence that there is?

MS. FOSTER: No, I'm just asking him if he is aware of that since he is representing -- this is part of his exhibit, and he should be aware of --

CHAIRMAN FESMIRE: Okay, then I would suggest that you ask the question, Do you know that there is a well

out there? Not, Are you aware of one? Because that infers that there's testimony in the record that there is a well back there. Or you can use a hypothetical.

Q. (By Ms. Foster) Okay, do you know -- Thank you, Mr. Chairman. Do you know that there is a well back there?

A. No, I'm not aware of whether there's a well behind that structure or not.

Q. And you testified that the silver structure that ultimately got put on this location on page 13 was to control dust?

A. That was one of its functions.

Q. When they were doing remediation, I guess they decided that that was appropriate. There's another photograph that shows a large earthmoving equipment inside there.

Q. So when you say they were doing remediation, was that -- this was not an OCD remediation project?

A. I don't know that, I don't know the answer to that question.

Q. Okay. Could you please describe a lined temporary reserve pit so we can understand its dimensions and size?

A. A lined temporary reserve pit would be of a size selected by the operator. I saw some very small ones in the northwest that were perhaps 15 feet across and maybe 50

feet in length. I understand that they get as large as greater than 150 by 150. They would usually be a depth that was several feet to -- as one that I saw in the northwest looked to be more than a dozen feet in depth. They're lined -- As they are currently, right now, without the performance standards, they can be lined in a number of different ways, using a number of plastic liners.

Q. Okay. Now the depth that you say -- you gave actually a range in depth, and you also gave a range in size when you just testified; is that correct?

A. Yes.

Q. All right.

A. My personal, recent experience.

Q. Okay. Would it be fair to say that based on your personal experience of observation of pits, that they're not always exactly the same size, and they're not always exactly the same depth?

A. That is true.

Q. And when -- in APD document -- and I don't know if you -- You do process APDs?

A. I do not.

Q. You do not. Okay. Who would be the person processing APDs?

A. I think the District Supervisor actually has to approve those, and the District inspectors would possibly

be more familiar with them than I am.

Q. All right. Have you looked at any APD applications?

A. Yes.

Q. And on APD application does an operator generally have to give you a schematic of where they intend to have their pits?

A. I have seen several of those that did have that information included.

Q. Is that not required?

A. I don't know whether they're required.

Q. Since pits are different sizes and different depths, does that also change the amount of waste that will come out of a pit?

A. I think the answer to that is, that just depends on how much excess capacity the operator wanted to build into their program. The waste is somewhat different, although, yes, the liner itself at closure is part of the oilfield waste. So yes, a larger pit would have more waste, even if they only drilled to a hundred feet and quit the well, if they have installed a large pit.

Q. Okay. Is depth to -- the depth of the well, is that also a factor in the amount of generated waste?

A. The depth and the hole diameter, yes.

Q. And does your staff, do you know, or could pick

an average amount of waste that would come off of a location in the southeast versus the northwest?

A. A number that we use, and it's not based on any survey or any data that we compile, but generally we tend to use the term of a thousands yards --

Q. Thousand --

A. -- cubic -- a thousand cubic yards of waste that has to be disposed of.

Q. Okay.

A. That would be a commonly used number, and I'm sure that's -- it could be much less than that and much greater than that.

Q. So it's in a range?

A. It's in a range. But maybe that's a reasonable average.

Q. I apologize if I'm going slowly on this one. I printed this out, printed on the back of a page that was already printed, so I'm reading through double print to try and get to the questions here.

CHAIRMAN FESMIRE: Well, Ms. Foster, would this e a good place to take a break --

MS. FOSTER: Yes.

CHAIRMAN FESMIRE: -- and reconvene in about 10 minutes?

MS. FOSTER: Yes. Actually, yes, it would.

CHAIRMAN FESMIRE: At this point why don't we take that break, reconvene at 20 till 11:00.

(Thereupon, a recess was taken at 10:30 a.m.)

(The following proceedings had at 10:48 a.m.)

CHAIRMAN FESMIRE: Okay, let's go back on the record. Let the record reflect that after the morning break we've reconvened at 10:48, that all three Commissioners are still present, there's still a quorum present. We were in the middle of the cross-examination of Mr. von Gonten by Ms. Foster.

Ms. Foster, are you prepared to continue with your cross-examination?

MS. FOSTER: Thank you, and I apologize to the Commission, I was trying to print out the questions so I could actually read them and move through this a little bit more quickly, and I was having printing difficulties.

CHAIRMAN FESMIRE: Heaven knows we understand computer difficulties.

MS. FOSTER: Yes. Okay, I'll try and get through these questions.

Q. (By Ms. Foster) Okay, Mr. van Gonten, I believe that you did testify that there is a difference in size for temporary reserve pits in the northwest versus the southeast, based on your personal observation, correct?

A. That is correct.

Q. And again, there was -- in your sampling program, your final results did not distinguish between permanent and temporary reserve pits in terms of the constituent levels in those pits, correct?

A. That's correct.

Q. And I believe in your analysis you used the maximum number or level that was found in the -- in each location, northeast, southwest?

A. I used the maximum concentration of each constituent, subdivided by matrix and location.

Q. All right, but you used that number to compare to the NMED standards, the RCRA standards, and was there a third standard that you compared it to?

A. There were several other standards, yes. There was the Environment Department soil screening levels for ingestion and inhalation, there was the protection of groundwater concentration, there was the T-clip value, and the WQCC 3103 groundwater standards.

Q. WQCC, okay. And are you familiar with the cavitation process?

A. No, not really. No.

Q. Have you -- in your professional experience, have you worked with the additive bentonite clay for drilling fluids?

A. Yes.

Q. And are you aware that this is a primary constituent of drilling mud?

A. It is in certain areas.

Q. And are you aware that the bentonite is used in the process of drilling water wells -- or -- I'm sorry, withdraw the question. Do you know that bentonite is used to drill water wells?

A. I'm not very familiar with domestic water well installation. I have to pass on that question.

Q. Pass to someone else on that question?

A. I don't know the answer to that question.

Q. Do you know what bentonite is used for, or why they use bentonite?

A. It's used for several reasons, one of which is that it is a swelling clay, primarily. That's its primary characteristic that makes it desirable.

Q. Okay, and when you say it's a swelling clay, does that mean that it's a sealing agent?

A. It does have that impact when you're drilling, that it can actually be used to build up a wallcake on the borehole.

Q. And are you aware of the term, spud mud?

A. I'm aware of the term.

Q. Are you familiar enough with it to describe it to the Commission?

A. No.

Q. Have you ever been present on a wellsite during the construction phase of a lined temporary pit?

A. No.

MS. FOSTER: No. Okay, I have no further questions. Thank you.

CHAIRMAN FESMIRE: If I remember correctly, Mr. Carr and Mr. Hiser, you all had already cross-examined this witness?

MR. CARR: I have.

CHAIRMAN FESMIRE: Okay, Mr. Hiser hasn't?

MR. HISER: That's right.

CHAIRMAN FESMIRE: Okay. Mr. Hiser, would you...

MR. HISER: Thank you, Mr. Chairman.

Mr. Chairman, members of the Commission and Mr. Brooks, Mr. von Gonten, what I thought I would do is sort of proceed in the same way that you had on your testimony. So starting on Exhibit 6, then moving to the Exhibits 13 and later then coming back, as you did, to Exhibit 6, just to get a sense of flow, where we're going. And I'll try to give both the exhibit and the slide number where that would be helpful for the members of the Commission.

Let's start, then, with Exhibit 6 and look at slide number 6. That's not the one I'm thinking it is.

MR. PRICE: Exhibit 7?

CHAIRMAN FESMIRE: Am I thinking of Exhibit 7?

MR. BROOKS: No, Exhibit 7 is the laboratories --

MR. HISER: I'm thinking of the original Exhibit 13, I'm sorry. My confusion. Exhibit 13, without A, B or C.

MR. BROOKS: What slide number?

MR. HISER: Six.

MR. BROOKS: Thank you.

CROSS-EXAMINATION

BY MR. HISER:

Q. Now I think, Mr. von Gonten, when you were talking through this slide, that you had stated that there was a preference for prescriptive standards and not performance standards; is that correct?

A. I would state it as follows: We think a general performance standard is something that a good rule has, protect human health and the environment. You can't argue with that. We also think that a good rule has technical standards.

Q. I thought, though, in your testimony you said that there had been a movement away from general performance standards in favor of the more prescriptive approach and that the Division was trying to follow that trend?

A. That may have been a statement made by Mr. Price

about a nationwide movement towards landfills, lined landfills, modern landfills. I would agree with that statement.

Q. Okay. Now with prescriptive standards -- and sometimes I think you called them a technical standard, or another term might be a technology-based standard -- can those both over-regulate and under-regulate at the same time for the environmental objective?

A. I think that's a very broad statement, and I would have to say that there's always an opportunity for it to over-regulate or under-regulate. I would think that would be, generally speaking, an exception rather than the rule. But yes, it could be the exception.

Q. Okay. The question, then, in the slides that you showed as part of 13 and that was leading up from this, and which I think Ms. Foster talked about with the slides that were showing pits that the use had been clearly compromised, were a number of those pits in fact in the process of final closure, getting ready for deep-trench burial?

A. I don't know what their final disposition method was going to be. I think most of the ones that I was dealing with in the northwest -- and I think that's where most of the questions were directed at -- would not have been deep-trench burial, and the preference in the

northwest is to cut the liners around the side slope, toss in the side slope liner, and then stabilize it and then cover -- fill and cover.

Q. And if one was in the process in the next day or two that you were going to finish cutting that liner and then putting it in the pit, would one be as concerned about a rip in the liner?

A. Yes.

Q. Even if that liner is just going to be cut off and placed in the pit as part of the closure process?

A. Well, the operator is under the obligation to report a release to the Division. And if you see a rip or tear in the liner, I think a prudent operator should report that to the District inspector.

Q. So your position is that any rip or tear in the liner, even if it's above the level where the water or material is, should be reported as a potential for release?

A. I think a prudent operator would get the concurrence of a District inspector.

Q. If we go on, then, to Exhibit 13, slide number 7, here you talked about a number of the pits, and I think that it's been agreed that some of these pits were both permanent pits or production pits, a number of them were also drilling pits; is that correct?

A. This a general observation, across the board for

all pits. But I do point out particularly temporary pits, which would be drilling or reserve pits.

Q. But previously I think that you had acknowledged that -- at least for the initial slide of the 106-slide presentation, that you could not identify in that whether one was a permanent or temporary pit, just on the stand today or yesterday or the day before, whenever that was presented?

A. I could not, that's correct.

Q. Now, in your testimony, you --

(Off the record)

Q. (By Mr. Hiser) I'll move on then.

In this thing, you say that there is particularly a problem with temporary pits on your conclusion here on page 7; is that correct?

A. Yes.

Q. And how do you reach that conclusion when the testimony presented thus far has been mostly problems not with temporary pits?

A. I don't think that that has been the testimony so far, sir.

Q. It's my recollection that the testimony we've heard -- and I think that you've been here for this -- was that there are about 504 cases sitting on your floor and Mr. Price's floor.

A. Correct.

Q. And out of that there were 10 that were identified as being drilling pit?

A. That's correct. If I can go on and explain my answer, we're talking about problems with the way pits are designed, installed and operated. Those are actually cases that -- where groundwater -- has gotten to the point where groundwater has been impacted. It's a problem is the pits aren't being operated appropriately, it's a problem if it contaminates the vadose zone.

Q. But right now you'd agree that the number of problems in the groundwater, the temporary pits have not been that major of an issue thus far?

A. That's correct.

Q. And is it your understanding from having participated in the task force that the task force and industry are supporting the proposed changes to the permanent pits?

A. Mr. Hiser, I was not involved with the final report, and so the actual wrapping up of the task force I can't testify to.

Q. But when you were there for the first part of the proceeding, was there any significant objection by industry to the proposed changes that were under discussion?

MR. BROOKS: Mr. Chairman, there have been

objections to discussing what positions were taken on the task force when there was not a consensus achieved. I believe Mr. Hiser should be consistent. If he considers that irrelevant, then he should not be the one to initiate going into it.

CHAIRMAN FESMIRE: Well, I think the Commission has taken a position on that, and that position allows us to overrule your objection on Mr. Hiser --

MR. BROOKS: Very good, Mr. Chairman.

CHAIRMAN FESMIRE: Mr. Hiser, would you continue with your question?

Q. (By Mr. Hiser) The question is just whether there had been substantial objection to changing the regulation on permanent pits, from the industry representatives.

A. From what I remember, that's true. There was -- Most of the discussion focused on temporary pits, but I would point out that permanent pits include unlined pits, and so that was an area of a great deal of discussion as to whether unlined pits should be disallowed in the State of New Mexico.

Q. We move, then, on to Exhibit 15, and I'd like to start with slide 19. And begging the indulgence of the Commission for one repetitive question to move on to that, now in this you stated that this was a judgmental program,

and basically that means that you were sampling areas to identify what contaminants might be found in the pits, because you were trying to determine what was in the pit, correct?

A. Yes, it was closer to a judgmental sampling program, rather than the one that I understand that industry conducted where they gridded and randomly selected locations.

Q. And so as you observe in Slide 20, then, that the use of the judgmental sampling strategy really precludes us from drawing much statistical interpretation from the results, in terms of the contents of the pits?

A. That is the EPA -- that citation in section 4 of our sampling analysis plan was a cut-and-paste of an EPA guidance.

Q. And on the other hand, the industry committee sampling, as you understand it from what you've read in the report, appeared to be more of a randomized approach?

A. That's correct.

Q. So that that might be, then, more appropriate for statistical analysis?

A. That's correct. You would have to have a randomized approach to conduct statistics.

Q. Now in your testimony you observed that you took the maximum value of any single sample of the pits for

purposes of the comparisons you did with other standards like the SSLs and the 3103s; is that correct?

A. Yes.

Q. And do you believe that that's representative of, then, what is found in the pits as a whole, using that approach?

A. I believe that it identifies the constituents that were found in that pit, and it answered the question that was posed to us by industry persons at the outreach of, What is in that pit?

Q. But you'd agree that that answers that question with a bias high?

A. Yes --

Q. And all that --

A. -- the attempt, though, Mr. Hiser, was to identify the compounds that were present, to answer that question that was posed to us.

Q. And so in the same fashion, then, would you agree that if I took the maximum numbers of spelling errors, for example, in an OCD document, that I could then say that that would be representative of the quality of spelling across the OCD?

A. No, I wouldn't say that.

Q. Well, how does that differ from the approach that was taken?

A. Our approach was to identify the compounds that were listed. And we also wanted to make a point whether something could be -- could: not necessarily, but could, exceed an appropriate standard such as TCLP or 3103.

Q. Thank you. Now in slide 30 in this exhibit, I believe that you had identified that there were approximately 77 constituents that were detected in at least one sludge/soil or liquid/water sample; is that correct?

A. That's correct.

Q. How many of those approximately 77 constituents would have been naturally occurring in the soil, the rocks or the hydrocarbons that would have been drilled through in order to produce the material in the pit?

A. We're having a problem here, but I'll focus on your answer.

You may remember that we have what we referred to as the general chemistry in those compounds listed down to the bottom.

Q. Uh-huh.

A. So I think that it would be fair to say that a lot of those things such as pH and the total metals that were analyzed are naturally occurring. Obviously, every compound has a certain pH.

However, it also included the DRO, GRO and TPH,

so those are not naturally -- well, they are naturally occurring in the subsurface, but they're not -- don't naturally occur at the surface.

Q. But they're naturally occurring in the subsurface?

A. They are naturally occurring. Those are compounds that would have been encountered in the subsurface formations. And for example, you could run some diesel and a drilling fluid, and a drilling mud. So some of the diesel that may have been -- You would have to look at the records --

Q. Is diesel --

A. -- that are available.

Q. Go ahead.

A. But if you take that out, you know, the 77 -- and I want to say that there's probably a dozen compounds that we would call naturally occurring, so subtract that from the 77, and you'd find the -- well, also the volatiles, I think, that would be the compounds of hydrocarbons and some of the semi-volatiles. Some of the compounds that we saw were probably drilling additives.

Q. And out of the total number of 77, how many do you think might have been the drilling additives?

A. I don't know.

Q. Okay. But it's likely that a significant number,

if not the majority, of the compounds would have come from the rocks or the hydrocarbons that were being produced?

A. I think that's generally true. I think that there were also mud additives that were added to the particular programs that were detected by this program.

Q. In slide 31, you argue that five samples would have been hazardous waste, quote, but for the statutory RCRA exemption.

But isn't it also true that but for the statutory RCRA provisions, they wouldn't be hazardous waste at all? In other words, doesn't RCRA define the universe of hazardous waste?

A. Yes, it certainly does, and oilfield waste is exempt from RCRA Subtitle C regulations.

MR. BROOKS: Mr. Chairman, I believe that -- I'm advised that if we're to get the presentation back up on the screen it will be necessary for the witness to come down to enter his password in here --

(Laughter)

MR. BROOKS: -- since Mr. Hansen doesn't know Mr. von Gonten's password.

CHAIRMAN FESMIRE: Seeing that there's no objection from Mr. Hiser, we'll ask the witness to do that.

(Off the record)

Q. (By Mr. Hiser) Let's move on to slide 32.

CHAIRMAN FESMIRE: Thirty-two?

MR. HISER: Thirty-two, yes.

Q. (By Mr. Hiser) Now this slide, Mr. von Gonten, you're drawing a distinction between EPA's use of the TCLP test for determining whether something is characteristically hazardous and the industry committee's use of the TCLP test to determine whether something is environmentally mobile and bioavailable; is that correct?

A. That -- in quotes it says "environmental mobility and bioavailability" -- is taken from the industry committee's report that was provided in the results of their sampling program to task force.

Q. Is it your testimony that there's something inappropriate about that?

A. It is not the use for which the test was devised.

Q. Really? Can you tell me, then, why the TCLP test was developed?

A. I'm not an expert on that, but it is used by EPA to determine whether a waste -- and I believe the scenario -- and probably Mr. Hansen can answer this more completely than I can, but it is used to determine -- or to actually model extraction procedure time and the leachate that would be generated in a municipal landfill.

Q. And wasn't the concern with the leachate that was generated from a municipal landfill -- it's the fact that

it was toxic and mobile, and hence bioavailable?

A. I think that goes beyond what the test was. The test is very narrowly defined. It's an extraction procedure, and then you analyze the extract or the leachate. You either analyze the sample if it's fluid directly for TCLP, or you analyze the solid using a 20-to-1 dilution factor and then follow the specified procedures in EPA method 1311.

Q. Okay. So just so I'm clear, your testimony is that the test is not used for mobility evaluation and is only used as a regulatory determination?

A. That is its primary use as devised by EPA. Other people can use it for their own purposes.

Q. I see. Now on slide 33 you state that industry's use of the T-clip test in its testing program is not useful in determining what constituents are actually present in the pit contents; is that true?

A. That's what I stated.

Q. And did, in fact, industry not take totals as well?

A. They did as well.

Q. And that would be appropriate for determining what constituents were present in the pit contents?

A. Yes.

Q. And wasn't the purpose of the T-clip to evaluate

mobility and bioavailability?

A. We'll have to ask the industry committee's witness on that issue.

Q. Fair enough. Now on slide number 34 you state that, Based on OCD's data, five constituents would have exceeded the TCLP test -- by which I presume you mean the regulatory test for hazardous waste -- were present: arsenic, lead, mercury and two others; is that correct?

A. That's correct.

Q. And in the liquid test does one use dilution?

A. No. If I can go on and explain a little bit, you have at least three opportunities with a wastelike material to analyze it. It could be completely solid, and EPA specifies a certain solids content. So if you have something that's sludge, half solid and half liquid, to do a complete TCLP you would analyze both the solid fraction as well as the liquid fraction, but you use the liquid fraction directly.

Q. Correct. On slide 35, I think that you had expressed a concern about a dilution and the issue with lead. And I guess I have a question for you on your data, and it's probably too hard to pull that data back up, but my recollection is that OCD's data showed a value in the -- like 4.13 or some type of that value in that area, but it was in the single-numeral digit with -- a couple of points

followed it.

And the industry committee TCLP data showed some number that was like .0042 or something like that. Do you recollect that slide?

A. I would have to refer to the slide.

Q. Do you know quickly where that slide is, and we can pull that up?

A. If you're talking about the --

Q. It was in the big compilation that you did.

A. That would be Exhibit 16. 17?

Q. I'm not sure, I will defer to the witness as to --

A. I don't have that in front of me. I think it is Exhibit 16, and we would be looking at the revised exhibit -- is this the one?

Q. Yes.

A. Mr. Hansen, could you go over to the Tab 6? This is the very busy one that has both solids and fluids, so we might want to look at one of the other ones. Did you want solids?

Q. -- soil.

A. Okay. And scroll down below, please.

Q. I was thinking one of these had the TCLP on it, but I guess I misremembered, so we'll skip on that question.

On Slide 41 --

A. We're back in 16?

Q. Back in Exhibit -- whichever one we've been in, which is --

MR. BROOKS: 13.

MR. HISER: 15.

MR. BROOKS: 15?

MR. HISER: Yes.

MR. BROOKS: Thank you.

Q. (By Mr. Hiser) Now it seems to me that this slide actually summarizes your position a little bit. Let me explain what I understand it to be, and then you can correct me. But basically you're saying that pits contain constituents, and the constituents are toxic at some amount, and that we're not going to conduct the science to determine that particular amount because it may or may not support our judgment as to what constitutes proper oilfield waste management; is that correct?

A. Given the RCRA exemption, it does not have to be handled as hazardous waste, but it does have to be handled appropriately.

And as far as the number of constituents, the only time that that would enter in, in our opinion, is if one of the constituents was present, say three-phase, and there was a compatibility issue with the liner. That would

be the only time in which we would think that the concentration, in particular, of the constituent was going to be relevant. It's still oilfield waste.

Q. So your position basically is that the concentrations of the materials that are in the pit really are not relevant to the proper handling of the material. What it should be done is handled in the way that puts it in the liner and that is excavated and puts it into a permanent safe receptacle, like the landfill?

A. Our position is that oilfield waste must always be handled properly, and that the actual argument about the concentrations is not particularly relevant to that.

Q. Okay. And is that understanding, to your understanding, shared with the Division?

A. Yes.

Q. On slides 48 through 50 -- and I will characterize them for the Commission, but you're certainly -- feel free to flip through them -- this is the materials that support EPA's 1987 report to Congress, is it not?

A. This information is taken from that report.

Q. Can you explain to me what the relevance of a 20-year-old study on pit and associated waste contents would be?

A. Yes, I'd be happy to. EPA conducted its own study similar to what we did, and they analyzed for

different samples from different locations. They talked about 19 drill sites, 23 production sites, four centralized pits and three centralized treatment facilities.

So this same question has been asked and answered before and was asked and answered by -- I guess by Congress and answered by EPA to Congress.

The comparison here was that you find more constituents, the more analytes you analyze for. We did, as I said, a relatively large suite. It would be kind of our standard suite. It was not everything that you could throw at it as -- if you were going to be conducting a really rigorous investigation.

EPA back at this time analyzed for dioxins and furans and pesticides and herbicides, as well as the RCRA characteristics for corrosivity, ignitability and reactivity. They analyzed for more constituents than we did, and they found more than we did.

Q. But isn't it true that when EPA has subsequently gone back and re-evaluated that and the associated waste reports in the sector notebook, that the number of constituents of concern has fallen considerably from that 534?

A. I would have to refer to that report to see how many things they analyzed for.

Q. But you'd agree that, at least as you've

presented it, and the constituents of concern, that there are fewer in the more recent reports than there was in the '87 report?

A. The 2000 reports conducted by EPA were focused reports, and they do report, as I do, 72 and 47, by my account, for those specific investigation. And yes 72 and 47 are less than whatever the previous report in '87 had, which is 534.

Q. Thank you. Just a second here. Now Mr. von Gonten, since the pit materials are at least in large extent derived from the New Mexico subsurface and they contain these constituents which you're arguing are toxic or otherwise need to be handled, I mean, how do we distinguish what parts of this New Mexico subsurface need to be dug up and placed in the landfill?

A. If it's managed in a pit it becomes oilfield waste, and the oilfield waste must be handled appropriately, Mr. Hiser.

Q. So basically your position is that anything that comes from the subsurface as part of an oil/gas thing needs to be managed in a landfill?

A. There are opportunities for recycling and re-using.

Q. Subject to a recycling or re-use exception?

A. Yes. We --

Q. Are these things not toxic and hazardous when they're in the New Mexico subsurface?

A. All compounds have toxicity, and yes they would be toxic in the subsurface.

Q. So why aren't you concerned about them where they are presently?

A. Because they're not oilfield waste in the subsurface, Mr. Hiser.

Q. So your concern, then, is only when they become an oilfield waste?

A. That's correct.

Q. I see. Let's go on to your Exhibit 18. This is the -- I think where you presented what's called sensible waste management?

A. Yes.

Q. Now it seems that in slide 6 overall -- well, maybe overall, but that you have faulted generally existing Pit Rule 50 for being overly general, with general performance standards and not enough specificity; is that correct?

A. That is one of the problems with the pit rule, the current pit rule.

Q. Now Mr. von Gonten, if we look at the standards here from the suggested E&P waste management practices, in what way are these any more specific or helpful than the

existing Rule 50?

A. They are general. They say when possible, minimize, rather than a certain number. And so these are, to a large degree, also general performance standards. They're also what we've referred to as pollution-prevention goals.

Q. Okay. Now on slide 10, in your discussion of the 100-mile radius, you stated that with -- that, The cumulative effect of these sites cannot be calculated with certainty, but it certainly must have a strongly negative effect on the environment, because the unstabilized waste contents have the potential to migrate vertically downward and contaminate groundwater.

Now did you present, yourself, any science to support that conclusion?

A. That is my professional opinion.

Q. That's a professional opinion, but you did not present science *per se* for that; is that correct?

A. That's correct. We don't know anything about the sites that we don't now anything about.

Q. Now on slide number 11 you're talking about the on-site disposal of pit contents and that that's undesirable because there's a risk that individuals would dig or trench into the dump and cause additional release; is that correct?

A. That's what this slide says.

Q. Well, is that your opinion?

A. Yes.

Q. Okay. Isn't that only a concern if the exposed individual suffers some consequence as a result of the exposure to those materials?

A. Yes.

Q. If it's just dirt, it doesn't matter?

A. If it's just dirt, well, we could put that aside and talk about the exposure to the individual. What this slide points out is that if we allowed industry to continue doing on-site disposal, we're going to continue to accrue a large number of pits that are out there, always representing some problem, some risk to future citizens.

Q. And that risk right now rests upon your conclusion that they contain constituents and that constituents at some level are toxic?

A. That, plus if you have unstabilized pit contents, you could have a house that has to be rebuilt or has to be repaired.

Q. But it's the consequence of the presence of the material to the house or to the individual that creates the concern, does it not?

A. Certainly.

Q. Now on slide 14 you state that market forces will

step into fill any gap in available capacity, presumably in landfills?

A. Yes.

Q. And are you an economist that is qualified to render an opinion on market forces?

A. No, that's my personal opinion.

Q. Now was it you who testified -- or maybe it was Mr. Price, but I thought it was you -- that one of your existing permitted landfills is reluctant to expand because of the cost of new Rule 36?

A. That would be Mr. Price.

Q. That was Mr. Price.

Let's then go back to slide -- Exhibit -- I think it was 13, the original one where we started just a few days ago back. I think we're starting now on page 7 of that exhibit.

MR. BROOKS: Exhibit 13?

MR. HISER: Exhibit 13.

MR. BROOKS: Thank you.

Q. (By Mr. Hiser) And I would like to go back to slide 8 of this exhibit. And actually, probably most appropriately is slides 8 and 9 together, one of which is the definition of an open dump and one of which is sort of the prohibition, if you would, for that.

Now Mr. von Gonten, would you agree that what's

contained in drilling pits is basically drilling fluids, assorted produced waters, drill cuttings and other stuff that's produced as part of oil and gas exploration process?

A. Yes.

Q. And it is your testimony that these unlined pits constitute open dumps within the meaning of RCRA 104; I think you said that to -- in cross-examination with Ms. Foster; is that correct?

A. Section 1004.

Q. 1004, correct.

A. (Nods)

Q. Is that a yes?

A. Yes.

Q. Now I think that Mr. Brooks in that same discussion or an earlier discussion had suggested that you might believe that also for lined pits; is that your position?

A. No, I don't think that's correct.

Q. Okay. So your position is only as to the unlined pits at this time?

A. This is focused on the relationship of an unlined pit meeting the definition of an open dump.

Q. Okay. Now in making your argument that an unlined pit is an open dump, are you relying upon the definition found in Section 1004, section (14)?

A. Yes, the definition stands for itself.

Q. I see. And do you agree that in New Mexico, that it's the New Mexico Environment Department and the Environmental Improvement Board which are the agencies that are assigned responsibility for developing the criteria promulgated under Section 4004 of the Act?

A. I'm not certain that I can testify to that statement.

Q. Assuming that I were to tell you that the Solid Waste Act of New Mexico assigns that responsibility to the director of the Environment Department and the Environmental Improvement Board, would you accept that just for purposes of asking this question?

A. Yes, as far as the definitions of solid waste and hazardous waste.

Q. And is it not true that the materials that we're talking about are excluded from the definition of the term solid waste?

A. By the State, that is my understanding.

Q. Okay. And so if there's not a solid waste, then this wouldn't be an open dump, would it?

A. I disagree with that statement.

MR. BROOKS: Mr. Chairman, I think that this -- the predicate of Mr. Hiser's question makes it a question that asks the witness for a legal conclusion.

CHAIRMAN FESMIRE: I think it's a little late to object to it, Mr. Brooks.

(Laughter)

CHAIRMAN FESMIRE: I'll overrule the objection.

MR. BROOKS: Thank you.

Q. (By Mr. Hiser) And so your answer is that you disagree with that?

A. That's correct.

Q. And what would be your basis for the disagreement?

A. One is a definition -- a statutory -- a federal statutory definition, and the other is a state definition.

Q. But Mr. von Gonten, if in fact as I've asserted is true -- and you may disagree with me on this -- that ED determines what those criteria are, that is also the federal definition and the state definition both, and so I once again ask my question. Assuming that ED is the one that determines the criteria, would not then these not be open dumps?

A. I don't think that I can answer that question with complete clarity. I can answer my opinion about it, which is that we have hazardous waste, we have solid waste as defined in the Environment Department, we have oilfield waste as defined in the Oil and Gas Act. There are other wastes which are exempt, generally, from the definition of

solid waste. I do not believe that oilfield waste is exempt from the definition of solid waste, federal statutory definition.

And my understanding is that the authority for managing nondomestic waste is in the Oil and Gas Act and is the responsibility of the Oil Conservation Commission.

Q. So you're basically, as I understand it -- Let me repeat this back and you can tell me where I've got it wrong, that you believe that the federal definition of solid waste is broader than the state definition and that the federal definition is the one that's used for this purpose and that you'd stand by your statement?

A. Yes, this is a federal definition for the purposes of RCRA.

Q. Well, assuming that you're right and I'm wrong, then, wouldn't that mean that the Commission's adoption of your rationale would expose the industry and the Commission and potentially the OCD staff to liability under RCRA Section 6972 as aiding and abetting open dumping, in violation of federal law?

A. I don't know that it exposes the Commission. I believe that a person who operates an open dump is certainly at risk, and I believe --

Q. Can --

CHAIRMAN FESMIRE: Let him finish, Mr. Hiser.

MR. HISER: I'm sorry.

THE WITNESS: And I believe there is some -- there is an issue there which says -- which is not a sanitary landfill which meets the criteria promulgated under Section 4004, and which is not a facility for disposal of hazardous waste. A strict reading of that might require a double liner for any on-site disposal, among other things.

Q. (By Mr. Hiser) And so I'll ask my question, is, can we have an unlined pit in New Mexico, under the present rules, and under the set of rules before this, without an order of the Commission?

A. I'm sorry, I didn't hear the last part of that.

Q. Can we have an unlined pit under the present rules or the immediate prior rules of the Commission without an order of the Commission authorizing that unlined pit?

A. To make sure I understand your question, could you rephrase it with respect to the current pit rule?

Q. The current Rule 50 and the immediate predecessor set of rules.

MR. BROOKS: Mr. Chairman, I would ask that the witness [*sic*] clarify his question as to whether he means an order of the Commission authorizing a specific pit in a specific location, or an order of the Commission adopting

the rule.

CHAIRMAN FESMIRE: I'll sustain that. Mr. Hiser, would you rephrase your question, please?

Q. (By Mr. Hiser) Both.

A. Please repeat the question.

Q. My question is, assuming that I am wrong and that you are right, and that the open dump prohibition applies, can we have adopted a rule for allowing open pits, except by order of the Commission?

A. I don't know.

Q. And I take it, then, your answer is, you don't know about a specific pit location either?

A. I think that would also be true, that I don't know the answer to that.

MR. HISER: I see.

Mr. Chairman, I have no further questions for this witness.

CHAIRMAN FESMIRE: Okay. Mr. Frederick, do you have any questions for this witness?

MR. FREDERICK: Yes, I have a couple. Should I come to the podium?

CHAIRMAN FESMIRE: Please.

EXAMINATION

BY MR. FREDERICK:

Q. Good morning, Mr. von Gonten.

A. Good morning.

Q. Holding up all right?

A. Yes, thank you.

Q. First question I guess I want to follow up. The contaminants or pollutants or however you want to describe them, that end up in a pit that we're talking about today, those all do come from the subsurface?

A. Assuming that there hasn't been some dumping that goes on.

Q. Right.

A. But there are things that are added to the mud that have nothing to do with the subsurface, and industry is allowed to devise its own drilling program.

Q. And those contaminants, would they include chlorides, high total dissolved, hydrocarbons?

A. Yes, those are all constituents which we detected during our pit sampling program.

Q. Okay. When those occur in the subsurface before they've been extracted, as a general matter do they threaten New Mexico's water supplies or the public health or welfare?

A. As a general matter, no. I think you could probably find a specific site, perhaps in the southeast, where the dissolution of the Salado formation is actually having a negative -- a strong negative impact on the Pecos

River. Totally naturally occurring, but it is a strong negative impact, polluting the river.

Q. All right. So the general problem is, when they're extracted from the subsurface, say at depth, and placed on the surface in a pit that might leak?

A. That's correct, they become oilfield wastes --

Q. Okay.

A. -- in that scenario.

Q. Did the fact that the State Engineer has now placed all the land area in New Mexico within declared underground water basins -- did that have any relevance to OCD's decision to go ahead and propose this rule amendment?

A. It was something we were certainly aware of. I don't think that that was a deciding factor in moving forward with this proposal.

Q. Okay. And on this open dump definition of RCRA, are you essentially saying that it's analogous to an open dump, or are you making a conclusion of law?

A. Well, I'm not qualified to make a conclusion --

Q. Okay.

A. -- of law, but I can say that it says what it says, and that's why I provided it on that slide --

Q. Okay.

A. -- in the other objectives section.

Q. On the 100-mile-radius provision, did you make

the decision to include that 100-mile --

A. It was an OCD decision.

Q. Okay. Were you involved in that decision?

A. Yes.

Q. Who else was involved in that decision?

A. As I remember, it included Mr. Hansen, Mr. Price, myself, Mr. Jones. There may have been other people.

MR. FREDERICK: Okay, that's all I have.

CHAIRMAN FESMIRE: Okay. Dr. Neeper, did you have any questions of this witness?

DR. NEEPER: No questions.

CHAIRMAN FESMIRE: Commissioner Bailey?

COMMISSIONER BAILEY: A few.

EXAMINATION

BY COMMISSIONER BAILEY:

Q. Let's look at Exhibit 9, page 4. I know this is an exhibit that Mr. Price presented, but as a hydrologist I'm asking you the question. I previously asked him about the role of different lithologies within this 50 feet, and he gave an answer.

I need to ask you, what is the role of vegetation in the transport and timing of movement of contaminants through the vadose zone?

A. Thank you very much for the question, Commissioner Bailey. This is actually dealing with the

drilling pits. I think the short answer to your question is, it doesn't incorporate anything with vegetation in this slide. If you were to ask about re-vegetation after the pit had been removed and re-vegetated --

A. That's my question.

Q. That's your scenario? That would have -- possibly occurs to me that it could have several impacts, but evapotranspiration would be one of those, that it would -- any rainfall would be likely -- if the re-vegetation was wide enough and dense enough, it could actually cause the water to be used by that plant, and also would be transpired by the plant.

Q. So the rate that's shown as a foot a day and as a .01 foot per day are modified, not only by the lithology but also by the amount of re-vegetation that occurs over these deep-trench burials?

A. Yes, it would.

Q. Is that --

A. Yes, ma'am, it would.

Q. -- a valid conclusion?

A. Yes, it is.

Q. Does the proposed rule go into detail about rates of re-vegetation or performance standards or technical standards?

A. Commissioner Bailey, I believe the answer to that

is, I don't know in detail. Now Mr. Jones will be going through the actual provisions on a section-by-section basis.

Q. Then I will ask him.

In Exhibit 16, page 12, this is the summary of the OCD sampling results for liquid pit contents in the northwest. And in your judgmental sampling program you chose sites that you thought may be representative or may be -- may further your arguments for presentation. I did a quick pencil-to-paper, and it turns out that the average for the chlorides for all of these different wells on the very bottom of the last page there, wherein we have chlorides: 1210, 7810, 3400, 4280, 3940 -- those values -- that average turns out to be 3781. But yet you use 5000 for your input into the model that I questioned the other day.

Would the fact that a greater than 20 percent difference in chlorides create false readings or different readings from what you came up with?

MR. BROOKS: Mr. Chairman, Commissioner Bailey, I --

CHAIRMAN FESMIRE: I was hoping we'd never get to the point where we objected to a Commissioner's question.

MR. BROOKS: I don't want to object to a Commissioner's question, but I would like to point out that

this is not Mr. -- that this is not Mr. von Gonten's model, that he did not control the assumptions that were made on it. Subject to that, he can -- I don't object to his giving his opinion of their validity, but it was not his model.

CHAIRMAN FESMIRE: Okay. That having been said, Mr. von Gonten, would you enter the -- would you answer the question, please?

THE WITNESS: I did not, Commissioner Bailey, run that model, but I was involved in providing the information to Mr. Hansen who actually ran the model, and provided, I believe, some exhibits to Mr. Price, and those were the exhibits which you're referring to. And I believe that Mr. Hansen will show that we ran a spectrum of concentrations and that 5000 was considered not to be the maximum amount, but perhaps an amount that was representative. Also considering that industry detected a much higher concentration in its pits that they sampled.

Q. (By Commissioner Bailey) But on the evidence that you presented to the Commission, the average is less than 4000?

A. I haven't done that calculation, but I'm sure you're correct.

Q. Exhibit Number 18, page 15, you presented a slide here that says, Industry should not be allowed to dispose

of oilfield waste on site except in certain limited circumstances; that is - only with landowner approval and only in properly engineered deep trenches.

Are you an attorney?

A. No, ma'am.

Q. Are you a Legislator?

A. No, ma'am.

Q. Does hydrology give you any expertise in determining whether landowner approval is necessary for determining the validity of on-site disposal?

A. No, ma'am, it does not.

Q. Thank you. Let's go to the pictures in number -- Exhibit 15.

MR. BROOKS: I'm sorry, which exhibit?

CHAIRMAN FESMIRE: 15.

COMMISSIONER BAILEY: 15.

MR. BROOKS: Thank you.

Q. (By Commissioner Bailey) I'm not going to go one by one from these. I'm just going to point out that quite a few of these photographs show hydrocarbons on the surface of the fluids; is that right?

A. Yes, ma'am.

Q. Do you see anything ambiguous -- personal opinion, professional opinion -- in the current Rule 50 where it says, No measurable or visible layer of oil may be

allowed to accumulate or remain anywhere on the surface of any pit? Is that ambiguous?

A. No, ma'am, it is not. It is clear.

Q. But yet you're using photographs of evidence of violation of this rule that OCD chose not to enforce as evidence that we should have an even stricter rule. I am personally appalled on behalf of the Commission that promulgated this rule that as you have -- you have said, District inspectors have discretion to enforce Rule 50 in those areas where there is no ambiguous language and where there has not been one case presented to this Commission concerning oil on pits.

How can you present that to us as proof that you need more rules when you're not enforcing this rule?

A. Commissioner Bailey, if I may respond, I would point out that when I was talking about a tear in the liner, my point was that a prudent operator should consult with the District inspector to determine whether the District inspector thought that an investigation was required, whether they thought it was.

I agree that the hydrocarbons in the pits are not allowed under the present rule. We did not -- I do not know whether the inspectors have visited any of these sites before. We visited them, and it may be that the inspectors, after we left, took enforcement action.

Q. Let's go to another portion of Rule 50, as it's currently written. All pits shall be fenced or enclosed to prevent access by livestock, and fences shall be maintained in good repair. Okay.

Farther on down that paragraph: All tanks exceeding 15 feet in diameter, exposed pits and ponds shall be screened, netted, covered, or otherwise rendered nonhazardous to migratory birds. Is that ambiguous?

A. It is not ambiguous, Commissioner Bailey. It does not specify any particular type of netting or --

A. No, it simply says, You shall prevent access by migratory birds. And when you show me a dead bird I'm going to respond once again, Why is this provision not enforced? If you say again that it's discretionary by District inspectors, I resent having lack of enforcement used as evidence for a new rule.

That's all I have to say.

CHAIRMAN FESMIRE: Okay.

Mr. Huffaker, did you have any questions of this witness?

MR. HUFFAKER: I do not.

CHAIRMAN FESMIRE: Okay. Commissioner Olson?

COMMISSIONER OLSON: I have a couple of questions. I guess one -- Oh, some for a point of clarification, for a start. Let's see if I got something

correct.

EXAMINATION

BY COMMISSIONER OLSON:

Q. On your Exhibit 16 you provided those tables, and I'm just looking at the first table that's presented on page 1, and it says you have the OCD sampling results for 11 liquid pit contents. Am I counting wrong? But I think I only count 10.

A. You're correct, sir. It should be 10.

Q. Okay. And I think on -- the same thing on page 5 of that table, the next set of samples for the sampling results for the solid/sludge pit contents in southeastern New Mexico. It says there's 13 solid/sludge pit contents, and I was only counting 12. Actually -- it might actually only be 11, because two of them appear to be duplicates that you're showing. I see 13 columns, but it appears to only be representing 11 pits then; am I correct on that?

A. That is correct. The count of 13 does include the two duplicates.

Q. So it really should only be 11 --

A. -- 11 pit sites.

Q. -- pit sites, okay. Okay, thanks for clarifying that.

And then is there some way that I could look at what -- I know you were asked, I think, a little bit about

this, but as to what types of pits these samples represent, is there some reference? Are these a mix of temporary and permanent pits, or are they just temporary pits?

A. Commissioner Olson, it's been referred to as the Dakota ring. If you look at the listing of the pit sites from column B through N, you can see that there's one that says CL-6. That's closed loop. Anything that says DP is a drilling pit. If it says PP, it was a production pit.

And so the only permanent pit would be the -- a pit -- PP would be the first couple letters in that column. So anything that says -- and this is from the southeast, so there's a DP-1 Echo and a DP-1 Marbob, then DP-4 and DP-4 Duplicate. Those are drilling pits.

Q. And if it says DPH?

A. That was Hobbs.

Q. That's Hobbs, okay.

A. And the other, DPA, was Artesia.

For the northwest, if I may continue, if it said DP-3 that was District 3. We were not consistent on our naming -- nomenclature.

Q. And the T designation is -- ?

A. A standard -- a steel tank. There was a pit on one location, but we actually sampled from the tank.

Q. And then PPs are permanent pits?

A. Production pits.

Q. Production pits, okay. Thanks, that helps clarify that a lot for me in looking at those.

I guess kind of sticking with the sampling at the moment, what's represented on these tables, you were saying that the industry samples were not taken with the same protocols as the OCD samples?

A. We're unaware to this date of what sampling protocols were employed by the industry committee in obtaining their samples. They did not provide any sampling analysis plan.

I do know from the summary that they did apparently grid both horizontally and vertically the pits and compiled samples based on a more random sampling strategy.

Q. And was that for both the liquid and solid samples, or just the --

A. Commissioner Olson, my understanding is, they sampled -- the only thing that they reported was total solids and the TCLP analysis -- analysis after TCLP. They did not sample, to my knowledge, for fluids.

Q. And the TCLP analysis only is for the solid samples, then, because that's -- the leaching procedure is used on the solid samples?

A. That's my understanding of what they did, based on the report they submitted to task force.

Q. Because I think I saw that you had some tables in the back that were comparisons between OCD and industry sample results, and they don't seem to -- there seem to be some differences. Is that just due, then, to the difference in methods being used, I guess, or -- ?

A. Commissioner Olson, I don't know why they differ. Industry presumably will present their case and tell what they actually did as far as their sampling protocols. I think they used comparable EPA methods, 8260, 8270, so forth, 6010, 6020.

But as far as their sampling protocols for actually how they got the samples from the pit, I'm familiar with that information. If you're referring to a difference in concentration, I can only say that's what the data has represented, compared to our studies.

Q. So is it your testimony, then, there's not any real good way to compare the results between the samplings? Is that what your testimony is?

A. No, Commissioner Olson, I think that you can compare them. But industry, as I understand it, presented their report, and from what I remember they presented a minimum and a maximum and an average number for the constituents that they reported.

I -- for comparison with our data where I was looking at the maximum value for comparing the constituents

in the positive detects, I took their maximum value and did compare it to OCD's maximum value for the same constituents.

Q. Okay. I'll probably have to wait to ask industry how they've done some of that sampling.

How about on the -- I guess on the split samples? Are you saying that they split samples with the OCD? And how comparable were those results?

A. To be honest, I wasn't able to manually input that information and to provide it to us in a PDF format, I believe, or some other report. The summary of tables were provided to us electronically, but it was just an image. I wasn't able to electronically cut and paste those in to Excel, and so I do not include the split samples that industry collected when we were collecting our samples in this Excel exhibit.

Q. Okay, thank you.

I guess coming back to what you were mentioning on the soil -- on the solid sampling that industry used the TCLP methods, you did work, I guess, previously for the Hazardous Waste Department --

A. Hazardous --

Q. -- the Hazardous Waste Bureau in the Environment Department?

A. Yes, sir, I did.

Q. And for what purpose was TCLP used when you were in the Hazardous Waste Department -- or Hazardous Waste Bureau, excuse me?

A. It was not used for environmental investigation. It was used to determine whether something was hazardous waste as defined by the toxicity characteristic leaching procedure and would be characteristically hazardous.

Q. And so --

MS. FOSTER: Mr. Chairman, if we could ask the witness to keep his voice up? I could barely hear him.

CHAIRMAN FESMIRE: Mr. van Gonten, will you speak up, please?

THE WITNESS: Yes. Shall I repeat my answer?

CHAIRMAN FESMIRE: Please, sir.

THE WITNESS: My experience in the Hazardous Waste Bureau of the Environment Department was that TCLP was not used for environmental characterization of the site. It was used to determine whether a waste was characteristically hazardous as determined by analysis after applying method 1311, which is the TCLP.

Q. (By Commissioner Olson) And was that for the purpose of determining where wastes would be disposed of?

A. Yes, that is correct. If a waste at a hazardous waste facility was determined not to be a listed waste and was determined not to be a characteristically hazardous

waste, then they would not have to dispose of it in a hazardous facility.

Q. So I think you just had said it was used for -- not used for characterizing a site. Was it used for determining appropriate levels for cleanup of contaminants and whether or not they posed a threat to groundwater or human health?

A. Commissioner Olson, not in my experience, they were not -- it was not.

Q. And I guess in your experience at OCD, has the OCD consistently used that same type of procedure in using TCLP as at the Hazardous Waste Department? Was it used for characterization purposes of wastes for disposal, and not for determining the extent of contamination or cleanup levels at a site?

A. I'm unaware of any site investigation that was a remediation plan or an abatement plan where people analyzed the constituents, reported them to us after TCLP was applied.

Possibly it could be used at a surface waste -- excuse me, a service industry facility to determine whether they were actually dealing with nonhazardous, nonexempt, to make that determination.

Q. But I'm not sure the answer to the other part. Has the OCD used TCLP results for determining the extent of

contamination or for determining whether a contaminant poses a threat to public health or whether it's going to migrate to groundwater?

A. Commissioner Olson, not in my experience in the past two-and-a-half or so years.

And if I could continue, not any of the contamination cases with which I may be familiar with.

Q. Thank you. You had a question about the Westgate subdivision cleanup that was conducted by Shell Oil. You did not work on this site. It's an abatement plan under the Oil Conservation Division; is that correct?

A. I believe it's Abatement Plan 2.

Q. And you did not work on that cleanup that went on at the site, did you?

A. Commissioner Olson, I did not.

Q. You are aware, though, that the abatement plan regulations require surveys of water wells within a certain distance from the site?

A. Commissioner Olson, I'm aware of that.

Q. And any evidence of water wells should be in those files, should they not?

A. Commissioner Olson, that is true. They should be, if it was done. And I would also point out that this is a file --

MS. FOSTER: I would -- Mr. Chairman, I would ask

the witness to keep his voice up. I can't hear him.

THE WITNESS: I apologize.

Commissioner Olson, I have actually physically handled the case file for Westgate. It's quite voluminous, and I'm reasonably confident that it is in that part of the administrative record.

Q. (By Commissioner Olson) Are you aware Westgate subdivision is within the City of Hobbs and is served by the city water system?

A. Commissioner Olson, I was not aware of that.

Q. And let's see, you said that OCD has concern over exposure to future residents from buried pits. I guess -- I'm assuming you are talking about drilling pits?

A. Yes, Commissioner Olson, we're worried about temporary pits.

Q. How would a future landowner know if a pit is buried on site?

A. Commissioner Olson, I don't believe that Rule 50 -- and I'm speculating -- I don't believe it actually mandates anything such as a dryhole marker is mandated for an oil and gas well. I don't know that they necessarily would. I think that the proposed pit rule actually has requirements that the locations of all the pits be surveyed and submitted to the OCD. That would be available in a database in the future.

Q. Then I guess a landowner purchasing a property is probably not going to be surveying OCD records when they're purchasing it to know if there's a pit located on the site, would they?

A. Commissioner Olson, not necessarily. They may not know that it was available, that the information was available, and they may not be able to survey.

Q. Do you know whether these things have ever been deed-noticed, these types of pits, so that the landowner would know that they were actually located on the site?

A. Commissioner Olson, I don't know the answer to that question.

Q. And then I guess, coming back to your Exhibit 18 on page 15, you're talking about the 100-mile radius, and there was some questioning on how that came about. I guess what is the rationale for 100 miles versus 50 miles or 150 miles or 200 miles?

A. The 100-mile-radius number was obtained by reviewing the two primary oil and gas producing areas and looking where the OCD permitted surface waste management facilities, and later on the Environment Department permitted solid waste management facilities to see what kind of coverage.

Our goal was actually to make it quite stringent on industry. We didn't want to make it a 10-mile radius

because we thought that would encourage on-site disposal. We wanted to make it the exception rather than the rule. We came across the 100-mile radius because we thought that was an enforceable number, it would be easily defined and determined by a prudent operator whether they were inside that radius or not.

I can continue by pointing out, there is no analytical solution, there was no detailed analysis. It was based on actually just looking at the maps.

Q. Well, I guess some other number -- from what I'm gathering, then, some other number could be just as easily enforced, whether it's 150, 50 miles, 200 miles?

A. Commissioner Olson, that is true.

COMMISSIONER OLSON: I think that's -- I think that's all I have at this point. Thank you.

CHAIRMAN FESMIRE: At this time we're going to prepare to break for lunch. Before we leave for lunch, as promised, I want to ask, is there anybody in the audience who would like to make a public comment, either an unsworn statement of position or sworn testimony, for the record?

Okay, seeing none, we'll break for lunch. Folks, would you be back here at about 1:15, and we'll start with my questioning of the witness, then we'll go to redirect on the witness.

(Thereupon, noon recess was taken at 12:05 p.m.)

(The following proceedings had at 1:22 p.m.)

CHAIRMAN FESMIRE: Counsel, I have a couple of questions, and Mr. Brooks has the right to redirect the witness, but he looks like he's going to be indisposed for about a half an hour. Would there be any objection to proceeding with Mr. Brooks' next witness?

MS. FOSTER: No.

MR. CARR: No objection.

MR. HISER: No.

CHAIRMAN FESMIRE: Mr. Huffaker, do you have any problem with that?

MR. HUFFAKER: No.

CHAIRMAN FESMIRE: Anybody? Mr. Frederick?

MR. FREDERICK: (Shakes head)

CHAIRMAN FESMIRE: Okay.

COMMISSIONER OLSON: Could I just ask a question before we get started? We received this this morning, the changes from the Division. I guess one -- is one of the Division witnesses going to be testifying about this later?

MR. BROOKS: Yes, Mr. Jones will testify about that.

COMMISSIONER OLSON: Thank you.

CHAIRMAN FESMIRE: Mr. Brooks, why don't you go ahead and start with your witness, and when we get to -- when Mr. von Gonten gets back, we'll take a break at a

convenient time and swap witnesses?

MR. BROOKS: Very good. With that understanding we will call Mr. Hansen. And I believe Mr. Hansen is requesting to present his testimony from the computer; is that correct?

MR. HANSEN: That's correct.

CHAIRMAN FESMIRE: Is there any objection to that?

MS. FOSTER: No objection.

CHAIRMAN FESMIRE: Okay, seeing no objection, Mr. Hansen, you can sit at the computer as soon as you get sworn in.

(Thereupon, Mr. Hansen was sworn.)

CHAIRMAN FESMIRE: Mr. Hansen, where are we going to start --

MR. HANSEN: Good afternoon.

EDWARD J. HANSEN,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BROOKS:

Q. Mr. Hansen, to start off with, would you give the Commission a brief review of your -- Well, first of all, by whom are you employed?

A. I'm employed by the Oil Conservation Division.

Q. And would you state your full name for the record?

A. That's Edward John Hansen.

Q. And Mr. Hansen, how long have you been employed with the Oil Conservation Division?

A. Approximately 13 months.

Q. And by whom were you employed prior to that?

A. I was employed by the New Mexico Environment Department, Solid Waste Bureau.

Q. Okay. And would you give the Commission a brief résumé of your professional education and experience?

A. Yes, I received a bachelor of science degree in science education, received a master of science degree in environmental science, hazardous waste option, specializing in groundwater protection.

I worked for the Water Quality Control Division of the Colorado Department of Health for about nine years. I also have been in -- was employed by the New Mexico Environment Department, Solid Waste Bureau, for approximately 15 years.

MR. BROOKS: Mr. Chairman, we would tender the witness as an expert on environmental science and environmental regulation.

CHAIRMAN FESMIRE: Okay, no objection?

MR. HISER: No objection.

MS. FOSTER: No objection.

CHAIRMAN FESMIRE: Let the record reflect that there's no objection to Mr. Hansen's qualifications. He will be admitted as an expert.

Q. (By Mr. Brooks) Thank you. Mr. Hansen, your exhibit -- the exhibits that you will be sponsoring, I believe, are Numbers 19, 20 and 21; is that correct?

A. That's correct.

Q. Now would you describe what Exhibit 20 is, generally, in general terms?

A. It's a compilation of output files from my computer modeling.

Q. And Mr. Hansen, this is going to seem to be a familiar refrain, but is there a need to make some corrections in that output file?

A. Yes. Pages 31 through 38 was inadvertently copied, rather than a correct output file. I have a corrected output file.

Q. And like the previous witness, do you wish to substitute the corrected file for the file that is included in the exhibit?

A. I do.

MR. BROOKS: Mr. Chairman, we would request to allow Mr. Hansen to substitute his corrected file with the same understanding that we had with regard to Mr. von

Gonten's corrections, that we would re-tender it for cross, if necessary, after other counsel have had the opportunity to examine the corrected files.

CHAIRMAN FESMIRE: Ms. Foster, do you have an objection?

MS. FOSTER: With that stipulation, no objection.

CHAIRMAN FESMIRE: Mr. Hiser?

MR. HISER: No objection.

CHAIRMAN FESMIRE: Mr. Carr?

MR. CARR: No, sir.

MR. FREDERICK: (Shakes head)

CHAIRMAN FESMIRE: Mr. Huffaker?

MR. HUFFAKER: No objection.

CHAIRMAN FESMIRE: Okay. Go ahead and make the switch with that stipulation.

MR. BROOKS: Very good.

CHAIRMAN FESMIRE: What were the page numbers again?

THE WITNESS: Page 31 through 38 in Exhibit 20.

MR. BROOKS: We will need to furnish some additional copies. Okay, tomorrow we will furnish additional copies.

May it please the Commission?

CHAIRMAN FESMIRE: You may, sir.

Q. (By Mr. Brooks) Mr. Hansen, you may proceed with

your technical presentation.

A. Thank you. Mr. Chairman, Commissioners, I'd like to start off with Exhibit 21 and go through some of the Division's results for pit release modeling for the Permian and San Juan Basins.

As we go through, you'll see this maybe more correctly should be titled pit -- releases, but here we have pit releases, and I'll explain more as we go on.

The reason for why we wanted to do some modeling, we wanted get an idea of how much and when a release might reach groundwater. So we have some predictive tools that we use, and in this case we used a couple of different predictive models.

One is called the hydrologic evaluation of landfill performance, or the HELP model, commonly referred to as the HELP model. This model is a water-based balance model with several computer codes embedded. It has runoff, evaporation, transpiration, et cetera. It was developed by the Army Corps of Engineers, US Army Corps of Engineers, for the US Environmental Protection Agency.

We also used the multimedia exposure assessment model, commonly referred to as the MULTIMED model. This is referred to as a pseudo two-dimensional computer code. In other words, I have one dimension down for the vadose zone and another dimension for the aquifer transport laterally.

This was developed by the US EPA.

Q. Now Mr. Hansen, are these models recognized by the US EPA for the purposes of predicting movement from landfills and similar structures to groundwater --

A. Yes.

Q. -- or within the vadose zone?

A. Yes.

Q. And are these peer-reviewed models?

A. Yes, they are.

Q. And are they generally accepted in the trade of environmental regulation as being appropriate to use for this purpose?

A. Yes.

Q. Continue.

A. The HELP model uses actual weather data. That's important, as we'll see, as you go along. The determination of release rates at the bottom of unlined or lined pit -- and this is important, that it can also model an actual liner, what could happen if you have a pit with an actual liner.

Upon my review of literature and out of past experience, I've conducted literally of HELP simulations, so I know that it's one of the most accurate predictors of released wastes from waste disposal areas. It's used by other states. I happen to have had the opportunity to

attend technical roundtables for US EPA Region 6, so I know Oklahoma and Texas uses the HELP model for their regulatory compliance review. And of course industry often uses this, certainly in New Mexico, for design of landfills.

MULTIMED model uses the HELP's output for the input of the most sensitive parameter -- that's what we'll be talking about today -- and that is the infiltration rate.

MULTIMED model used for the determination of release concentrations over time at the bottom of the vadose zone and in the aquifer.

It's a conservative predictor of release concentrations and times. That is, it will accurately predict over a homogeneous vadose zone what the release will be.

As far as inputs into the HELP model, it's important -- we really wanted to use the real-world data. Here you can see it's basically broken up into two basic types of data. One is the weather data, the other soils data.

The weather data, we use daily precipitation, daily temperatures, also use some other daily -- These two, daily solar radiation indexes and the daily evaporation indexes, are generated by the model, based on real-world reporting stations. However, these two are not so

critical, the daily solar and evaporation. When I say not so critical, not so sensitive.

And I'll be talking about sensitivity as we go along, different parameters. Keep in mind, a sensitive input parameter would be, if you made a drastic change in your input, you're going to see a drastic change in the output. Whereas a -- what I call a nonsensitive parameter would be if you make a drastic change in the input you might see a minor change or a low change in the output.

Some of the soil data, we'll see the quality of liner installation. That's rather sensitive, and you'll see why. Some of the others aren't so sensitive, and that will be demonstrated as we go along.

The weather input, we used two sets of weather data for 50 years, 1951 through the year 2000. And we had two reporting stations that had that much data. For the Permian Basin we used Hobbs at an average precipitation of about 16 inches per year, and the San Juan Basin we used Dulce with an average precipitation of about 17 inches per year.

You'll note this data came from a software company that provides data. Of course, they get the data from the National Climate Center, which these reporting stations report to.

I have a map of New Mexico indicating the San

Juan Basin and of course the Permian Basin. You know where the reporting stations are. One, of course, Dulce in the San Juan Basin, and the -- Hobbs in the Permian Basin. Note that they're on the eastern side of these two basins.

What we wanted to do is have a real-world situation where it's -- where a typical pit might be. Wee have to take what would be the wetter side of that typical -- we have to have a rule that encompasses the typical worst-case scenario for pits. We didn't take the wettest spot that we could find in the state, or even in those basins, per se. But there could be -- if you look at a precipitation map, you can see it might be wetter to the east of Hobbs, it might be wetter to the southwest of Dulce. But we wanted to take what would be typical, where are we going to see these pits, and that's what we tried to model with these.

MR. BROOKS: Excuse me, Mr. Chairman, honorable Commissioners. I am advised that Mr. von Gonten is now available. I think -- my opinion would be that it would be reasonable to continue Mr. Hansen's testimony now that we're started on it, but we will advise by the Commission's preference.

CHAIRMAN FESMIRE: Why don't we go ahead and finish his introduction, and when we get to a convenient stopping point we'll go there?

Q. (By Mr. Brooks) Okay. You may continue, Mr. Hansen.

A. So some of the conceptual models for input -- this kind of goes more toward that soil side of it -- what sort of pit are we trying to -- in our models? Well, we have two basic conceptual models.

One, a release from an unlined pit or a pit where the liner has been destroyed during closure. And this is a common occurrence. It's typical to have two feet of soil cover placed on the waste, and basically no liner because it has been destroyed during that closure procedure.

The two feet of soil cover with the poor vegetation, for the modeling purposes we used poor vegetation. What does that mean? That means about a 25-percent coverage. It could be more, it could be less. Some pit sites don't grow anything, and some may grow more. We used what could be typical for this modeling.

The other basic conceptual model is a release from an on-site deep-trench burial. Of course that's what we're proposing in the rule. This would have four feet of soil cover, again with poor vegetation, a line on the top of the waste, the waste itself, a liner on the bottom of the waste. And I put in parens, "and sides". We can model that directly by stating that there will be no runoff from the bottom of that liner.

Q. Mr. Hansen, I want to interrupt you at this point. Are you familiar with, or have you reviewed the materials that were submitted by Dr. Stephens?

A. Yes.

Q. And have you studied the concept of closure in place as that is explained in the industry committee's proposals and in Dr. Stephens's materials?

A. Yes.

Q. Mr. Hansen, do you believe that there is a significant probability --

MS. FOSTER: Object.

MR. BROOKS: I don't know what grounds.

MS. FOSTER: I'm sorry, it's leading.

CHAIRMAN FESMIRE: Well, this is foundation --

MS. FOSTER: I'll let him, okay.

CHAIRMAN FESMIRE: Are you going to withdraw the objection or --

MS. FOSTER: Yes.

Q. (By Mr. Brooks) Mr. Hansen, do you have an opinion as to whether or not, if a pit were closed in place in the manner described, there would be a significant probability that the liner would be compromised in the process?

A. Yes.

MR. CARR: I couldn't hear the question, I'm

sorry.

CHAIRMAN FESMIRE: Mr. Brooks, would you --

Q. (By Mr. Brooks) Okay, the question -- to repeat the question, and it may not be exactly word for word --

CHAIRMAN FESMIRE: Would you like the court reporter to repeat -- to read back the question?

MR. BROOKS: Court reporter read back the question, very good.

CHAIRMAN FESMIRE: Apparently it was a long question.

MR. BROOKS: It was.

COURT REPORTER: "Mr. Hansen, do you have an opinion as to whether or not, if a pit were closed in place in the manner described, there would be a significant probability that the liner would be compromised in the process?"

CHAIRMAN FESMIRE: Is that --

MR. BROOKS: Thank you.

CHAIRMAN FESMIRE: Continue, Mr. Brooks.

Q. (By Mr. Brooks) And I believe the witness answered yes; is that correct?

A. Yes.

Q. And when you say yes, that could be construed two ways, because I asked you do you have an opinion? So literally what you've said now is, you do have an opinion,

and what is that opinion?

A. That opinion is that during the closure procedure, using heavy equipment, heavy equipment where it's necessary, such as bulldozers, backhoes, for the closure of these pits, this is a piece of plastic susceptible to tearing and ripping, especially when you have involved heavy amounts of soil and pushing a heavy amount of soil over that plastic, is susceptible to tearing or ripping.

If you use a backhoe to mix material with the pit contents, it's very difficult not to touch that liner as your -- that material in mixing, in trying to mix that material, that is, the soil and the pit contents.

Q. Now, would it be -- You've also stated the deep-trench burial procedure that is described in the Commission's -- in the Division's proposals, correct?

A. Correct.

Q. And do you believe it would be substantially more -- is it -- do you have an opinion as to whether or not it would be substantially more likely -- or whether or not it would less likely that the liner would be compromised in the case of deep-trench burial?

A. I do have an opinion, which is that it would be less likely to be compromised with a deep-trench burial, as proposed in our rule.

Q. And why is that?

A. Because the material will be -- the original pit material will be treated, and that treatment might include mixing with soils so it's not dripping wet, for one thing, and it will be somewhat stable as it's carefully placed into a trench.

Q. Mr. Hansen, if a pit were closed in place, do you have an opinion as to whether or not the operator would be able to tell whether the liner was breached at the time of closure, or before closure?

A. My opinion would be that the operator could not tell if that liner had been breached prior to closure. That's why in our proposed rules we do have provisions for removing that waste and testing under the former pit.

Q. And does the deep-trench -- I'm sorry, does the closure in place allow for that?

A. No.

Q. Okay. Now I believe your next slide starts into your diagrams of your modeling procedure; is that correct?

A. Yes.

Q. Would this be a convenient place, then, to break to allow Mr. van Gonten's testimony to be concluded? As convenient as any?

A. Sorry. As convenient as any, yes.

MR. BROOKS: Okay. Mr. Chairman, in deference to

what the Commission's articulated preference was, we would suggest at this time that Mr. von Gonten be called back to the stand to complete his cross-examination.

CHAIRMAN FESMIRE: Okay. Is there any objection?

MR. HISER: No objection.

MR. CARR: (Shakes head)

CHAIRMAN FESMIRE: Okay. Let the record reflect that there's no objection and that Mr. von Gonten will retake the stand.

CHAIRMAN FESMIRE: Mr. von Gonten, I need to remind you that you've been sworn in this case. You understand that?

MR. VON GONTEN: Yes.

CHAIRMAN FESMIRE: That you're still under oath.

MR. VON GONTEN: I'm still under oath.

GLENN VON GONTEN (Resumed),

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Okay. Mr. von Gonten, you were asked a question by Ms. Foster, I believe, about the industry representatives on the task force when you were on the task force?

A. Yes, sir.

Q. And you indicated that there were four industry representatives. And she asked you if there was a representative from IPANM? Do you remember that question?

A. Yes, sir, I remember that question.

Q. Could you give me the names of the industry representatives who were on that commission?

A. I'm going to embarrass myself. I can remember three of the four -- maybe. One moment. Alan Alexander represented ConocoPhillips. We had a representative, and I'm drawing a blank on his name, from Marbob. We had Mr. John Byrom representing D.J. Simmons. And I believe the fourth member of industry was representing Devon.

Q. Okay. Do you happen to know if ConocoPhillips is a member of NMOGA?

A. I'm not familiar with the membership rolls of industry organizations.

Q. Okay. Do you know if Marbob is a member of IPANM?

A. I don't know, I believe that they are.

Q. Do you know if Marbob is a member of NMOGA.

A. I don't know the answer to that.

Q. Okay. And Mr. Byrom with D.J. Simmons, do you know if D.J. Simmons is a member of IPANM?

A. I believe that -- I don't know if the company is. I believe Mr. Byrom is a member of -- a vice president at

some level in IPA.

Q. Okay. So at least with respect to IPANM, while they may not have been there officially as representatives, they are -- they were represented, were they not? IPANM was represented on the --

A. Yes, Mr. Byrom is, I believe -- my understanding is that he is a member of IPANM.

Q. Okay. Talking about deep-trench burial, is that preferable to disposal at a regulated facility?

A. Chairman Fesmire, I don't believe that it is.

Q. And why do you feel that way?

A. Well, there's a couple of negative impacts from an environmental perspective that we are not comfortable with.

One is the total cumulative effect. If you have a -- last year we were talking in the range of perhaps 1000 or 1200 wells being drilled. To have 1000 or 1200 deep-trench burials, if they were to start doing that in the northwest -- my understanding is, they don't do that customarily in the northwest -- would result and continue a process of where the oilfield waste is left on site, scattered throughout the entire state. I had a slide that I think it's an unknowable number of its, because there could be multiple pits associated with each drilling location and each production well.

Q. Okay. So in your opinion, it's preferential to bury the waste in managed, regulated facilities, rather than in individual deep-trench burials that won't be regulated in the future; is that correct?

A. Absolutely, Chairman Fesmire, that's my personal and professional opinion.

Q. Okay. Turning to your Exhibits 18-12 and 18-13, you represented that these were at the housing development in Hobbs. What was it called?

A. I believe the abatement plan is referred to as Shell Westgate.

Q. Westgate. The building in Exhibit 13, you indicated that that -- one of the reasons for that building to be there was to control dust; is that correct?

A. That was my understanding.

Q. Why the heck in New Mexico, in the spring, do you have to control dust?

A. I believe it was also necessary because of the organic vapors that were present at this site.

Q. So was -- the vapors were perhaps -- I want to be very careful of the word I use -- not beneficial to human life?

A. I believe that the remediation efforts were being hampered by the high volatile organic compounds that were present in the air, that they posed a danger to the

remediation team.

Q. Okay. What about the dust itself? Did that pose a danger to the remediation team?

A. I believe that ingestion of contaminated soil certainly could pose a risk.

Q. And that's why --

A. I don't know what the concentrations in the soil were.

Q. Okay. But you think that's why this facility was constructed the way it was?

A. I'm not intimate with the details of what this was, but it was an example of what could go wrong if a site is not disposed of and tracked appropriately.

Q. Okay. Now you were asked a question about correlative rights. You indicated that you weren't extremely well versed in the concept of correlative rights; is that correct?

A. That is outside my area of responsibility and expertise.

Q. And just because it's outside your area of expertise doesn't mean that it's not regulated by OCD, does it?

A. No, Commissioner Fesmire, it does not.

Q. In fact, that's one of the primary mandates of the OCD, is it not?

A. That's my understanding.

Q. And are the mandates of the OCD not to prevent waste, protect correlative rights, and protect human health and the environment?

A. I have heard that, but as I've testified I'm not intimately familiar with that section of the Oil and Gas Act.

Q. And your job focuses more on the -- protect human health and the environment, doesn't it?

A. It has to do with permitting surface waste management facilities, it has to do with investigation and remediation of contamination sites that are associated with oil and gas wells or oil and gas other facilities, including surface --

Q. Okay. Now Commissioner Bailey asked you several questions about enforcement and whether or not it's sufficient under the current rule. Do you remember those questions?

A. I do remember her comments --

Q. Okay.

A. -- Chairman Fesmire.

Q. Okay, I won't push it by attempting to argue that characterization.

Who's responsible for reporting violations of OCD rules?

A. Well, operators should report any violation of a rule to the District Office. If they become aware of contamination of groundwater, they're required to report that if -- if they're conducting an investigation or conducting a closure operation and they chase contamination, using that term, down to groundwater, they are required pursuant to the regulations to report that under Rule 116 to the Environmental Bureau Chief and submit a C-141.

Q. Okay. And are you familiar with the penalty structure in the Oil and Gas Act?

A. Chairman Fesmire, I am not.

Q. Okay. In your comparisons between the samples that the OCD took and the industry took, you said that the OCD announced at the task force that they would take these samples, that they would be going out in May and June?

A. Yes, Commissioner Fesmire, we made that clear to the members of the task force, that we have determined to answer some of the questions that were coming up not only from the outreach meetings but also from task force, that we would go out and collect samples to answer their question of what's in a pit?

Q. Okay. And you invited industry to accompany the inspectors who did these sampling events, didn't we?

A. Actually, I would have characterized it somewhat

differently from that, Chairman Fesmire. We announced that we were going, and we also pointed out that we could not vouch for access for members of committee. In other words, if operator A didn't want a representative from operator B on their site, it would be incumbent upon anybody going along to obtain permission from the location, in case there was a problem with that.

We felt that anybody who was accompanying us that was on task force per se, with me, with Mr. Alan -- excuse me, Mr. Alexander from ConocoPhillips came along, we thought that we would be able to say, We're out here with OCD and we are part of a task force, and that would answer any operator's questions that they had concerns about another operator coming onto their site.

Q. Okay. So you were accompanied at all these sites, were you not, by a member of industry?

A. For the ones in the northwest that I am familiar with, yes, sir, we were.

Q. And you split samples with them, if I remember correctly; is that --

A. I don't know that we split samples at every site. I think they ran out of sample jars on one location so they didn't sample everything. But actually, we collected the samples for them.

Q. Okay.

A. And they took soil -- if I remember correctly, they only took soil samples, they did not take fluid samples.

Q. Okay. Well, could they have taken fluid samples if they had requested one?

A. Yes, they could have. As long as the operator was willing to allow them to take those samples, yes, there was never a dispute. I remember Mr. Alexander frequently conversing with operators and getting permission ahead of time.

Q. Okay. And in fact, these sampling events were recorded, were they not?

A. We recorded our sampling events both photographically and in our field notes.

Q. Was anybody else taking pictures?

A. The industry photographed almost every move we made while we were in the pits.

Q. Okay. And now let's talk about the industry samples. When were those acquired, do you know?

A. The previous ones that we got, the split samples?

Q. Yes.

A. I'm not familiar with what days and dates they took those samples.

Q. Were they acquired prior to your sampling or after your sampling?

A. I believe they were acquired prior to our sampling, and I believe that we had some preliminary results that were presented to task force by Mr. Newman, who I forgot to mention was on the task force as a member of industry. And I could be confused exactly on the dates, but I remember that industry had presented some of their results, preliminary results, in a table before we actually went into the field.

MS. FOSTER: Mr. Chairman, I'm sorry, I hate to ask this question in terms of the witness's physical health, but could I ask him to keep his voice up, just because it's becoming difficult to hear? Thank you.

CHAIRMAN FESMIRE: You can hear me, though, good, can't you?

MS. FOSTER: Sorry?

CHAIRMAN FESMIRE: You can hear me, though, good, can't you?

MS. FOSTER: I can hear you fine, sir.

(Laughter)

Q. (By Chairman Fesmire) In terms of the industry samples, did you accompany the industry to acquire their samples?

A. No, we were not aware that they were sampling.

Q. Were you invited? I think you previously answered it.

A. No, we were not invited.

Q. Did you take a camera and record what was going on?

A. We weren't there, so I didn't have a camera and we didn't record what was going on during their sampling program.

Q. Okay. And did you have a say in -- or did you get a chance to analyze the samples that were taken by industry?

A. We had no opportunity to split samples and conduct a separate analysis.

Q. Okay.

A. And if I can correct one thing, because I looked out in the audience and I saw Mr. Newman is out there. I believe I said it was Devon. It was OXY who was the other -- fourth member of the industry committee, or the members of industry who were on task force.

Q. And I assume you don't know whether they were a member of IPANM or NMOGA?

A. I don't know the answer to that.

CHAIRMAN FESMIRE: Okay, I have no further questions.

Mr. Brooks, do you have a redirect of this witness?

MR. BROOKS: Mr. Chairman, very briefly.

CHAIRMAN FESMIRE: Okay.

REDIRECT EXAMINATION

BY MR. BROOKS:

Q. Mr. von Gonten, Mr. Carr asked you a question that, as I have copied it down -- something about when you were doing this sampling procedure, were you going out looking for problems? And I don't have written down what you answered to it, but were you going out looking for problems in the sense of trying to find places where -- pits where there were problems, so you could test there?

A. When we went out, part of our protocol was to describe the condition in our field notes of the pits and photographically document them. But the sites that we chose were, as I referred to, were primarily random based on the list of what the district had as a pending -- for a pending closure.

Q. And I believe you testified that in addition to your random identification of pits from lists, that you also selected some as, quote -- I believe this is a quotation from you -- targets of opportunity?

A. One case that comes to mind, if I remember correctly, we went to a pit and drove by a pit that we noticed, and when we went to the pit that we were in that area to sample, I don't believe we did for one reason or another. I can't remember if it had already been closed.

But coming back, we decided that we would stop by this one pit that had not been on our list and we had just driven by on the access to the pit that we did not sample.

Q. Was there only one pit that was not identified from the list?

A. Mr. Brooks, there might have been another one that I think we decided on in the field, that we -- the first day, if I remember, the first two or three pits that we went to had already been closed, and there was no opportunity to sample except the closed field, and that was not what we were trying to do. And I think we decided at one point that we had driven by one operating rig, that we would try that one because we were coming up short, we were zero for three at that point, and we wanted to get a sample in that day.

Q. Now what exactly do you mean by targets of opportunity then? In what sense --

A. In this particular case -- the two cases I guess I'm remembering are ones that we may not have had on our list, but we decided on drive-by that that looked like an appropriate pit. It was not one that we even knew what the operator was. We had no preconceived notions about it. We were in the field with our district inspectors and we, you know, conferred and said, Well, this looks likes a pit that we could sample.

Q. Did this refer to the type of pit that it was, or did it refer to the existence of violations at that pit?

A. It just referred to the pit. We were not going out to -- on a drive-by you can't tell if there's any violations, so we selected the site without -- We didn't go to a site and say we were going to sample this site because we see a tear in the liner. Once we got to a site and saw that either there were fluids in there, or we were looking to take a fluid sample or for -- it had dried sufficiently for us to take a solid sample, then we would take that sample, for the --

Q. Thank you. Well, I don't mean to cut you off. Did you finish your --

A. I was finished.

Q. Okay. I have written down here slide 6, and I failed to write down slide 6 of what exhibit, so... Well, it appears I may have made an incorrect notation, so I won't pursue that.

But I will ask you, generally speaking, there was some conversation about a site where there appeared to be a condition where water could have gotten under the pit liner. Do you remember that?

A. There were several photographs that we presented that showed a problem with what we refer to as run-on and runoff due to inadequate berming.

Q. And in your opinion, Mr. von Gonten, does the runoff -- does the run-under of water, under the pit liner, create environmental problems, even if that water has not been inside the pit?

A. Not necessarily, that would just be surface runoff. It could contain what's referred to as rigwash, so there could be, you know, some contamination from it. But it depends on what side of the -- if you're on the rig side and you have run-under so that it's going underneath the liner, then potentially you could have a problem. If it's located on the other side from it, then it would just be having surface drainage issues, and it would just be what was in the surface runoff.

Q. Okay. Mr. Hiser asked you a question about, could not a prescriptive standard over-regulate and under-regulate at the same time, if I correctly understood his question. Do you remember that question?

A. I remember the question, but I did not take it to mean at the same time, but either over-regulate or under-regulate.

Q. Okay. Does the exception procedure that's provided in the proposed rule provide some safety nets, you might say, against a regulation over-regulating?

A. Mr. Jones will be testifying in detail on those provisions, and that's my general understanding, but I'm

not intimately acquainted with the details of the exception process.

Q. Thank you. You were asked a question about, did you present science for cumulative effects, and I believe you said that you did not. What did you mean by that?

A. We have conducted no systematic, comprehensive survey of cumulative effects. We observe that with more than 99,000 wells in our database, and presumably those wells were all -- or the majority of them were associated with at least one or more pit, and that up till this date we've been allowing on-site disposal, either as practiced in the northwest or practiced in the southeast, the total cumulative effect, then, would be perhaps several hundred thousand pits distributed throughout the state, and the total cumulative effect on the environment really could not be calculated with the information we have at this time.

Q. While you did not attempt a project to calculate it, did you mean to suggest -- by saying that you did not present science, did you mean to suggest that cumulative effects is not a scientifically recognized concept?

A. I believe that the cumulative effects are a scientifically recognized concept. I would think that it would be a very difficult program to implement. I would really wouldn't know where to start, you would have to make so many assumptions.

But I think our point was that we know that there are impacts, either if there are pits that are closed properly or improperly, as Mr. Hansen will be testifying, that it's a matter of when release occurs, not if a release occurs.

Q. Now you testified about the 77 constituents that you identified in the pits; is that correct?

A. Yes.

Q. And you were asked a number of questions about those that were naturally occurring, and I believe that you gave some figures. And what I want to know was, how many of those 77 constituents are ones that you would find naturally occurring at the surface, as opposed to naturally occurring in the subsurface?

A. Well, that could only be determined on a case-by-case basis, but I believe that that would be limited to the metals, that you would not expect the surface to be -- normally -- you could in an oil seep by TPH and DRO and GRO, but other than an oil seep, a naturally occurring oil seep at the surface, you would not expect to see any hydrocarbons.

You would expect to see, of course, some of those things where parameters such as pH -- not really a constituent, but the metals would certainly be a constituent that might be present in the surface soils.

Q. Now the concentrations of those constituents in the subsurface might well be very different from what they would be at the surface; would that be correct?

A. That is correct.

MR. BROOKS: I believe that's all my questions, Mr. Chairman.

CHAIRMAN FESMIRE: Okay. Mr. von Gonten, I missed -- on the back of one page I forgot to ask you one question.

EXAMINATION (Continued)

BY CHAIRMAN FESMIRE:

Q. Would you turn to 12-37?

A. Yes, sir.

Q. Okay, there are -- in the OCD database that I believe you and Mr. Price referred to earlier it was said that there were approximately 400 groundwater contamination cases caused by pits in the database acquired since 1992?

A. That is what Mr. Price said.

Q. Okay. And since these are all -- How old are these cases?

A. These are all, I would say, less than two years old. Certainly these are ones that I have dealt with, and I've been here a little more than two and a half years, here being with OCD.

Q. Okay, and these aren't included in that group

that are on the website, are they?

A. I don't know if Mr. Price included these with that or not. You can see that we have three of them listed as new cases, so they haven't been entered -- at least those three have not been entered into the database. The one with 1Rs and the AP numbers are in the database.

Q. Okay, and these are all pretty much verified, drilling-pit caused, groundwater contamination cases; is that correct?

A. Chairman Fesmire, that is correct.

Q. And these have been identified since when?

A. These have been identified to OCD, as I discussed, by either verbal -- there should be verbal and written notice of an impacted groundwater, and these have been in the past, say, two years, two and a half years.

Q. Two years, two and a half years. Okay, are these the only cases of groundwater contamination caused by drilling pits that OCD is aware of?

A. I believe that's correct, that we have actually documented, and we have not been aware of any in the northwest. There's a number of production pit cases, but we don't have an example of a drilling pit, and that's primarily because I don't think we've been analyzing for constituents at closure.

Q. Okay. So my next case [*sic*] is, all of the

drilling pits that ever contaminated groundwater have only occurred in the last two years?

A. I would not agree with that statement, but I could not provide any information from the database that would show that there were others. Again, no data does not mean that there was no problem.

Q. Okay. So why, if you know there are 400 cases of groundwater contamination caused by pits, why don't you know if they're drilling pits or disposal pits? Temporary or permanent pits, is a better way to --

A. I'm not certain the correct answer to that. Our database may just list it as a pit, and it may not be something that you can query by.

I do know that we had the pit survey that came out in -- I believe it was '97 -- and there were some 11,900 or so pits that were reported in that survey. That survey did specify what type of pit it was. Overall, there were some exceptional reports of surveys that were submitted with incomplete information. But I believe about 10 to 15 percent of the information wasn't really specific as far as location, and some greater percentage, I suspect, didn't specify what exact kind of pit they were.

Some pits, of course, have a rather long history. They may start off as a drilling pit and be used for a workover pit and then finally as a production pit.

CHAIRMAN FESMIRE: Okay. Mr. Brooks, did you have anything else on that single line of questioning?

MR. BROOKS: No, Mr. Chairman, I do not.

CHAIRMAN FESMIRE: Are there any other questions on the -- Mr. Carr?

MR. CARR: Just a couple.

FURTHER EXAMINATION

BY MR. CARR:

Q. If you look at the slide that is on the screen right now, Mr. von Gonten, were those particular pits reported to you by the operator?

A. Yes, after some encouragement from our District inspector.

Q. But each of these was reported. And I though yesterday when we saw this slide for the first time, you indicated that these were still under investigation?

A. What I mean by reported is, they complied with the requirement to inform the Bureau Chief -- and I'm his designee so I can take a verbal notification -- and have submitted a C-141 to the Santa Fe office and to the District office.

Q. So you could do what? I'm sorry, I couldn't hear you.

A. I'm sorry, I'm not speaking up.

These have been reported verbally, as -- in

accordance with the reporting requirements of Rule 116, and these operators have also submitted a C-141, which is a written form documenting the facts as they knew them at the time that they submitted that form.

Q. And my question is, I thought previously it was stated, not that these were proven cases of groundwater contamination but that you were still investigating?

A. We have not completed the investigation. If I can go through there, the two 1Rs, those are ones where there has been a documented exceedence of background, but it has not exceeded the chloride standard for WQCC.

The -- however many, there was one, two, three, four, five abatement plans, AP056 through AP070. We understand from the information submitted to us by the operator that these have exceeded groundwater quality standards. In this particular case these were chlorides, and there may be other contaminants but they have exceeded the chloride standard at 250 milligrams per liter.

The three new cases are pending, and we haven't made a determination whether they should be addressed as a remediation plan, or we have sufficient information to call that an abatement plan.

Q. You go out and look at those; is that part of what you do?

A. No, mostly it's paperwork review. It certainly

is something that I will do, but I don't necessarily go to every site.

Q. You were -- In response to a question from the Chairman, which I don't know if that's recross or not, but you were talking about 400 -- many pits that you have discovered that pose threats to groundwater. My question is, aren't these pits within the OCD's enforcement authority?

A. Their pits -- most of these things are being dealt with, as Mr. Price said, by either a remediation plan or an abatement plan. It is -- When you say enforcement, I think of something along the lines of an agreed compliance order. Certainly they're covered by our regulations, but it's not my experience that we take formal enforcement action. If we call in a remediation plan, I don't consider that enforcement.

Q. In response to questions from Mr. Brooks, you testified that when you were doing your sampling, that it was basically a random sample; is that fair?

A. About as random as we can make it, given the practicabilities of actually driving around a large county.

Q. And before you went to the district to sample wells, I think you testified that the sites were actually selected by the District offices?

A. No, sir, if I gave you that impression I was

mistaken. They compiled a list of all the pits that they knew of that were available, and there was no selection of any sort of pit until we showed up the morning that we went out. It took a couple hours to come up with a short list of sites that we would visit.

Q. And the purpose of this inspection, though, was to determine whether or not there were -- and correct me if I'm wrong -- constituents or -- of concern in pits; isn't that right? Isn't that what you were looking for?

A. Mr. Carr, I have a real aversion to the term constituents of concern, after working with hazardous waste in various --

Q. And I have few terms, you know, that I can --

A. -- RCRA Superfund -- but I would say that our goal was to answer the question that we heard repeatedly at the public outreach. People wanted to know what was in that pit. So we were there to characterize the pit contents, both the solids and the fluids, using a fairly broad brush analytical program. It could have been more comprehensive.

Q. And if I understood your testimony, you were looking at pits that were actually ready for closure; isn't that right?

A. They were on the list that I guess the District office maintains so that they have the opportunity to go

out if they have sufficient resources, which is a problem, to see if -- to inspect a pit during closure.

Q. And so these were pits that were no longer in use by the industry

A. Actually, I should restate that. I think that we also had a list of active drilling pits, because we did take some samples in the northwest from active drilling pits where they were -- not yet released the rig, the rig was still on site and they were operating in some fashion, either doing completion or drilling ahead, I'm not certain.

Q. You called this judgmental sampling. That was your term, I think?

A. That is an EPA term.

Q. All right, I just want to be sure I'm not getting terms that you're --

A. They're talking about --

Q. But because of that, because of that, I believe you testified that you're not able to draw statistical conclusions from this data?

A. It is not something that if you were submitting this in an EPA program, that you would come in and be able to do any statistical analysis of a -- for several reasons. One -- primarily being that's it's not judgmental. You can, of course, run averages on it all day long. But it is judgmental sampling, and a lot of times judgmental sampling

is used to select an obviously visually contaminated spot. The whole pit, basically, was wet, even when we were taking sludge samples or soil samples, so there was no real distinction between one area and the other.

As I mentioned, we started off underneath the site where it looks like the cuttings were being discharged into the pit, and worked our way around from there.

Q. But you're not trying to reach conclusions as to how much of any particular constituent would be in how many pits or in what concentrations?

A. This was a general survey to answer the question of what's in the pits.

MR. CARR: Thank you.

CHAIRMAN FESMIRE: Ms. Foster?

MS. FOSTER: Yes, thank you.

FURTHER EXAMINATION

BY MS. FOSTER:

Q. Mr. van Gonten, I just wanted to ask you just a few questions concerning the cumulative effects discussion that you had earlier with Mr. Brooks on redirect. Remember that discussion?

A. Yes, I do.

Q. I believe that you stated that there was no survey of cumulative effects that was done?

A. We have not conducted an sort of research program

on cumulative effects.

Q. Okay, so then it's your personal opinion that due to the expected amount of drilling, particularly in the northwest, that there will be a cumulative effect, commonly used terminology, with so many pits if they're left in location -- on location?

A. I believe that's true for the future, and I believe there has already been a cumulative effect from decades of oil and gas operations in the northwest particularly, but over all the state.

Q. All right. Well, for what's already happened do you have any scientific basis for your comment?

A. Yes, we know that they have drilling pits, we know that they were not closed in a manner that would be protective of the environment. Mr. Hansen will show it's a matter of when a release occurs, not if a release occurs.

Q. All right. And is that your personal opinion, or is that the OCD's opinion?

A. Ms. Foster, that is both my personal and professional opinion, and it is OCD's position in this case.

Q. All right. Do you have any science to back what you just said in terms of the cumulative effects in the northwest?

CHAIRMAN FESMIRE: Ms. Foster, I think he's --

that's been asked and answered, hasn't it?

MS. FOSTER: Well, I believe that he answered in his own personal opinion.

CHAIRMAN FESMIRE: No, the question before that, you asked him exactly the same question, and he answered it.

Q. (By Ms. Foster) Okay. So your statement that you know that there are impacts that you don't have any science to back up; is that fair?

MR. FREDERICK: Well, I'm going to object. It's the same question again.

CHAIRMAN FESMIRE: And counter to his prior testimony. I'll sustain that objection.

MS. FOSTER: Well, Mr. Chairman, I would controvert the statement that you just made. The statement that he knows that there are impacts, I believe, was made by him on redirect. Can I ask him about whether he made that statement?

CHAIRMAN FESMIRE: Okay, you can make that question -- ask that question.

Q. (By Ms. Foster) Did you make a statement previously that you know there are -- that you know their impact as it relates to cumulative effects discussion?

A. It is my personal and professional opinion that there are cumulative impacts, but we do not have

quantification of that.

Q. Now I believe that you stated -- in response to Mr. Carr's question, it was -- that the testing and sampling program that was done was only to determine -- to answer the question that was in the public hearing process -- the public meeting process concerning what was in the pits, correct?

A. That was it. There was also an issue at task force.

Q. And so you're really not really that concerned with the levels of the constituents, just what were the constituents? Correct?

A. Yes, I think we wanted to know the order of magnitude, but as I pointed out, this could have been far more comprehensive and I wouldn't represent it as being that definitive. However, it was comparable in scale, I think, to what EPA did as far as answering the question of, What is in that pit?

Q. And -- but the question wasn't, What are the levels of the constituents that are in the pits, that you had to find the answer to in your testing program, was it?

A. Our primary goal was to identify the constituents that were there. But we also wanted to be able to report and compare those concentrations that were detected to an appropriate standard for comparison.

Q. Okay. So I want to make sure that I'm getting what you're saying now correct. It was my understanding that when Mr. Carr was asking you questions, you told him that your sole responsibility was answering the question of what was in the pits. Now it seems that I hear you saying that the levels of the constituents in the pits seem to be important to you.

A. I don't believe I used the word sole responsibility. That was not our sole goal. Our goal was to go out there and identify it. And to identify it you have to quantify it, it had to be positively detected. And of course, with any complete report you're going to report what you analyzed for and the results, whether they were nondetect, and if they were nondetect what the detection limit was, and also the positive detection, what the concentration was of the positively detected constituents.

Q. Did I -- Did I hear correctly that -- based on the conversation you had with Mr. Carr, that you stated that this sampling program that you did was not complete enough that you could draw a statistical analysis from it?

A. That is correct.

Q. And that it was judgmental sampling?

A. That is correct.

Q. Okay. So would it be fair to say that in the constituents that you did find, that there might have been

others, or there might have been an issue with the sampling overall, statistically?

A. I don't believe I would agree with that statement completely. I think that there certainly probably are other constituents that we could have analyzed for. NORM, for example, a naturally occurring radioactive material. I'm sure that would have been detected at some level if we'd analyzed for it.

But the second part of your question was one that I don't think I agree with. We didn't have a problem with our sampling program.

Q. Okay, but you -- All right, "problem" might be too strong a word, then. But you -- this was considered judgmental sampling, it was not meant to reach the levels of academia.

CHAIRMAN FESMIRE: Ms. Foster, by my count, that's the fifth time you've asked the same question. Could you ask it in one final form and move on, please?

MS. FOSTER: Okay.

CHAIRMAN FESMIRE: I'll take that as a yes.

MS. FOSTER: I'm thinking. Thank you, sir. I'll just leave it at that. Thank you.

CHAIRMAN FESMIRE: Thank you, Ms. Foster.

Mr. Hiser, you said you had a question?

MR. HISER: Mr. Fesmire, yes, I do. And this is

just to clarify something that I guess I hadn't understood in the previous description.

FURTHER EXAMINATION

BY MR. HISER:

Q. Mr. von Gonten, when you went out to do the sampling you were looking for pits that would allow you get both a liquid and a solid sample; is that true?

A. Either that -- When I went to the northwest, we did not collect a solid sample and a water sample from the same site. In the southeast, they did -- in other words -- you saw the photographs. Some -- There may be fluids still in the pit. There's also an area that you can walk on and walk out and take a solid sample.

Q. And so we talk about -- and I think you said just recently that some of the pits still had the rig there, so they were not close to closure, but that the pits that would have a lot of liquid on them, that your understanding is that those would not be closing soon? The pits have to be dry before they're closed?

A. Yes, they certainly should be. They had shown up on the District's list and, you know, I didn't know what was in that pit or what the pit looked like before we drove up on location. When we would drive up on location, we would make a determination of whether we could get a sample. After the general -- the zero for three the first

morning, you know, we were very interested in actually getting some samples because we were coming up short, and we came up to sites that had already been closed.

MR. HISER: Thank you.

CHAIRMAN FESMIRE: Dr. Neeper, did you have any questions on redirect?

DR. NEEPER: No questions.

CHAIRMAN FESMIRE: Mr. Frederick?

MR. FREDERICK: I just have a couple.

FURTHER EXAMINATION

BY MR. FREDERICK:

Q. Mr. von Gonten, you remember a question about -- I think it was surface runoff underneath the liner?

A. From Mr. Brooks?

Q. Correct, I believe that's right. And did you testify that that's not a problem, or did I misunderstand that?

A. I believe what I meant to say is, it depends on which side of the rig you're on. If you're on the rig side, then you might be receiving rigwash, which should be diverted into the pit, in a properly designed pit. That's one of EPA's recommendations, to collect and contain rigwash.

If it was running underneath the pit or through a compromised liner -- and there should be, perhaps, a liner

around the -- laid on the ground around the drilling rig that's actually going underneath -- and going underneath the pit liner -- it may have contaminants in the rigwash.

Q. What if it's creating a void underneath the liner?

A. I think that it could also create a problem with the stability of the liner by undermining, let's say, the side slope.

MR. FREDERICK: Okay. No further questions, thanks.

CHAIRMAN FESMIRE: Mr. Huffaker, do you have anything? Notice, this time I didn't forget you?

MR. HUFFAKER: Nothing, Mr. Chairman. Thank you.

CHAIRMAN FESMIRE: Mr. Brooks -- Oh, I'm sorry, Commissioner?

COMMISSIONER OLSON: Just a couple -- I have just a couple questions based upon the latest answers.

FURTHER EXAMINATION

BY COMMISSIONER OLSON:

Q. In referring to Exhibit 12, page 37, and you said these are the cases that you have known about, were you here for the OCC hearings on Rule 50 several years ago?

A. Commissioner Olson, I was not. Excuse me, I should clarify that. We did start a revised pit rule in 2005 in October, November, December, and I was involved

with that. And if you're referring to the one prior to that in -- was it 2003? -- I was not involved with that.

Q. Would it surprise you that there was a couple cases that were brought to the Commission's attention then of groundwater contamination from drilling pits?

A. It would not surprise me that there was -- something was brought to their attention. I was unaware of those, though.

Q. Okay, because I don't think I notice them on this list.

Has there ever been a comprehensive investigation of groundwater conditions around drilling pits in New Mexico?

A. Not that I'm aware of. It's -- You mean an investigation whereby the Division determines that it will select a random number of drilling pits and go out and -- after closure, and do an investigation, something along those lines

Q. That's correct.

A. Not that I'm aware of, Commissioner Olson.

Q. And why is that?

A. Why has the Division not done that? I don't think I know the complete answer to that, but I'm sure that time and money resources would play a large part in that.

Q. And the cases that are listed here are ones that

have come to the Division's attention just because there was some kind of problem with those sites?

A. The ones that are currently listed as having a 1R are obviously in District 1. The abatement plans I believe are also all in District 1.

And most of these were brought to our attention because the District Inspector was present, saw a problem, and insisted that the operator collect samples and, to use his term, chase contamination down to groundwater due to primarily visual standing of the soil showing that there had been a release of fluids.

Q. So is it safe for me to conclude, then, that we don't know what the full impacts on groundwater are of drilling pits in New Mexico, we just know that it can occur as observed through the cases that you've presented here?

A. I believe that to be correct. I believe in many cases the perception has been, particularly in the northwest, that they drill with freshwater and the chlorides aren't a problem in the northwest. And so unless you see hydrocarbons standing in the soils, then there is no reason to require the operator to conduct an investigation at closure. I think the more data you collect, the more problems you will identify.

Q. Okay, and I think I have just one other question. You were talking about the cumulative impacts under some of

the recent questions here, and that's one of the reasons for the 100-mile criteria that's being placed in for prohibiting burial pits. But I guess, is that a little in conflict? Because it seems that the Division, under certain circumstances with deep burial, is confident that those won't cause groundwater contamination, correct? Under the deep-burial scenario that's presented in the -- in Rule 17?

A. Commissioner Olson, Mr. Hansen will be talking, I think, further about the modeling of this.

We think that if closure occurs -- A deep-trench burial is a package closure. In other words, it's not just one standard but the combination of standards for the liner and for what is -- stabilization and solidification, and you can do both -- and the proper construction of the trench and the proper liner material and testing at closure, that -- we feel comfortable that most of these sites are not going to pose a problem that -- within the immediate future under those terms, I'm afraid.

But we also believe that all of these unlined -- or excuse me, these lined deep-trench-burial disposal sites are not as good as a disposal in an OCD-permitted or -approved landfill, which would probably have a double liner and leak-protection system for the new ones.

We think that it's possible to perhaps improve this -- to use standards, plus the operator could use perhaps even a double liner, if it's a small place, or do enhanced stabilization and solidification. I think that it would be safe, but I think that it is still waste being left in place, and it's not as desirable.

Mr. Chavez will be talking about pollution prevention. And, stealing a little of his thunder, I would point out that recycling and re-using is better than treatment, and treatment is better than disposal.

Waste minimization is the best way to reduce the impact on the environment, and if you can recycle and re-use it then that's better. If you can't do that, then the next best thing is treatment. And the final option is disposal.

And we think that a -- disposal and a -- a properly designed landfill is better than disposal in a deep trench.

Q. Well, I think I would agree with you that it's more desirable, but I was kind of wondering about the -- If you look at cumulative impacts, if the Division believes that the deep-trench burial is protective of groundwater, then it's done not as much for the purpose of protection of groundwater quality than it is for the re-use, recycling...

And I agree with the idea of having less places,

either -- where you know it is, and you can control it better.

I think that's -- It is desirable, but I just wonder if what -- the statements on the cumulative effects, that it's not really for reasons of groundwater protection; it may be for other reasons, such as having a proliferation of disposal sites.

A. Commissioner Olson, I think there could be more than one reason for doing something, and I think that's a very good reason.

We do not want to see a large number of disposal sites. We already have more than we really should for the environment, but in the future I think that the fewer number of disposal sites that we have, you know, generally, it's better for the environment.

COMMISSIONER OLSON: I think that's all I have.

CHAIRMAN FESMIRE: Okay. Are there any other questions of this witness? No?

MS. FOSTER: No, thank you.

CHAIRMAN FESMIRE: Mr. Brooks, you can --

MR. BROOKS: Very good, I would ask that this witness be allowed to stand down, subject to being recalled pursuant to agreement of parties for the limited purpose of examining any discrepancies in revised Exhibit 16.

CHAIRMAN FESMIRE: That's my understanding. Do

you have a time limit on how long it will take you to evaluate that?

MS. FOSTER: Mr. Commissioner, we did receive 16 -- Exhibit 16 on paper, but I was told at lunchtime that we're not going to be able to get it digitally until tomorrow morning. So I believe you gave us until the end of the week to try and determine whether we were going to need to.

CHAIRMAN FESMIRE: Until we adjourn on Friday, this witness will be subject to recall.

MS. FOSTER: Okay, thank you.

CHAIRMAN FESMIRE: Okay?

Mr. Brooks, I guess we can --

MR. BROOKS: Then ask Mr. Hansen return to the stand.

CHAIRMAN FESMIRE: Mr. Hansen, would you take the stand --

MR. BROOKS: Well, or other --

CHAIRMAN FESMIRE: -- take your position?

MR. BROOKS: You can remain seated there, but you will be subject to examination.

May it please the Commission?

CHAIRMAN FESMIRE: Pardon, sir?

MR. BROOKS: May it please the Commission?

CHAIRMAN FESMIRE: It may, sir.

EDWARD J. HANSEN (Resumed),

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BROOKS:

Q. You may continue, Mr. Hansen, with your technical presentation.

A. Okay. So we left off at conceptual models, and we had two basic conceptual models. And I want to further subdivide the second one -- that's the deep-trench burial -- as proposed in the rule, into good or poor installation of the liner.

We've got a cross-section of a typical in-place disposal, unlined, and you'll see here we have about two feet of sandy loam cover, and about 12 1/2 feet of waste, and about 50 feet of sandy loam for vadose zone.

Now of course a very important input parameter is precipitation that's going to come down on top of this unlined pit. And what we want to obtain is, what's going to come out of the bottom of that pit? And that, of course, would be the output -- the HELP output, which we put in as the MULTIMED input.

Now this modeled area demonstrates that a release from the pit going down to the groundwater -- the groundwater represented by this blue line -- into the

groundwater, and that is going to be our MULTIMED output.

So the HELP is from the surface down to the bottom of the pit, and the MULTIMED is to the vadose zone, 50 feet of vadose zone, which is our proposed-rule distance.

Here you can see that I have depicted some black squiggles through the waste. That represents that other scenario of an in-place closure. Even though it has this pit that's lined, even though the pit was lined at one time after closure it's going to be virtually nonexistent because it will be -- up in the waste or source, because it's so badly torn that it will not provide any protection.

One note, you can see that I have 12 1/2 feet of waste, and that might be making this seem pretty thick. I tried -- and this is one of those sensitivity issues -- I tried five feet, which might be more typical, but it leached ever so slightly more. Just to be impartial, we try to make everything on a playing field that -- on a playing field that's equal. So we used 12 1/2 feet, just leached slightly less.

You'll note I have depicted here precipitation, and that's important as far as how much water might be -- you know, precipitation, might be uptake through the roots of these plants. And of course the HELP model takes that into consideration.

One thing I'd like to note is that we did not -- we did not model what is going to come from, say, this dry area over here down to groundwater. This is something we did not model. What we're interested in is what's coming out of the bottom of the pit.

What the modeling showed is that after about 25 years or -- in the Permian Basin, anyway, you've got a pulse. We used a 50-year pulse because we have 50 years' worth of data. It could be much longer -- it would be at least 50 years that if this moisture could go down through the vadose zone, maybe in about 50 years it will be at this point, and then in about 75 pears, 80 years, it gets down to groundwater.

This is an important point. This material is moist. It's not this dry area over here, it's moist. So we're starting out with a moist waste, and it's going to have water available with contaminants, of course, in it, that could come down through the vadose zone into groundwater.

COURT REPORTER: Excuse me, Mr. Chairman, could I ask that the microphone be turned a little ways to point towards the witness? Thank you. I also need to get Mr. Brooks' questions with that microphone.

THE WITNESS: So now we have our other conceptual model, which is the on-site deep-trench burial, of course,

is what we're proposing in the rule for -- I'm sorry, a prescriptive on-site disposal method. Here we have four feet of loam cover. You'll note that we've gone from sandy loam to a loam cover. This indicates the prescribed method of closure in the proposed rule in that the loam cover has to be compacted. This material has to be compacted. As a matter of modeling, if you go from sandy loam to loam, that would account for that compaction.

Again, we use the 12 1/2 feet. The 12 1/2 feet was actually derived from what a thousand cubic yards of waste would fill in a typical trench size. Areal dimensions, we used approximately 25 by 75 feet for a typical trench. So that represents 12 1/2 feet of waste. Of course, that waste is pit contents and soils after treatment.

Again, a very important parameter, that precipitation. The -- This material is still going to be moist, and it's going to be lined, it's going to have the sides lined, it's going to have an overlap. But in addition to that overlap, there's going to be this additional geomembrane. We refer to it as the umbrella in the task force, but that's what we're referring to, that additional geomembrane.

Given that you have a good installation -- and we've talked about -- I mentioned there was a good and a

poor installation. The HELP model can have input parameters for if you're going to have a -- what's considered a good installation and what could be considered a poor installation. The difference between those two, we're assuming from the factory there will be possibly, say, one pinhole per acre. Of course this is less than an acre, so maybe you wouldn't have that coming from the factor, but typically you could have as much as one pinhole per acre coming from the factor in that material, the geomembrane, that is.

Also, in addition, as you place the geomembrane you can have defects in the installation. That is typically seaming defects. For a good installation that might be as low as, say, four defects per acre. I should mention, the way the HELP model views that is, a very small hole that's about a tenth of a millimeter. So it's small. But for a poor installation we would say about 10 defects per acre. And I'm using these numbers from studies done in the development of the HELP model.

The additional factor that the HELP model can use is whether it's -- what it calls a good or a poor installation, and that refers to how well this plastic is going to be in contact with that base. In our rules, of course, we specify that this base be smooth, and that will help in that contact, maintaining a good contact.

Q. (By Mr. Brooks) Mr. Hansen, I wanted to ask a question on that subject. Have you reviewed the provisions -- the specifications for liners, for liner installation -- for liners and liner installation in the proposed rule?

A. I have.

Q. And do you have an opinion as to whether not if those specifications were followed, the liner would qualify -- the good-installation model for the HELP model would apply?

A. It would.

Q. Thank you. You may continue.

A. So we can assume, because this -- keep in mind this is moist, this cover won't be perfect, this liner won't be perfect. So we can start -- from the day they put this material into the liner, we can assume that there will be some leakage. Of course, it will be small, but nevertheless there will be some leakage because there's bound to be some head developed on that bottom liner. And if there's any defects in that liner, then there will be some amount of leakage.

Again, we take the HELP output and put it into the MULTIMED as an input, and go through the 50 feet of the vadose zone with the MULTIMED and develop a MULTIMED output.

COMMISSIONER OLSON: May I clarify something? I

guess it might be -- in the exhibits we were given, in 21 there's -- it looks like two things that are the same, page 8 and 9, appear to be the same?

THE WITNESS: Yes, if you'll note -- and it might be clear if you can look on the screen -- I just put those two depictions of a lined -- first of all, an unlined pit, and then this is lined, after closure, after -- they're pushing in dirt, mixing up dirt with the pit contents, and you'll see these black squiggles represent what was formerly a liner at the bottom of this pit, but now is no longer at the bottom.

COMMISSIONER OLSON: Okay, I see that, but I think your page-numbering is off from the page-numbering we've got here, because when you were showing your page 9, it's our page 10.

THE WITNESS: I think I know why that is. I think because this particular version starts off with page zero, and the exhibit starts off with page 1, so...

COMMISSIONER OLSON: Okay, thank you.

THE WITNESS: So what are our outputs for the HELP? That's the annual average of release rate. And of course that's at the bottom of that in-place disposal conceptual model, and we called that no liner, and you'll see that again here as we go.

Some of the output numbers were -- in the Permian

Basin were about 1.2 inches per year, in the San Juan Basin about .5 inches per year. You might ask why the difference, when actually there's even a little more precipitation in the San Juan Basin. Well, that is explained through how that precipitation falls. In the precipitation you can have one inch of rainfall on the back of another one-inch rainfall, the next day it could be a half-inch rainfall. If you have that much moisture, that will have a chance to seep down through the vadose zone before it can be evaporated.

In the case of the San Juan, you have a situation where you might have a quarter-inch rain, with a half-inch rain, with a quarter-inch rain. This gives the soil moisture holding capacity a chance for evaporation and plants to transpire that moisture.

The other output we have through the bottom of a poorly installed liner -- and that's in the -- of course, through the deep-trench burial, we call that poor liner. And some of the numbers there, .19 inches per year, .12 inches per year -- and I might just mention, these numbers -- just for your reference, this is about 30 millimeters per year, this is about 13 millimeters per year. I think we're about 5 or -- yeah, maybe more. About a little over 3 millimeters per year, just to give you an idea.

Through the bottom of a well-installed or good

liner of the deep-trench burial, we have results in the Permian Basin of about 2.3 millimeters per year or about .09 inches per year. And on the San Juan Basin we had about 1.5 millimeters per year, or .06 inches per year.

Q. (By Mr. Brooks) Mr. Hansen, are these figures that are in inches per year, are these what you're calling the infiltration rate?

A. That's correct.

Q. Okay. Now is this conceptually similar to what Dr. Stephens in his materials calls the recharge rate?

A. It is.

Q. Now when you converted these into millimeters per year -- Well first of all, let me ask you, this is an output, is it not, from the HELP model?

A. It is.

Q. It's not an assumption that you've made?

A. That's correct.

Q. Now I believe you covered it but not with specific reference to Dr. Stephens' work. Do you have an opinion as to why, at least with the unlined -- at least with the unlined pit, the HELP model generates an infiltration number considerably larger than what Dr. Stephens identifies -- at least for the Permian Basin, identifies an infiltration rate considerably larger than what Dr. Stephens calls the recharge rate?

A. Yes, as I pointed out, we did not use the recharge rate to model. We used an infiltration rate, and that is, How much is going to go -- how much water is going to go into the vadose zone?

This is going to be a moist area, as compared to a typical used recharge area. This is a moist area. Moisture -- the more moisture you have, the more water can be available to go down through the vadose zone. With more moisture that's available to go down through the vadose zone, the faster it can go through the vadose zone. And that will be apparent when I present the results.

Q. Okay, continue.

A. So we have no liner, poor liner, good liner as the output values. Then of course, again, this was put into the MULTIMED to model how that moisture moves through the vadose zone.

Some of the input values for the MULTIMED -- I have listed here just some. There are many more, but just some of the more interesting ones. And again, I'll go through that concept. Some are more sensitive than others.

One I will say that it's not that sensitive, and I'll explain that a little bit more, might be, say, the saturated hydraulic conductivity. And I know that has come up in the past couple days. We used a 1 times 10^{-3} centimeters per second, and we use that as a kind of a

typical worst case. It's certainly not the worst, there might be some sandier areas in this state, but we used that as a typical kind of worst-case scenario.

And I guess I've had the dubious honor to review many soil testing results in my career in my career over at the Environment Department in the Solid Waste Bureau. This is an important testing parameter that's required for closures of small landfills and so on, and of course the siting of newer landfills.

So I've seen many soil testing results for porosities and the moisture contents and hydraulic conductivities. And what's very typical in New Mexico is sandy loam to loam. We chose kind of the -- more on the faster side, that is, the -- or the higher side. That is, the -- for hydraulic conductivity we used sandy loam.

But all of that said, this is not a particularly sensitive parameter. And the reason that is, the millimeters per year that we're talking about, I think the highest we were talking about is 30 millimeters per year, compared to the hydraulic conductivities for this type of material, thousands of millimeters per year, it makes very little difference, that certainly that material has the capacity to accept 30 millimeters per year moisture.

I'll give you an example. I -- trying to model, just changing the hydraulic conductivity of the vadose zone

by 300 percent, increased it by 300 percent, and that had an impact on the output by about 7 percent, as far as increase in years -- I should say decrease in years, before it reaches the groundwater.

So the difference between 300-percent increase and a 7-percent decrease in time is what I would say is a nonsensitive parameter.

The most sensitive parameters are that infiltration rate. That's really what we're concerned about. How much is going to come out of those pits or trenches? And that's where the use of the HELP model comes in.

Another sensitive parameter, of course -- and these two -- the first two, the infiltration and the 50 feet of vadose zone, that really goes to how long is it going to take for a release to reach groundwater? That of course includes the type of soils. It's not as critical as that distance.

Another sensitive parameter, of course, is the chloride concentration of the release, and that really goes to how much is going to be in the groundwater. For the Permian Basin we used a few different concentrations and -- see it as more how it affects the concentrations, but we used 10,000 milligrams per liter, 50,000 milligrams per liter and 100,000 milligrams per liter, initial

concentrations of chloride.

Of course, we use chloride as what's called a conservative constituent, that is, it will go through the vadose zone relatively unimpeded with the soil moisture as it goes down through the vadose zone.

For the San Juan Basin we used a range of 1000 milligrams per liter, 10,000 and 15,000. This of course was the highest number reported in the industry committee's reports, but -- and I don't even think the soil flow is 1000, but we used 1000. They give a broad range.

CHAIRMAN FESMIRE: Okay. Mr. Hansen --

THE WITNESS: Yeah.

CHAIRMAN FESMIRE: -- would this be a good place to take a 10-minute break? If we're going to go till six o'clock, I'm planning on taking a 10-minute now and a 10-minute break after about another hour and 15 minutes. So is there any objection to going ahead and taking a 10-break now?

Okay, with that we'll take a break, and we will reconvene at exactly 3:15 by that clock.

(Thereupon, a recess was taken at 3:05 p.m.)

(The following proceedings had at 3:17 p.m.)

CHAIRMAN FESMIRE: Let's go back on the record. Ready? Let the record reflect that it is now 3:17, that we will continue with the direct examination of Mr. Hansen.

Let the record also reflect that Commissioners Bailey, Olson and Fesmire are all present. We therefore have a quorum, and we'll continue.

Mr. Brooks?

Q. (By Mr. Brooks) Thank you. Mr. Hansen, you may continue with your technical presentation.

THE WITNESS: Thank you. So we're talking about chloride concentrations in the release, and we were using, especially for the Permian Basin, a rather high number. 100,000 milligrams per liter was our highest number for the initial concentration. And why were we using a high number?

And there's no mention of that number in the proposed rule, but I want to point out that that 100,000 milligrams per liter equates to 5000 milligrams per liter using the synthetic precipitation leaching procedure for the SPLP analysis, which is in the proposed rule.

Now why is that such a difference, between 100,000 and 5000? It's the way the test method is designed. And there's been some discussion, but what you actually do is take a 100-gram sample and mix it in with two liters of this leaching solution. And two liters of water is basically -- at standard temperature and pressure is 2000 grams. So the difference between 2000 grams and 100 grams is a 20-to-1 difference.

And so for an initial starting out with a pit content of 100,000 milligrams per kilogram, in this case we take 100 grams of that and put it into the 2000 grams of leaching solution, and you would have an analysis of 5000 milligrams per liter in that leaching solution.

And the fact that chlorides are very soluble, so we could assume that almost all of the chloride could be available for the solution -- for the procedure.

Now, so why did we use 5000, or, if you want to look at it another way, 100,000? Well, the 5000 milligrams per liter, if you tested that, that ensures that there's going to be a minimum treatment of the highest typical chloride concentration of pit contents that occurred in New Mexico.

We saw some -- tested results, 200,000, 400,000 milligrams per kilogram. If you treat that material, that pit contents -- and typically, that's going to be adding some soil that will dilute that -- those high numbers, the 200,000, down to 100,000 if it's just, you know, a 1-to-1 dilution of soils to the pit contents.

So that if we have this 500,000 -- sorry, 5000 milligrams per liter, using the leachate precipitation procedure, then we're -- can be assured that at least there's some minimal treatment. Wanted to make sure it's not dripping wet and -- as it goes into the deep-trench

burial. And it will be geotechnically stable as it goes into that deep trench.

This, of course, is the standard. That 5000 milligrams per liter, using the SPLP, is the standard that has to be met before you can put something into a deep-trench burial.

This should not be a problem for most pit contents. There might be a very rare case where that wouldn't be -- where that couldn't be passed with a 1-to-1 dilution, but you could always add more soil to stabilize that contents and treat it, as we say, to get down to this 5000 milligrams per liter of chloride, using the SPLP.

The SPLP is a standard analytical method for waste disposal. Keep in mind, there are other constituents of concern in the pit contents, for example, hazardous contaminants.

Why is that important? Well, the SPLP extraction must be performed for those constituents as we have proposed in the rule, and if it can meet those -- and I'll explain more as we go -- then we should be protective of groundwater for those other constituents.

Another side note is that the testing has to be done for these other constituents, so there would be no additional cost for the chloride analysis.

There's been some talk about TCLP, SPLP, which

procedures should we use?

The TCLP, the toxicity characteristic leaching procedure, which is, of course, EPA -- and I should mention, it's part of a series of test methods from EPA called SW-846. This is one of those test methods, number 1311, and that's a single-batch extraction. Again, that's 100 grams of sample into 2000 grams of water or leaching solution, and that's used as -- what was -- the original concept was for a mismanagement scenario in which potentially hazardous waste could be co-disposed in with municipal solid waste landfills.

The -- a TCLP uses in its leaching solution like acetic acid and a -- sodium hydroxide, and this simulates more what would be in a municipal solid waste landfill.

Of course, it was -- I mean, its primary use is to classify -- and I think that's been testified -- it's to classify waste as characteristically hazardous by definition under federal and state hazardous waste regulations.

Of course, hazardous waste cannot be placed, by regulation, federal and state, into a municipal solid waste landfill, so it's important that we have some test method to determine what is considered hazardous. And even if it is considered hazardous, to go to a landfill, a hazardous waste landfill, it still requires some treatment before it

can be land-disposed. And that's where TCLP comes into place, and that's a good use of that particular test method.

But on the other hand, SPLP -- which is what we, of course, have in the proposed rule, the synthetic precipitation leaching procedure, and that's test method 1213 as called out in our regs, in the proposed rule -- is again another single-batch, as I explained, but it's more for rainfall in a monofill environment.

Of course, what is a monofill environment? That is exactly what we're talking about with this pit contents mixed with soils. That is a single type of waste. In municipal solid waste landfills they have all kinds of different wastes. So that's the difference between what might be in a municipal solid waste and, of course, what we're focused on with this particular proposed rule.

The similarities between these two test methods, both again use that 20-to-1 dilution, both are relatively short time frame. You put your sample into the leaching solution and shake it overnight and come back the next day and analyze the constituents in the solution.

Both tests may overestimate or underestimate certain constituents. Examples of underestimating, if I underestimate chromium and maybe overestimate barium, neither test can accurately predict mobility or

bioavailability. That's not the intent of either of these tests.

Q. (By Mr. Brooks) Now Mr. Hansen, I believe another witness testified to something similar, and there was some skepticism expressed. Would you explain why those tests are not good predictors --

A. Yeah.

Q. -- of mobility or bioavailability?

A. I guess another way to look at it, this -- these test methods have been described as gross predictors of these two things, and I'll explain more what I mean.

Gross prediction would be -- okay, there's -- you run this test, and it has in the leaching solution a particular concentration, but it doesn't say how much will go through the vadose zone, doesn't tell you how much it can be attenuated or, in the case of bioavailability, doesn't say how much a particular species might take up this particular constituent that you're testing for. So that's -- you can say it's a gross predictor, but not an accurate predictor.

And what it all comes down to, the MULTIMED output. And of course, that's the chloride concentration over time at the bottom of the vadose zone and in the groundwater.

Here we have a graphical depiction of the results

from the modeling, and I'll start out -- and note -- note, starting out with 10,000 milligrams per liter, initial concentration release out of the pit -- I say pit, and trench. Here's an unlined pit or a pit that's been closed where the liner has been compromised, and we call that -- we call the no-liner scenario.

Of course, note the scale. And this is up to over 6500 milligrams per liter of chloride, is what we're predicting.

Now you note down here this pink line. This very pink line is the chloride standard. That's actually -- that line is actually set at 200. Well, as we've heard, the actual standard is 250 milligrams per liter. We're assuming that there's going to be naturally occurring 50 milligrams per liter of chloride in the groundwater to begin with.

What we're not depicting here is that it could be much higher naturally occurring, it could be 200 milligrams per liter, it could even be more, and that could be naturally occurring or that could be from contaminant source, to start out with, that this pit may be over, or groundwater containing that naturally occurring or chlorides from some other source.

So we start out with 200. Here represents about 80 years where it will start to exceed the chloride

standard. Here we have -- in yellow this graph represents that poor liner, in green we have the good liner.

One thing I should mention. With this modeling we did not take into account the lifetime of that liner material. We're assuming from day one it will start to leak a little but, but we didn't -- but we assume through the lifetime of this model that it would be -- remain intact. That may not actually be true, but assuming that the liner will stay intact, for a poor liner we're going to exceed the standard in about 450 years and about 1000 years for the good liner.

Q. Okay. Mr. Hansen, if you assumed, as Dr. Stephens does in his materials, that the liner would completely fail due to degradation in 270 years, then how long would it take -- what effect would that have on the time frames for the poor liner or the good liner, respectively?

A. What that would assume is that for 270 years you would have a release similar to what we have shown here in green. After the 270 years, then we would assume that it would behave and release similar to what we have here in red. So 250 years plus -- sorry, 270 years plus approximately 80 years with the time it would start to exceed the groundwater.

Q. And how many years is that?

A. That is approximately 350 years.

Q. Okay. Out of deference to Ms. Foster, I didn't undertake to suggest the answer to the arithmetic.

MS. FOSTER: Thank you, Mr. Brooks.

Q. (By Mr. Brooks) You may continue, Mr. Hansen.

A. Okay. So here we have 50,000, and you'll note again the scale. Similar pattern, assuming a good liner and a poor liner. What -- of course, for the rule, this is the rule that we're having for the deep-trench burial, not the poor, but rather the good. And of course, with no liner, a dramatic increase in concentration.

Again, starting out at 100 you see a similar pattern, but note the concentration levels are going much higher. Again, the concentration not affecting the time so much as what is going to be available to contaminate groundwater. It's about 1000 years with a good liner, assuming that the liner does not degrade.

Q. Now in each of these examples, the -- in each of the previous examples, the concentration was considerably in excess of the groundwater standard, correct?

A. That is correct.

Q. And then you go on to your next slide, the concentration is relatively low, much lower, and it does have an influence on time in that context, does it not?

A. Yes.

Q. But not where it's high?

A. Right. And of course, you'll note that we've gone from the Permian Basin to the San Juan Basin, and here we have the deep-trench burial with a poor liner and the deep-trench burial with a good liner. But with no liner, even as low as 1000 -- again, we haven't seen that low, but it will still exceed standards in about 150 years.

Q. Now I asked you a little bit ago if a pit that was lined, and the liner -- with the type of liner and the liner installed as prescribed in the proposed rule, would that correspond to a good liner?

Now I'll ask you the same question with regard to a deep-trench burial that was lined and closed in accordance with the prescription -- the provisions of the proposed rule. Would that be a good liner?

A. That would be a good liner.

Q. You may continue.

A. Here, again in the San Juan Basin, starting out at 10,000, note the scale. Even with a good liner we're still exceeding the standard. It is taking longer, but it does eventually exceed the standard.

And I should point out, why are these going up and back down, up and down? This is -- and again, I'll just reiterate that I've used a 50-year pulse, assuming that the pit or trench wouldn't leak for 50 years. Of

course, it could leak for much longer, but --

Q. Now this assumes -- Let me ask you -- ask it in another form. What does this assume about the source of the contamination? Does it assume a continuous source or a limited source?

A. Well, as I say, it is a continuous source. But we, for modeling purposes, have limited it to 5 years.

Q. Okay, continue.

CHAIRMAN FESMIRE: Mr. Brooks, may I clarify something? When you say a continuous source for 50 years, you mean that -- this is deep-trench burial, you're not adding anything to the burial, it just continues to provide head and fluid source to the interface for 50 years?

THE WITNESS: If I may -- Back up. After -- in the case of the Permian Basin, like I say, this is where a release might be in 25 years. Given 50 years, maybe it will be at this point. What we've done for the model is actually shut off that source, and so now here at 50 years that pulse is at this point.

And then again, with no additional source from -- moisture source from the pit at 75, 80 years, it's down here contaminating the groundwater. So I would say we're -- we, the OCD, would be conservative in that, we're not assuming that it's going to be a continuous source for 1000 years but rather just 50 years. It's my professional

judgment it could be much longer, but for modeling purposes we have 50 years' worth of data, we use the 50-year pulse.

Q. (By Mr. Brooks) Okay. So I may have used the wrong term. What I was trying -- what I was suggesting here is, does this model assume that this pit is closed, there are no more contaminants being introduced into it?

A. Yes.

Q. And when you say it is a continuous source, does that refer to the fact that there is a continuous source of water to transport the contaminants down in the groundwater, for precipitation?

A. Well, we used -- of course, the HELP models that -- they have the 50 years' worth of data. But given that 50 years' worth of precipitation on top of this closed pit or trench, it's going to have that moisture available at the bottom of that pit or trench to act as a pulse going down through the vadose zone.

Q. Okay, but the precipitation -- presumably there will always be precipitation --

A. Yes.

Q. -- coming to that site?

A. That's correct.

Q. But at some point eventually, would the precipitation eventually wash out all the contaminants so there would be no more contaminants from that source?

A. Eventually.

Q. You don't have an opinion as to --

A. I don't have -- I mean, I --

CHAIRMAN FESMIRE: Objection. Obviously the answer would be extremely speculative if the witness is having such difficulty answering it.

MR. BROOKS: I believe the witness has already said that.

CHAIRMAN FESMIRE: Yeah.

Q. (By Mr. Brooks) You may continue, Mr. Hansen.

COMMISSIONER OLSON: I guess I still have a question along that line. Are you saying, then, that the -- I'm just trying to make sure I understand your conceptual model. When you talk about a 50-year source, are you saying that you'll have 50 years of migration out of the source?

THE WITNESS: Yes.

COMMISSIONER OLSON: Across the interface from the liner into the soils?

THE WITNESS: Yes.

COMMISSIONER OLSON: Okay.

THE WITNESS: Well, I -- I guess I -- as I've stated before, it would be my professional judgment that could be much longer.

COMMISSIONER OLSON: And then from there it acts

as a pulse through the soil?

THE WITNESS: For modeling purposes, for these modeling purposes. That's why it's going up and back down. It could go up and --

CHAIRMAN FESMIRE: So --

COMMISSIONER OLSON: Okay.

CHAIRMAN FESMIRE: -- is it a function of the volume of the contents?

THE WITNESS: It would be a function of the volume and, of course, concentration.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: 15,000, maybe that's high. Similar pattern. Note the concentrations. We wanted to cover all the bases, so we used a higher concentration here.

I have side-by-side graphs, and this is what you've been looking at, 50 feet to groundwater. That's in the proposed rule. But we looked at other depths, and the difference between the no liner, poor liner, good liner, that has to do with that infiltration rate. But that other sensitive parameter, of course, is the depth to groundwater.

So here we use 10 feet. Notice a dramatic increase of concentration and increase of time before it exceeds the standard -- I should say decrease of time before it exceeds the standard.

We compared it to 20 feet to groundwater. Again, it's quite a bit higher than what we have with the 50 feet to groundwater.

We went the other way, we went from 50 feet to 100 feet to groundwater, and even at 100 feet we still have exceedence of the groundwater standard, but it does take more time.

Q. (By Mr. Brooks) Now Mr. Hansen, it looks like, from these slides, that -- Well, let me ask you this.

Is it true that these -- that the predicted time for the contamination to exceed the standard is roughly a linear function of the distance to groundwater?

A. It is.

Q. Now I want to go back for one question to your 50-year assumption. Is that a rather conservative assumption in terms of predicting how much contamination will occur?

A. It is, yes.

Q. And so if you used a higher figure, it would predict more contamination?

MS. FOSTER: Objection.

CHAIRMAN FESMIRE: Overruled.

Q. (By Mr. Brooks) If you used a higher figure, would it -- large number of years, would it predict more contamination?

A. Sorry, can you rephrase?

Q. In the sense of it being a conservative figure, does mean it's -- does that mean that the 50-year assumption predicts the probable contamination on the low side?

A. Fifty feet?

Q. No, 50 years. I'm going back to your 50-year assumption.

A. Yes, yes.

Q. Okay, thank you. Continue.

A. 350 feet to groundwater, we're still seeing -- in the Permian Basin we're still seeing exceedence of the groundwater standard by -- it does increase of time. Note that for no liner it's still a relatively short time, and we'll get into that with a table I have.

For the San Juan Basin we're still seeing exceedences with the no-liner scenario. Even with a good liner, we're still seeing exceedences at 10 feet. It does decrease that time.

Twenty feet, again, decreasing that time before we'll have an exceedence even with a good liner.

The other way, again, for the 100 feet -- using 100 feet, and we're still seeing some exceedences. Actually, this just exceeds the good liner.

And 350 feet in the San Juan Basin, good liner,

does not exceed -- of course, that's assuming 50 milligrams per liter. If there's any other chloride concentration, it would bring this pink line down. But assuming 50 milligrams per liter natural background, it doesn't exceed the standard.

But what I'd like to point out is that with a no-liner situation you're still going to see that standard, even at 350 feet, in not that long of a time.

So to summarize, releases from unlined pits contaminate groundwater about 10 times faster than releases from deep-trench burials.

Releases from unlined pits contaminate groundwater about six to 11 times more than releases from the deep-trench -- on-site deep-trench burials.

And releases from deep trenches with lines that have poor installations contaminate groundwater about two to three times faster than -- and about four to -- two to four times more than releases from the good installations at deep-trench burials.

In-place of the unlined pits, that contents will contaminate groundliner in about 80 years. Of course, that's assuming 50 feet to groundwater.

In-place unlined pit contents will contaminate groundwater exceeding the chloride many times over in about 200 years.

And on-site deep-trench burial -- that's the lined trench -- those pit contents will contaminate groundwater at about 1000 years. Of course, as I mentioned, that's assuming that the liner will stay intact for about 1000 years.

To go back to our depth to groundwater, I have a table. This, of course, column on the left, we had the 10 feet, the 20 feet, the 50 feet, 100 feet, 350 feet. And some of the rationale, why did we choose that, didn't choose it?

Well, 10 feet, of course, that's about as close as we'd want to get to groundwater. Then we -- of waste disposal.

Twenty feet, that's the current practice in the San Juan Basin.

Fifty feet is the current practice in the Permian Basin for -- this is for closures, now, pit closures. And OCD guidelines, and some -- about a 20-to-1 dilution if you have a good liner. And I'll explain more on that coming up.

A hundred feet was a comment by some of the task force members; this would be acceptable to OCD.

350 feet was an industry comment to OCD.

So we wanted to try all of these different depths. Of course, the median is 50 years, the median

years before groundwater is contaminated about 80 years for the in-place or unlined disposal, and about 1000 years for the deep-trench burials.

We selected a centroid, and that's for the 50 years. And so to obtain a centroid, a good way to do that is to do a geometric mean. So if you take a geometric mean of these numbers, these depths to groundwater, we've got 51 feet for the years of -- until groundwater contamination. We've got 78 as -- of course, 80, and about 1023 versus 1000 for the deep-trench burial. This indicates to us that this particular range that we modeled was appropriate.

Let me explain a little bit more about the 20-to-1 dilution. Releases from on-site deep-trench burials with, of course, a good liner, have about a 20-to-1 dilution to groundwater at 50 feet. This is what the -- our modeling predicted.

Releases from deep-trench burials with good liners have less than 20-to-1 dilution at less than 50 feet. And an example of that, of course, is, 20 feet, it was about a nine-to-one dilution.

The SPLP happens to be a 20-to-1 dilution, and that can account for this 20-to-1 dilution in the vadose zone from 50 feet to groundwater.

And I have a bunch of words up there, but, as they say, a picture is worth at least 98 words. So what

I'm depicting here is that we have a hypothetical example, and that is, arsenic in this deep-trench burial, these pit contents as it goes into the deep-trench burial, is going to test out at, say, 0.1 milligrams per liter. That would be our test result.

Now actual arsenic penetration may be two milligrams per liter per kilogram, or even higher, but say we've got a test at 0.1 milligrams per liter. That's, of course, 20 times less, due to the analysis method.

What can we assume from that is that here we're not going to have a lot of dilution for precipitation, so we can assume that there's going to be about 2 milligrams per liter coming out of this liner, available for transport to the vadose zone.

What does the model predict? Well, it predicts that we're going to have about a .01 milligrams per liter, or 20 times less, and that's because it's going -- as it travels through this vadose zone, it's going to be diluted about 20 times.

What's the significance of that? Well, the proposed rule, of course, is that the Water Quality Control Commission 3103 constituents have to be tested using the SPLP. If it can pass that standard, in the pit contents, then we can be assured that -- through this prediction, that the groundwater will not exceed the standard of the

Water Quality Control Commission 3103 constituents.

Conclusions. And I'll just state for the record, these are my professional judgment --

Q. Let me interrupt you just a minute to -- Excuse me, just -- this is just to clarify. Because you allow -- The rule allows a 5000 SPLP concentration in on-site buried waste, correct?

A. Of chlorides.

Q. Chlorides, right.

A. Yes.

Q. So you are not -- well, that -- To what concentration in the waste does that -- to what actual concentration in the waste does that correspond?

A. 100,000 milligrams per kilogram.

Q. But -- and to what level will the dilution reduce the chlorides if it's 50 feet to groundwater?

A. 5000.

Q. So the chlorides themselves may exceed the 250 milligrams per liter groundwater standard as is predicted by your previous graphs, correct?

A. That is correct.

Q. So when it is -- for what purpose, then, are you saying that this dilution protects the groundwater?

A. For the other 3103 constituents that an operator would be required to test for under the proposed rule.

Q. Thank you, I just wanted to make sure that everyone was clear on that. Continue.

A. As I was saying, these are my professional judgment conclusions.

In-place disposal -- that's the unlined pits -- should not be allowed in order to prevent groundwater and soil contamination.

On-site deep-trench burials -- that's the lined deep trenches that would be allowed -- should be minimized and only allowed if the trench is lined in order to prevent groundwater and soil contamination.

Liners should be properly installed to prevent failure. I think we saw the difference between the two and the four.

On-site deep-trench burials (lined) should be allowed only if there's at least 50 feet to groundwater from the bottom of the trench, and that goes to the 3103 constituents, other than chloride.

On-site deep-trench burials (lined) should be allowed only if chloride concentration of the pit contents is less -- and I should say -- correction here -- this should be at 5000 milligrams per liter or less.

SPLP should be used for the other constituents of concern to ensure protection of groundwater and soils.

Q. Okay. Mr. Hansen, then, you have gone through

your Exhibit Number 21, and could you describe again for us what is Exhibit Number 20?

A. Number 20 is a compilation of output files that lists the output values that I've depicted graphically in my Exhibit Number 21. It also lists the input values that were used.

Q. Okay. Mr. Hansen, were Exhibits 19, 20 and 21 prepared by you or compiled by you from published sources?

A. Yes.

MR. BROOKS: Mr. Chairman, we will tender Exhibits 19 through 21 in evidence.

CHAIRMAN FESMIRE: Any objection?

MR. HISER: No objection.

CHAIRMAN FESMIRE: Bruce?

MR. FREDERICK: (Shakes head)

CHAIRMAN FESMIRE: Okay, let the record reflect that there was no objection raised. Exhibits 19, 20 and 21 will be admitted into the record.

MR. BROOKS: Pass the witness.

CHAIRMAN FESMIRE: Ms. Foster?

MS. FOSTER: I would defer to Mr. Hiser and Mr. Carr --

CHAIRMAN FESMIRE: Okay, is that a --

MS. FOSTER: -- at this time.

CHAIRMAN FESMIRE: -- is that a permanent

deferral, or is that a --

(Laughter)

MS. FOSTER: I'm sure everyone in this room wishes that were the case.

CHAIRMAN FESMIRE: Now don't all you rush the podium. I guess you got the short straw, Mr. Hiser; is that correct?

MR. HISER: I got the short straw.

CHAIRMAN FESMIRE: Okay.

CROSS-EXAMINATION

BY MR. HISER:

Q. All right, Mr. Hansen, just a couple of questions for you. In one of these you discussed your opinion about the TCLP and the SPLP test; is that correct? I don't remember which slide that was.

A. That's correct.

Q. And you elaborated on that slide, did you not, that in fact the SPLP and the TCLP test are gross predictors of at least mobility in the form of leachability?

A. That is correct.

Q. And why would we be interested in the concept of leachability if we're assessing the environmental impacts of a source as it relates to groundwater?

A. Well, of course, what we're interested in is how

much concentration of that leachate -- or what the constituents in that leachate -- what could be available in that leachate source as it moves down through the vadose zone. Again, it can't actually predict it, but it's --

Q. But basically, is that -- is what you're saying that if the material doesn't leach, hence doesn't enter the water phase, it's less likely to make it down into the groundwater?

A. That's right.

Q. As between the TCLP and the SPLP model, which is generally considered to be the more aggressive in terms of leaching constituents? Is that the TCLP or the SPLP?

A. Well, I hate to put it this way, but it's going to depend on which constituent you're testing for. I don't have any examples off the top of my head, but I know there are some differences.

Q. But it's going to depend upon the relative affinity for organic versus an inorganic acid, perhaps?

A. That could be one factor.

Q. Okay, thank you. Now, you testified that the 50-year source is a conservative pulse, correct?

A. Correct.

Q. What happens to that same source over time, after the moisture that it started with is lost, because the moisture is departing from that source, correct?

A. Correct.

Q. And it's --

A. Or it's being replenished with the precipitation.

Q. So are you assuming, then, that the replenishment rate from the precipitation exactly equals the loss rate through the bottom of the liner?

A. For a deep-trench burial?

Q. For a deep-trench burial, let's say.

A. It's going to be similar, yes.

Q. Okay. And did you examine whether there would be a change in that seepage rate over time?

A. Well, as I say, we only have a 50-year database to work with, so no.

Q. I see. And one of the things that struck me as you were giving your example -- Let me see if I can find my notes for this. I think it was your first illustration. You testified about the fact that water moves faster if the soil is damper, versus if the soil is drier; is that correct?

A. That is correct.

Q. And did you start with the soil under the pit being in a damp or dry state?

A. Well, compared to, of course, the waste, I would say in a dry state.

Q. Did you use the same dryness for the surrounding

area?

A. Yes.

Q. Okay, so that's how you did your modeling?

A. Right.

Q. How did you determine your K_{sat} value?

A. Well, as I discussed, I had the opportunity to review many test results, soil test results, across the State of New Mexico in my capacity as an employee of the Solid Waste Bureau. And in that capacity, for compliance with solid waste management regulations it's necessary to observe or review -- actually observe some testing of the hydraulic conductivities, and -- for -- in that range for -- throughout New Mexico, it ranges from sandy loam to loam, silty loam. But we first chose a little higher K_{sat} value. As I stated, it wasn't a particularly sensitive value.

Q. To K_{sat}?

A. Right.

Q. Now you said that a lot of your experience had been based when you were working, I think, at the New Mexico Environment Department; is that correct?

A. That is correct.

Q. And that you were doing small landfill closures?

A. Yes.

Q. And are small landfills typically located in

areas similar to those where you would find pits, or would they tend to be in moister areas?

A. Boy, small landfills are throughout New Mexico, so I would say they're definitely in the same spots.

Q. So you don't -- your experience, then, was not that the small landfills tended to be more along the areas of habitation than out of it?

A. Well, there -- some are close to areas of habitation, but sometimes they try to isolate them and -- so they can be out in what you would consider areas of habitation.

Q. You gave an example, I think, in your last slide about arsenic, and I think that you were showing that in the context of how the SPLP test would be protective; is that correct?

A. That's correct.

Q. Now in this, did you assume that the arsenic would travel at the same rate as the water?

A. I did.

Q. Is that correct?

A. Well, again that goes back to the prediction of mobility for these particular types of tests, and it may not be correct for arsenic in that there may be other attenuating factors. So to be conservative, we were -- we can be fairly confident that it would probably meet the

groundwater protection standard.

Q. And so is it safe to say that as part of this modeling that you've taken a series of conservative assumptions and stacked them together to come up with the results that you're presenting to the Commission?

A. Well, again, I would say that we used conservative -- certainly used conservative, but I can't say we used worst-case by any means.

Q. But still, I mean, you've just told me in this discussion that not everything that's in place may necessarily leach into the water, which has an effect on its mobility. You've also told me that arsenic, for example, might adhere to the soil particles as it's going through. And so isn't there -- And I think that you talked that you chose a higher as opposed to a lower saturated hydraulic conductivity. So is this not a series of different things that are being added together as part of your conservative assumptions?

A. I would say that certainly we used conservative values, but nothing that wouldn't be in the real world, certainly nothing that we wouldn't typically see as far as where pits might be located.

Q. And how did you select the mixing zone depth in the aquifer, and what was it? Did you specify that?

A. Well, actually that was derived by the model. We

used -- typically used aquifer thickness of about 70 feet.

Q. Seventy feet?

A. Yes.

MR. HISER: Okay. That completes my questions for you. Thank you, Mr. Hansen.

CHAIRMAN FESMIRE: Okay. Ms. Foster, are you ready?

MS. FOSTER: Yes, thank you.

CROSS-EXAMINATION

BY MS. FOSTER:

Q. Mr. Hansen, I just wanted to go over some questions on your modeling. I noticed for the northwest area that Dulce was the weather station that you used for the information, correct?

A. That's correct.

Q. Okay, and is Dulce located inside the boundary which covers the Fruitland Coal outcrop, coal outcrop?

A. I don't believe so.

Q. All right, is it even included in the San Juan Basin?

A. Yes.

Q. Yes, it is --

A. Yes.

Q. -- included in the San Juan Basin? All right.

And do you know actually by mileage how far Dulce

is from San Juan -- or Farmington, I should say?

A. I don't.

Q. Okay. And what is the topography of Dulce, New Mexico?

A. Well, it's in a mesa valley, from what I've observed driving through Dulce.

Q. Is it -- okay, is it -- It's east of Farmington, correct?

A. That's correct.

Q. And is it along the same longitude and latitude as Farmington? A little bit north?

A. Approximately.

Q. All right.

A. Latitude.

Q. Latitude. And in terms of the humidity content over at Dulce, do you have any idea if it's greater or lesser than Farmington?

A. Well, humidity, I don't. I know it does -- it's greater -- of course, greater precipitation, annual precipitation average, than Farmington.

Q. Right. So if it has a greater precipitation average in Dulce, New Mexico, does that affect the soil porosity levels at all?

A. It shouldn't affect porosity levels.

Q. Does it affect the soil absorption rates at all?

I'm probably using the wrong scientific term.

A. Well, okay, I -- okay, I think I -- what I -- Why we chose these two reporting stations, one is that we had 50 years' worth of data to try to get, you know, a valid number to start with, something of a long-term set of data.

But both, of course, are on the eastern side, and both are on the wetter sides of those two respective basins. But we had to take what would be typical -- we didn't -- Like I said, we didn't necessarily take the wettest spot in the state, certainly, nor in those two basins. But we wanted to say, What would be typical? We know there might be some pits around Hobbs, we know they might be around Dulce, so that's why we chose those two locations, even though Dulce may have higher precipitation than, say, Farmington.

Q. All right. And would it be an accurate statement to say that there's probably less oil and gas drilling around Dulce than there is in, say, Farmington, New Mexico?

A. I couldn't say that.

Q. All right. So would it be safe to say, then, that the weather is another conservative assumption that you're making in your modeling?

A. Yes.

Q. All right. And do you know anything about the vegetation levels in Dulce, New Mexico, as it compares to

Farmington, New Mexico?

A. By my personal observation, I would say there's greater coverage in the Dulce area than in Farmington.

Q. And then another conservative assumption that you made in your modeling was the defect levels in your liners, correct? There was --

A. Well, actually, maybe we didn't go so conservative there. So that I can't -- I can't say that's what I would consider conservative.

Q. Okay. So then correct me if I'm wrong. The stitching numbers that you gave -- considered for a good installation was one pinhole per acre -- I'm sorry, four pinholes per acre, in terms of defects in installation, was what you would consider a good installation, and a poor installation would be 10 defects?

A. Yes.

Q. All right, and -- but you're not -- you're maintaining that that's not a conservative assumption that you made for your modeling?

A. Yes, right. Based on values that the HELP model provides -- and those again are actually based on empirical observations -- that's how I came up with these values. Ten is actually on the low side for a poor installation.

Q. Okay. But in terms of the defective -- the defects, there was an assumption made for your modeling

purposes at some point?

A. Yes.

Q. Yes. Now I kind of lost you in the discussion that you had with Mr. Brooks where you tried to clarify the 5000-milligrams-per-liter level for on-site deep-trench burial that's in the rule. That would be Section D.

Why -- do you know why -- or maybe this is an oversight, that under -- on the on-site deep-trench burial your chloride levels are reported at milligrams per liter, whereas in other parts of the rule they're reported at milligrams per kilogram?

A. Well, it has to do with the -- with the SPLP, you're testing the -- what you actually test is the leaching solution. So when you're testing the solution, your testing results or going to be in a mass per volume, and -- so that it's -- in this case, of course, milligrams per liter of solution.

Q. Okay, so I guess -- I'm not a scientist, I'm just a lawyer. Trying to figure out here, in terms of the complexity of the rule, what operators have to look at for testing responsibilities is chloride concentrations, correct?

A. Right.

Q. And is that a solid or a liquid, or a mixture?

A. Well, they'll, of course, be obtaining a sample

of solid. The laboratory will take that solid and put it into a liquid and report those results as constituents in a liquid.

Q. Okay. But then again, I'm sorry if I lost you. The explanation for -- for example, I'm just looking here at another section of the rule. Waste excavation removal has a 250-milligram-per-kilogram chloride concentra- -- allowable chloride concentration level. And yet on your on-site deep-trench burial section of the rule, again, it talks about a 5000-milligrams-per-liter concentration level. And maybe I'm just losing you on your SPLP explanation. Is it -- Is the operator required to do a different test for the on-site deep-trench burial, the SPLP modeling?

A. Yes.

Q. Okay, is that what you're saying?

A. Yes.

MS. FOSTER: Okay. All right, I don't believe I have any further questions.

CHAIRMAN FESMIRE: Mr. Carr?

MS. FOSTER: Thank you.

MR. CARR: No questions.

CHAIRMAN FESMIRE: Mr. Frederick?

MR. FREDERICK: I have several.

CHAIRMAN FESMIRE: Okay.

MR. FREDERICK: I was hoping I'd have longer to read, to organize them, but I'll do the best I can.

EXAMINATION

BY MR. FREDERICK:

Q. You were asked a question about assumptions. You made a number of assumptions to run your model. Is that standard whenever you're doing a computer model, that you make, and have to make, assumptions?

A. Yes, you want to try to mimic the real world as closely as you can, but you have to do some assumptions at least.

Q. And were those assumptions based on your best professional judgment?

A. Yes.

Q. Okay. Now when you look at the results -- and in general, your model predicts that a waste pit that's unlined will leach out contaminants faster to groundwater that's 50 feet below the pit than a lined pit with the same level of contaminants. Is that at all surprising to you?

A. No.

Q. Is it kind of a matter of common sense?

A. Well, I would say yes.

Q. Okay. And are you representing that this model is going to -- that every pit is going to follow this kind of gross model that you've put together, or are you just

trying to get an idea -- trying to give the Commission an idea of what's going to happen between lined pits, unlined pits and poorly lined pits?

A. Well, you're correct in saying -- of course, we want to present something to the Commission so they'll have an idea. The modeling and uncertainty, of course, is there. It could be -- come out much sooner or much longer, but -- Well, I say much. Three to five times either way. But -- So this is to give an idea. I could say -- for any particular site it's going to be exactly 80 years, I can't say that, but --

Q. Okay. All right. Now I'm going to ask a series of questions, and I'll just say pit. And if there's a difference between the unlined pit and the poorly lined pit and the completely lined pit or deep-trench disposal, just tell me.

I was curious about what moisture content you started out with those -- in the pits.

A. Well, the moisture content started out with approximately 28 percent. And if I can refer -- Yes, 28 percent.

Q. Okay. What's that? Why did you assume it was 28 percent?

A. Well, that's close to -- it's a little less than the field capacity of that particular material. In

accordance with the proposed rule, it has to pass the paint filter liquids test, which means that it can't be dripping wet. Field capacity is a way to express if something will be dripping wet. If it can pass that test, then it can go under our proposed rule into the trench.

Q. So that's the maximum moisture content --

A. That is the maximum.

Q. -- it can have? Okay.

And the infiltration, is that based on precipitation in the area, average precipitation in the area, or the rain gauge that you happen to use? Is it also based on the pattern of precipitation?

A. Yes.

Q. Okay. Now the concentrations you used in your model to start out with, did those match the field data?

A. I'm sorry, could you rephrase that so I --

Q. Sure. Mr. von Gonten collected some data, I understand, and tried to determine what was in a pit.

A. Right.

Q. What might be in a pit. Did the concentrations he found in his sampling, did those -- were those in line with your assumptions or not?

A. Well, they were certainly within the range that I represented here, also including data that we received from the industry committee.

Q. Okay. And the K_{sat} that you used, the saturated hydraulic conductivity, 1 times 10^{-3} centimeters per second?

A. Yes.

Q. Okay. And is that -- That's fairly representative of what you find in New Mexico in these areas?

A. Very representative, yes.

Q. Okay. And I want to go to your figures, and maybe you can put one on there that show the spikes with the unlined pit, the poorly lined pit and the good liner.

Now, where the in the groundwater are those concentrations in relation to the pit?

A. Those are approximately one meter away.

Q. Okay, downgradient, I take it?

A. Down, yes.

Q. All right. So one meter away, downgradient from the pit?

A. Yes.

Q. And I just want to clarify that this is a point. You're not suggesting that a -- say for the no-liner after about -- I don't know, about 100 years or 50 years, the contamination goes away, are you?

A. No.

Q. That's at that point that --

A. Yes.

Q. -- that the plume, in fact, passes downgradient?

A. Yes.

Q. Did you do any modeling of how far it passes downgradient, as its terminal extension?

A. No.

Q. Okay. And I -- just for my clarification, when you put the waste in the pit and it's 28-percent moisture and you've got infiltration coming in, do you just allow that to drain for 50 years? Is that what you're simulating?

A. Yes.

Q. Okay, and then you turn it off after 50 years?

A. I turn it off.

Q. And when you say conservative assumption, you know, that word means different things in different contexts. And so when you say conservative, are you always meaning you're going to overestimate a parameter, so I overestimate the impact to groundwater, or do you mean it different ways in different contexts?

A. Well, generally we're going to take what would be a typically worst-case scenario, I don't want to say worst. So in this context it would be how -- you know, parameter that contamination would come out sooner than later.

Q. Okay. So conservative usually means things

coming out sooner than later?

A. Yes.

Q. Okay. And would it be conservative --

A. If I could add to that, there were some assumptions that we did not make, some other conservative assumptions that we did not make, that aren't reflected here, such as, the liner could degrade in less than 1000 years.

Q. Okay. Would it be a more conservative assumption to assume that the wastes when they were buried were saturated?

A. Yes.

Q. Would it be a more conservative assumption to assume saturated conductivity of 10^{-2} centimeters per second?

A. Yes.

Q. Is that an unheard-of saturated conductivity in the soil?

A. No.

Q. Okay. Would it be a more conservative assumption to assume greater concentrations of chloride, and would greater concentrations be unheard of?

A. It would be more conservative, and it's not unheard of.

MR. FREDERICK: Okay, that's all I have.

CHAIRMAN FESMIRE: Okay. Dr. Neeper, did you have any questions of this witness?

DR. NEEPER: Yes, we have a few questions.

EXAMINATION

BY DR. NEEPER:

Q. I want to clarify just a few numbers that you gave us. You had stated that the initial soil in your pit was 28-percent moisture. Is that a volumetric or a gravimetric?

A. Sorry. In the waste it's 28 percent, the waste going into the pit -- or, sorry, into the trench, and in this case also into the pit, scenario -- that waste is 28 percent, and that's volumetric.

Q. Volumetric?

A. Yes.

Q. And another number has caused confusion, and that is the 5000 milligrams per liter that is a hypothetical outcome of the SPLP leach test. Did I understand correctly, you said it's -- you have a rule, a rule of thumb, in which 5000 milligrams per liter there would be equivalent to 100,000 milligrams per kilogram on a soil sample?

A. Right.

Q. And is that your own number that you have calculated for material properties, or is that a

professional rule of thumb?

A. Well, it's just a matter of the analytical procedure, assuming -- and I'm assuming chloride being -- as I say, assuming all the chlorides in that sample would be available for that solution, to dissolve in that solution, that leaching solution. And for chloride that's probably going to be true.

Q. So that is your number for any conservative solute; solute you do not lose does not remain in the liner?

A. Right.

Q. There's still a confusion on the model. In your model, does all moisture release and all contaminant release stop at the bottom of the buried waste at 50 years, or is it just the contaminant release that stops?

A. Well, for the model it stops for the contaminant release.

Q. So water continues to go through your hypothetical buried waste, it just does not accumulate more contaminant on the way through?

A. Correct.

Q. In other words, continuing water, following the plume going down here?

A. Correct.

Q. Is the plume then characterized mostly as a

saturated flow or an unsaturated flow?

A. Definitely unsaturated flow.

Q. If it's an unsaturated flow, did you consider different soil characteristics in addition to the saturated hydraulic conductivity? Did you consider other characteristics such as different suction properties? Some people would call those the van Genuchten relationship.

A. Yes.

Q. And did they impact the results in any way?

A. Well, again, that's one of the -- what I would call nonsensitive parameters, given the release fluxes that we had demonstrated from HELP, I did a sensitivity check on the van Genuchten parameters and went from, you know, one to another, and what I saw was changes in orders of magnitude in the van Genuchten parameters to result in about a three-percent difference in --

Q. So soil suction, in summary, then, is a very insensitive parameter --

A. Yes.

Q. -- in your model?

A. Yes.

DR. NEEPER: Thank you.

CHAIRMAN FESMIRE: Mr. Huffaker, do you have any questions?

MR. HUFFAKER: No.

CHAIRMAN FESMIRE: Commissioner Bailey?

EXAMINATION

BY COMMISSIONER BAILEY:

Q. If I understand you correctly, inputs into the HELP program -- the outputs from that become the inputs for the MULTIMED program?

A. That's correct.

Q. So any errors in judgment for the inputs of the HELP program would compound and create faults or errors in the outputs of the MULTIMED program?

A. I'd -- I guess I would back up just a little bit, if I may. The advantage or the reason why we use the HELP model is because we have data, actual real-world data, in the form of precipitation, which is of course the most important input into HELP. So what you're stating, I would have to say, is correct.

But on the other hand, the reason we're using HELP is because it's such a good tool, because it can accept the real-world data.

Q. It so happens that I lived for many years midway between Pagosa Springs, Colorado, and Chama, New Mexico, and Dulce happened to be on my daughter's school bus route. So I know Dulce very well.

How would you describe the vegetation around Dulce? Tall pine trees, thick grass, pretty well vegetated

with mountain or submountain-type vegetation?

A. Yes, I would say that it's generally ponderosa -- piñon, ponderosa.

Q. Vegetation that requires quite a bit of moisture compared to cactus or P-J-type vegetation locations, right?

A. Yes.

Q. There's even a couple of natural lakes in through that area. Did you see those? They're pretty.

A. Yes.

Q. Nice fishing there too. Which tells me that your statements that Dulce precipitation records are typical of the San Juan Basin is debatable.

A. Well, I mean, I can say from personal experience that I have been to pit locations that had similar vegetation as the Dulce area. But what we're saying here -- what we're trying to say, is that there's -- what we modeled is a typical -- where it could occur. I'm not saying it's the best location, and you can't even really say it's the worst location in the state where a pit might end up, but we're saying this is typical location that could occur.

Q. But it's not typical of San Juan Basin, which extends south through McKinley County, Rio Arriba County, those areas that we don't associate with tall pine trees and thick grass, natural lakes?

A. Well, as I said, I've been to locations -- I think even some of our photographs might depict that very vegetation that you're speaking of in the northwest.

Q. In some areas.

A. Yes.

Q. Would that imply that maybe the soils are a little different around Dulce than they around, say, Farmington?

A. Certainly every site, you know, is going to have some different characteristics to that soil.

Q. And the infiltration rates may be different?

A. Yes, and I think our modeling reflected that.

Q. So when we look at the inputs for the weather data, the daily precipitation in Dulce is probably very different, in my opinion, from the rest of the San Juan Basin. The daily temperatures -- I know for sure it's colder there. I lived through winters there, I know it's cold.

Now the solar radiation index may be higher, simply because of an elevation difference, maybe. Soils may be slightly -- infiltration rates may be slightly different.

So these questionable areas may be compounded to make a difference, a significant difference in the MULTIMED model; is that not right?

A. Well, as the modeling indicates, there is a difference in infiltration rates between, say, the Permian Basin and the San Juan Basin, even though -- and that is, of course -- that San Juan Basin infiltration rate is lower, even though the precipitation is higher for this particular recording station we used, Dulce. So we did capture that in our modeling.

Q. Quite a lot of your time is devoted to unlined pits and burial of unlined pits, which would include drilling pits?

A. Yes, and I should state that this was really to model drilling pits, and the closure of drilling pits.

Q. I may sound like a broken record, but the current Rule 50 has a very clear prohibition against unlined drilling pits. I can quote it: Drilling pits, workover pits. Each drilling pit or workover pit shall contain at a minimum a single liner appropriate for conditions at the site.

Higher up in the rule it says, After April 15th, 2004, operators shall obtain a permit before constructing a pit or a below-grade tank.

So there should be no drilling pits developed within the last three years, three and a half years, that are unlined, according -- if OCD would enforce Rule 50?

A. That's certainly correct. And what my point was

with showing those unlined and lined, but after closure, that liner becomes virtually unprotectable, unusable, as far as protection for flows, lined -- low closed pit contents, to have moisture available, it no longer exists in the sense of its original purpose.

Q. But some of your scenarios talk about unlined deep-trench pits. That's not allowed at all, either under Rule 50 or in the proposed rule.

A. I'm sorry, could you repeat that?

Q. I think that I saw some of your slides which talked about deep-trench burial with calculations about unlined. But no unlined deep-trench burial pits would be allowed --

A. Right --

Q. -- either -- under either rule?

A. Right. Well, I didn't -- what I'm -- I'm saying they may originally have been lined when they were active. But as they closed them, through that process the liner is destroyed to the point where it's virtually nonexistent.

Q. I'll just have to go on record that I disagree strongly with your use of Dulce in your calculations as inputs for the models as being typical of San Juan Basin conditions. But that's all I've got to say.

A. If I could respond?

Q. Sure.

A. We didn't try to find an average throughout. What we want to do is the typical worst case for those areas. Hence I would use the worst case in the state, or even the worst case in those basins, but it's what could occur where we could find pits. That's what we have to address in this particular rule.

Q. I have one more idea. Some of the members of the public, who may be listening, may ask themselves the question, How much of the pit contents would be biodegraded within your model scenarios?

A. That wasn't accounted for in the model. We were, of course, modeling chloride concentrations in a release.

Q. I'm just trying to think of questions that the public may have as far some of those chemicals that were found in the analyses, as to whether or not -- well, they should know that the plastic would not be subject to biodegradation, right? But some of the organic chemicals that are found in those samples, you would expect them to biodegrade over time?

A. Depending on the compounds, yes.

COMMISSIONER BAILEY: Okay, thank you.

CHAIRMAN FESMIRE: Why don't we go ahead and take a 10-minute break, start back at five o'clock. We'll finish with Mr. Hansen and hopefully start -- Is it Mr. Jones next?

MR. BROOKS: Yes, Mr. Jones will be our next witness, Mr. Chairman.

(Thereupon, a recess was taken at 4:48 p.m.)

(The following proceedings had at 5:00 p.m.)

CHAIRMAN FESMIRE: Let's go back on the record. Let the record reflect that it is 5:00 p.m. on Wednesday, November 7th, 2007. This is a continuation of Case Number 14,015 before the Oil Conservation Commission. The record should reflect that the three Commissioners, Commissioner Bailey, Commissioner Olson and Commissioner Fesmire are all present. We therefore have a quorum.

And we will continue with the cross-examination of Mr. Ed Hansen. I believe Commissioner Bailey has a question to ask?

COMMISSIONER BAILEY: During the break I was able to get someone to go on line -- the attorneys may need to have this -- to look at Dulce, New Mexico, which you have used as a reference point as typical of the San Juan Basin.

On this map, which is available on the website -- it's publicly available, and it does show the topography of the area surrounding Dulce, New Mexico -- the red line is Highway 64, the blue line that you see running erratically from north to south is the surficial designation for the San Juan Basin, which is to the west of Dulce, which is outside of the San Juan Basin, according to surficial

geology.

So I truly question the use of any information used for Dulce as part of the modeling.

CHAIRMAN FESMIRE: Is that all?

COMMISSIONER BAILEY: That's all.

CHAIRMAN FESMIRE: Commissioner Olson, I wish -- I believe you had some questions?

COMMISSIONER OLSON: Yes, I do.

EXAMINATION

BY COMMISSIONER OLSON:

Q. And maybe I'll go first to the weather data. You were talking about that on Dulce. And I guess, being familiar with some modeling myself, I guess what -- is what you're trying to represent here that Dulce is a worst-case with higher precipitation?

A. Well, I can't say it's the worst case, it is what would be typical, where we typically find, or could find, pits with similar precipitation area or site.

Q. But it may be wetter than, say, Farmington?

A. Certainly.

Q. So if it's wetter, it is -- there's a higher probability for leachate generation getting to groundwater because there's more moisture moving in the soil profile?

A. That's correct.

Q. So if you model something for Dulce, and if it's

going to work there, it then should work in a drier environment as well, because this would be a worst-case scenario, wouldn't it?

A. Typically, yes.

Q. And coming back to -- I guess Commissioner Bailey was bringing up some of the things that are biodegradable that may be in the pits, which I guess would include things like the hydrocarbons, correct?

A. Correct.

Q. Is chloride considered a biodegradable contaminant?

A. No.

Q. Isn't it usually used as a conservative tracer, just for that purpose, because it does not biodegrade?

A. That's true.

Q. So are you using, then, chloride in your modeling, and again to model what the worst-case scenario is?

A. For typical real-world -- what could be allowed under our proposed rule, yes.

Q. Okay, thank you. And then I want to see if I understand a couple other things.

For what you're proposing here is that you can leave 5000 milligrams per kilogram of chloride in a deep-trench burial, and that's measured by SPLP; is that

correct?

A. It's 5000 milligrams per liter, and that's the test result --

Q. Excuse me --

A. -- that we required, yes.

Q. So essentially that would equate to being able to leave approximately 100,000 milligrams per kilogram of chloride in the soil?

A. In the --

Q. Or in the waste, excuse me.

A. Right, waste, yes.

Q. Okay. And I guess what I've seen from the sampling on page 16, and that would -- a lot of the drilling pits sampled would already meet the chloride criteria with some -- with a few exceptions, at least from what was sampled so far; is that correct?

A. That's correct.

Q. So they wouldn't even need any treatment, then, they'd just be able to dispose of directly in a deep-lined burial --

A. Well, it again would have to pass the paint filter liquids test, so the assumption is some treatment would be required.

Q. Okay, just to pass the paint filter test. Okay.

A. Regarding chlorides.

Q. And then going to your modeling results, it seems like -- I just want to see if I -- something kind of popped out, and I want to see if I understand this. It seems like there's a -- if I look at page 18 and compare it to page 20, is there a linear relationship between the initial concentration and the chloride concentration that you see in groundwater? It seems like you have 10,000 milligrams per liter, initial concentration, as you don on page 18 -- it seems like if you increase that to 100,000 it would just be 10 times more chloride in groundwater; is that correct?

A. That's approximately true, yes. I mean, there's a slight difference, but yes.

Q. Okay. Does the same thing happen with -- I was looking at page 21 -- I don't know if it's 21 or if it's 26.

Maybe just looking at page 26, I guess, because you have some multiple plots, but it appears that there's also a linear relationship between depth to groundwater and the time that the contaminants are going to get to groundwater? It looks like you've got 50 feet to groundwater, you've got around -- I'm looking at the poor liner peak, you've got about, you know, 700 years roughly, and then it looks like -- well, maybe not. If you've got probably -- if you've got 100 feet to groundwater, it's approximately double that, it looks like, at around 1400 or

so. So it appears to be a liner relationship there as well?

A. Yes.

Q. Okay. And -- Oh, something I noticed on a couple of your slides. On page 21 and page 31, you're showing the -- is that dark line supposed to be the chloride standard, that goes horizontally?

A. The pink line?

Q. Let's see, right there, if I look at that purple line or whatever -- pink line --

A. Yeah --

Q. -- or whatever --

A. -- right.

Q. -- that is. Because you're listing that as chloride standard, and the chloride standard is actually 250?

A. Yes, and we're assuming that there's two hundred-- I'm sorry, -fifty milligrams per liter, so of course 250 minus what's already in the groundwater is when a release will increase the concentration enough to exceed that 250. So even though I have the line set at 200, it's assuming that there's already 50 milligrams per liter -- it could be naturally occurring or from another contaminant source.

Q. But typically that would be -- you say it's -- you're accounting for about 15 milligrams per liter

background, then in the soil?

A. In the groundwater, yes.

Q. Oh, in the groundwater. Okay. So that way you can add an additional 200, is what you're modeling here?

A. Right.

Q. And not break the standard?

A. (Nods)

Q. Okay, thanks.

And I guess I look at page 34, you're talking about your modeling being good for showing protections on on-site deep burial of the 50-foot depth to water of about 1000 years; is that correct? It's probably number 35.

A. Thirty-three.

Q. Thirty-three? Yeah, right there.

A. That's correct.

Q. And I guess, do you know of any liner manufacturer that will guarantee their liner for 1000 years?

A. I don't.

Q. That's a no, then? Is that --

(Laughter)

A. That's a no. I don't know of any liner manufacturer that will guarantee it --

Q. Okay.

A. -- for 1000 years, no.

COMMISSIONER OLSON: Okay, that's all I have.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Hansen, carrying on that theme, what is the design life of those liners that you would use, say, in a deep-trench burial?

A. Well, of course we're hoping that they will last 1000 years. We don't know -- There have been some studies to indicate that it could be as short a time as 270 years, would be the lifespan of a plastic liner, but --

Q. Okay. And at that point your liner fails and you -- your modeling is kind of -- interrupted, I guess, would be the way to put it. It all of a suddenly becomes a no-liner case for the remaining --

A. Yes.

Q. Okay. And looking at the no-liner cases, some of the things that disturb me, am I right -- am I reading this correct? If there is no liner and you just bury it in place -- and we're looking -- granted for a depth to water of about 50 foot, but we're looking at a median of about 80 years before we get the contamination; is that correct?

A. Well, the median here is among these different depths to groundwater. What was modeled was something less than 80 years, but --

Q. So that concerns me, because in most parts of New

Mexico we've been doing this for about 80 years. Are we going to, in the near future, see a rash of groundwater contamination cases that are just now starting to appear?

A. I mean, some of those might be at greater depths than 50 feet, but some of them might be less, so I would say yes, they -- I mean, they're going to be somewhere in that range, 180, a hundred feet, so...

Q. Okay. And if the liners in a deep-trench burial fail or -- the studies you mentioned show about a 270-year life, and then you add the -- and I realize it wouldn't be a direct add, but you have the 80 years for the no-liner case. We're looking at a pretty significant threat to our water, even if we use deep-trench burial, after, say, 350 years; is that correct?

A. That's correct.

Q. Actually prior to 350 years?

A. Well, assuming we do about 50 years -- sorry, 50 feet --

Q. Right.

A. -- it would probably be in the 350-year range.

Q. So all we're doing, even with the deep-trench burial, is buying time, huh?

A. That's correct.

Q. I think I was understanding what you were saying when you made the statement they were originally lined when

active, but closure in New Mexico -- and we were talking about the northwest part of New Mexico -- makes them totally ineffective. Are you talking about when you take that liner and cut off the exposed part of it, put it into the pit and then just bury it? Is that the closure procedure you were talking about?

A. Well, if that were the only thing that was done, then maybe the plastic would remain intact. But of course what's done is that there's some mixing of the pit contents with soils, and that's bound to destroy the liner. Even pushing dirt over plastic will disturb it enough to possibly rip or tear the liner --

Q. And --

A. -- and I say that from personal observation, landfill liner installation.

Q. So in essence, the burials we have in the northwest that are in areas that show about 50 foot to water, since we've been drilling up there, you know, for -- what, since 1920s, we're liable to see a significant increase in groundwater contamination up there due to oil and gas operations; is that correct?

A. Certainly that potential, yes.

CHAIRMAN FESMIRE: Okay. Mr. Brooks, do you have any redirect of this witness?

MR. BROOKS: Briefly, yes, your Honor.

REDIRECT EXAMINATION

BY MR. BROOKS:

Q. Mr. Hansen, Ms. Foster asked you about the observations you made about the number of defects that might be -- that you might expect to be encountered in the liner. Was that an assumption you made, or is that an assumption that's built into the HELP model procedure?

A. Well, that's an assumption that the HELP model gives guidance on, based on empirical studies made of installation of liners.

Q. So is that an input parameter, or is that part of the model?

A. That's an input parameter.

Q. Okay. Mr. Frederick, asked you some questions about the fact that it could -- the contamination could reach groundwater in quantities sufficient to cause it to exceed standards faster than your model predicts. Do you recall that?

A. Yes.

Q. Now as an example of that, would an instance of that be that the contaminant -- instead of having a homogeneous characterization in the vadose zone, that you had preferred pathways which the contamination could travel?

A. If there are preferred pathways -- and it's very

likely there will be over 50 feet of vadose zone -- it could travel -- moisture could travel faster through those preferential pathways.

Q. Are there fairly -- are there -- In general terms, are there a fairly large number of places where moisture tends to move along preferred pathways?

A. Yes.

Q. So that's not a real uncommon situation?

A. That's true.

Q. Okay. Did you take anything from Dulce, New Mexico, other than precipitation levels?

A. Temperatures.

Q. Okay. But what about soil characteristics?

A. No.

Q. And what were those -- where were those derived from?

A. Those were from my professional experience regarding, say, hydraulic conductivity or effective porosity, developed from -- well, actually Dr. Lane Porter and I came up with a formula to derive effective porosity for considering a wetting zone going down through the vadose zone.

Q. Okay. For your -- With regard to Commissioner Bailey's assumption about -- or statement about the requirement for drilling pits to be lined, are you familiar

with -- sufficiently familiar with Rule 50, are you aware of whether or not it requires the integrity of that liner to be maintained at the time of closure?

A. No.

Q. Are you familiar enough with Rule 50 -- Are you aware of whether or not Rule 50 requires that any kind of testing under the liner at the time of closure to see if the liner has been compromised?

A. I'm not aware of any testing requirements. I believe there's not testing requirements.

Q. Okay. Well, the Division will offer testimony on this subject from another witness, but for the purpose of order of witnesses I'm going to ask you to assume for purposes of my question that the liner requirement for drilling pits in Rule 50 does not have any specific provision that would require the liner integrity to be maintained after closure and that it does not have any specific projection --

MS. FOSTER: Objection. Mr. Chairman, is this meant to be a hypothetical? Is this a statement of fact from Mr. Brooks? I'm not quite sure what --

CHAIRMAN FESMIRE: No, he said pretty clearly that it was a hypothetical, and the witness was to assume for the purposes of generating a professional opinion. I'll overrule the objection.

MS. FOSTER: Okay.

MR. BROOKS: Thank you, Mr. Chairman.

Q. (By Mr. Brooks) Okay, let me start over again. I ask you to assume for purposes of this question that Rule 50 -- the requirement for a liner for a drilling pit in Rule 50 does not contain any specific provision requiring that the liner integrity be maintained following closure, and further that Rule 50 requirement for a liner for drilling pits does not contain any specific provision -- or that Rule 50 does not contain any specific provision requiring the contaminant levels under drilling pits to be measured at the time of closure to see if the liner has been compromised.

Now making those assumptions, is your modeling relevant to predicting -- is your modeling -- the portion of your modeling that deals with unlined pits relevant to predicting the time for contaminant travel from drilling pits in the northwest, even if those drilling pits are in fact lined at the time they're in operation?

A. Yes, because there could be a release even through those lined pits, there could be some breach in that liner that would create a release and having possible contamination go through the vadose zone into groundwater.

Q. Now was the purpose of your modeling to predict what would happen during the time a pit -- a drilling pit

is in operation and being used for drilling fluids, or was it to predict what would happen following closure?

A. Following closure.

MR. BROOKS: I believe that's all my questions, Mr. Chairman.

CHAIRMAN FESMIRE: Okay. Ms. Foster, do you have any recross on the subjects of the redirect?

MS. FOSTER: I do, I do.

RECROSS-EXAMINATION

BY MS. FOSTER:

Q. Mr. Hansen, concerning the hypothetical that Mr. Brooks gave you and contamination levels in terms of migration of those contaminants, is there a correlation between the precipitation levels and contamination travel?

A. Well, yes. Yes.

Q. Yes. And do you know what that ratio is?

A. Well, as we saw, even -- through the modeling, even though you can have a higher precipitation, you could have possibly lower infiltration rate. But as far as a direct ratio, that's -- I guess the beauty of the HELP model is that it can take into account what the daily precipitation would be and account for things like evaporation and transpiration.

Q. But the daily HELP -- the HELP model, one of the factors that you do have to input is the weather, correct?

A. Correct.

Q. Right? And on your weather numbers, is precipitation an issue in picking your weather numbers?

A. I guess I don't -- I mean, we didn't -- I mean, we just chose those to give us a typical worst case, but we didn't --

Q. Okay, well --

A. -- try and find the worst case.

Q. I understand that, and that's been repeated a couple of times, but did you not -- and this will be my last question. Did you not pick Dulce, New Mexico, and Hobbs, New Mexico, because that was on the east side of the basins, which tend to have more precipitation?

A. To give us the typical -- yes --

Q. Okay.

A. -- for trenches.

MS. FOSTER: I have no further questions. Thank you.

CHAIRMAN FESMIRE: Mr. Hiser?

RECROSS-EXAMINATION

BY MR. HISER:

Q. Mr. Hansen, Mr. Brooks asked you a couple of questions about everybody's favorite topic, which is preferential pathways. And having raised that topic -- which means, of course, that I now have to talk about that

topic as well -- if infiltration rates or the recharge rates were determined empirically for the model input parameter -- say for example, by example, regional aquifer recharge or studies of the rates over large areas -- wouldn't that necessarily also include the net contribution of the preferential pathways?

A. Yes.

Q. And so that for us to then look at a preferential pathway again would be in fact to, to some extent, double-count the preferential pathway impact, would it not? On a large scale?

A. Well, I would have to distinguish between a recharge for an area and what's going to be possible release underneath a moist pit or trench.

Q. But Mr. Hansen, are you not already relying upon the increased rate from the preferential pathways on the regional to increase the rate under the pits that are not in a so-called preferential pathway?

A. Not with this modeling, no.

Q. So your testimony, then, is that the preferential pathway would not make an impact on the rate at which the material would translate to the groundwater?

A. Well, I guess I'm not sure -- this model didn't take into account preferential pathways.

Q. Did?

A. It did not.

Q. By "did not", you're -- that's a pretty strong term. So you're saying, then, that you also discounted from the regional infiltration rate or from what you used as an infiltration rate, any contribution of preferential pathway in the regional data that you may have placed into this model?

A. Yeah, as far as infiltration rates versus recharge rates, that's correct. The HELP model does account for some roots, holes on the top six inches. But other than that, in the vadose zone the MULTIMED doesn't account for preferential pathways.

Q. I see. Other than what may be in the determination of the infiltration rate in gross?

Let me rephrase that question. Maybe it will be clearer to you.

Does the infiltration rate differ between, let's say, Alabama and New Mexico?

A. Yes.

Q. And part of that has to do, does it not, with the amount of water that's just going through the soil column?

A. The amount of precipitation --

Q. Precipitation.

A. -- yes.

Q. Okay, and so if I have an area within a region

that takes water in faster and I also have areas that take in water slower, can you use the average or some number for that area that's the combination of those two factors, is it not? For however many N^i factors there are, data points that went into that number?

A. Yes.

Q. Okay. Now also with preferential pathways, if the contaminant is going to move into the groundwater, is it not also true that the water needs to move into the groundwater?

A. Yes.

Q. And so if we were to model a preferential pathway, which is admittedly difficult, would not the groundwater concentration also show a greater dilution from the greater volume of water that would be traveling with that contaminant?

A. Well, again it would depend on some other factors. It could be additionally diluted -- I mean the original concentration -- but if the original concentration is from a pit or contaminant source other than a natural process, that concentration would remain somewhat the same, other than there could be some dilution as it goes down through the vadose zone.

Q. Well, but also that depends upon the dispersion and absorption and other characteristics of the constituent

concerned?

A. Certainly.

Q. My last question about a preferential pathway -- I guess -- Let me back up and ask one more question on that.

So the preferential pathway issue would be highly case-specific?

A. Yes.

Q. And hence is it very susceptible to treatment by rule?

A. I'm not sure what you mean.

Q. Are you proposing to adopt a rule for each individual pit, or are you trying to propose a rule that would apply to all the pits across these two basins?

A. A rule for across these two basins.

Q. My last question on preferential pathways is, let us postulate hypothetically a gopher hole that extends from the very land surface all the way down to the groundwater, so we have a giant tube.

If I were to have a flow of water in saturated flow conditions go down that gopher hole, it would reach the groundwater very quickly, would it not?

A. Yes.

Q. What would happen, though, if there was, say, a four-inch plug at the top of that gopher hole? How fast

would the water go from the surface to that place 50 feet below?

A. I don't know -- I don't know.

MR. HISER: Thank you very much.

CHAIRMAN FESMIRE: Mr. Carr?

MR. CARR: (Shakes head)

CHAIRMAN FESMIRE: Dr. Neeper, any --

DR. NEEPER: No questions.

CHAIRMAN FESMIRE: Mr. Huffaker?

MR. HUFFAKER: (Shakes head)

CHAIRMAN FESMIRE: Mr. Frederick?

MR. FREDERICK: I just have a couple of clarifying questions.

FURTHER EXAMINATION

BY MR. FREDERICK:

Q. Did your model have anything to do with preferential pathways?

A. No.

Q. I didn't think so.

Did -- Do you know what the average precipitation is in the San Juan Basin and the Permian Basin?

A. I don't.

Q. Okay. Do you know the range of precipitations there?

A. I could give you a range of approximately 8 1/2

inches to 20 inches in the San Juan Basin and about 12 inches to 16 inches in the Permian Basin.

MR. FREDERICK: Okay, no further questions.

CHAIRMAN FESMIRE: Okay, are there any further questions of this witness?

CHAIRMAN FESMIRE: Mr. Brooks, you may excuse your witness.

Mr. Hiser?

MR. HISER: Mr. Chairman, the witness, under the agreement, is subject to recall for modeling parameters that were provided --

MR. BROOKS: Subject to the same stipulation as in the case with Mr. von Gonten.

CHAIRMAN FESMIRE: Will you be able to review the data by Friday afternoon?

MR. HISER: We certainly hope so.

CHAIRMAN FESMIRE: I hate to inform you of this, Mr. Hansen, but you're on call until Friday afternoon.

MR. HANSEN: Right.

CHAIRMAN FESMIRE: Mr. Brooks, we've got 25 minutes. Would you like to begin with your next witness, or --

MR. BROOKS: Whatever is the pleasure of the Commission.

CHAIRMAN FESMIRE: Oh, yes, you probably only

have 15 minutes, because we're going to have to have some time for public comment.

Last I checked the sign-in sheet, nobody had indicated that they wanted to give a public comment, but we've got to provide the time at the end of the end of the deal, so --

MR. BROOKS: We will abide by the Commission's pleasure.

CHAIRMAN FESMIRE: Well, the way the Commission secretary looked at me, I think I'm just going to ask for public comment and --

(Laughter)

CHAIRMAN FESMIRE: Is there anyone who would like to make a public comment on the matter before the Commission today?

We will get other opportunities. We intend to -- for as long as this hearing runs, we intend to give you the opportunity to make a public comment before we break at lunch and before we adjourn for the evening.

A couple of quick announcements.

Tomorrow morning we will meet in this room. The Commission will meet at nine o'clock. The Commission has some other business, not related to this hearing. We estimate that it will take about 15 minutes to finish, but we will, immediately after we finish that, whether it takes

five minutes or 30, we will go into this hearing.

So with that, we are adjourned until approximately 9:15 tomorrow morning, in this room.

Thank you all.

(Thereupon, evening recess was taken at 5:36 p.m.)

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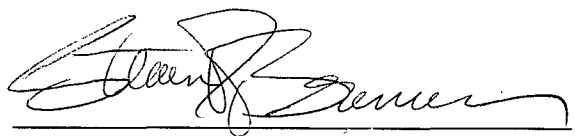
CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Commission was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL December 2nd, 2007.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2010