

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: ) CASE NO. 12,033  
)  
APPLICATION OF PUBLIC SERVICE COMPANY OF )  
NEW MEXICO FOR REVIEW OF OIL CONSERVATION )  
DIVISION DIRECTIVE DATED MARCH 13, 1998, )  
DIRECTING APPLICANT TO PERFORM ADDITIONAL )  
REMEDICATION FOR HYDROCARBON CONTAMINATION, )  
SAN JUAN COUNTY, NEW MEXICO )

REPORTER'S TRANSCRIPT OF PROCEEDINGS

COMMISSION HEARING (Volume I)

BEFORE: LORI WROTENBERY, CHAIRMAN  
JAMI BAILEY, COMMISSIONER  
ROBERT LEE, COMMISSIONER

August 26th, 1999

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Commission, LORI WROTENBERY, Chairman, on Thursday, August 26th, 1999, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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OIL CONSERVATION DIV.  
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 CASE NO. 12,033

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## E X H I B I T S

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\* \* \*

## A P P E A R A N C E S

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(Continued...)

## A P P E A R A N C E S (Continued)

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\* \* \*

ALSO PRESENT:

WILLIAM C. OLSON  
NMOCD Environmental Bureau

\* \* \*

STEVEN T. BRENNER, CCR  
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00616

1 WHEREUPON, the following proceedings were had at  
2 9:04 a.m.:

3 CHAIRMAN WROTENBERY: I believe now we're ready  
4 to take up Case 12,033. This is the Application of Public  
5 Service Company of New Mexico for review of Oil  
6 Conservation Division Directive dated March 13th, 1998,  
7 directing the Applicant to perform additional remediation  
8 for hydrocarbon contamination in San Juan County, New  
9 Mexico.

10 This case is before the Commission upon the  
11 Application of both the Public Service Company of New  
12 Mexico and Burlington Resources Oil and Gas Company for de  
13 novo review of this case pursuant to the provisions of Rule  
14 1220.

15 Let me just start briefly by introducing  
16 everybody, the folks that are up here at the front.

17 My name is Lori Wrotenbery, I'm Chairman of the  
18 Oil Conservation Commission.

19 To my right is Jami Bailey, who represents Land  
20 Commissioner Ray Powell on the Commission.

21 To my left is Dr. Robert Lee, who is the  
22 appointee of the Secretary of the Department of Energy,  
23 Minerals and Natural Resources to the Commission.

24 We also have Florene Davidson for a little while  
25 anyway here. She's the Commission secretary, and I believe

1 after we get started you'll probably be stepping out until  
2 we need you again.

3 And then we have Lyn Hebert, the Commission's  
4 legal counsel, and Steve Brenner who will be recording the  
5 proceedings today.

6 With that, let me call for appearances in this  
7 matter so we can find out who's here from the parties.

8 MR. ALVIDREZ: Madame Chairman, Richard Alvidrez  
9 on behalf of Public Service Company of New Mexico, and with  
10 me is Toni Ristau of PNM as the company representative.

11 CHAIRMAN WROTENBERY: Thank you.

12 MR. CARR: May it please the Commission, my name  
13 is William F. Carr with the Santa Fe law firm Campbell,  
14 Carr, Berge and Sheridan. We represent Burlington  
15 Resources Oil and Gas Company in opposition to the  
16 Application.

17 With me at counsel table is Paul Owen, an  
18 associate with our firm, and John Bemis, in-house counsel  
19 for Burlington.

20 MR. CARROLL: May it please the Commission, my  
21 name is Rand Carroll, appearing on behalf of the Oil  
22 Conservation Division.

23 Sitting next to me is a representative of the  
24 Division's Environmental Bureau, Bill Olson.

25 CHAIRMAN WROTENBERY: Thank you.



1           Okay, Counsel, let's just talk for a moment, I  
2       guess, about how we'll proceed in this matter.

3           All of the parties have submitted prefiled  
4       testimony in this particular case, and we have direct  
5       testimony and rebuttal testimony from, I believe, every  
6       witness, plus an additional rebuttal witness testifying on  
7       behalf of Burlington Resources.

8           What we would propose to do is to basically ask  
9       each witness to come up, identify themselves, be sworn in,  
10      adopt their testimony, the prefiled testimony in this matte  
11      -- and we would propose that we take up both the direct and  
12      the rebuttal testimony at the same time; I think that might  
13      increase the efficiency of the proceeding a little bit --  
14      identify the exhibits that go with their testimony, and  
15      we'll consider the matter of introducing those into the  
16      record, address the issue of the qualification of the  
17      witness to testify as an expert if that's an issue, and  
18      then stand for questions.

19           The Commissioners have all reviewed the prefiled  
20      testimony in this matter, so I don't know that we need to  
21      spend additional time going over the prefiled testimony  
22      either in the direct or the rebuttal form. So we would  
23      propose that the parties then present each of their  
24      witnesses for questioning, cross-examination by the other  
25      parties in the proceeding and questioning by the

1 Commission. There may be some redirect after that, and  
2 we'll see how that goes.

3 But that's how we would propose to proceed. Does  
4 that suit everybody?

5 MR. ALVIDREZ: Yes, it does. I believe that  
6 comports with what Ms Hebert and I have talked about --

7 MR. CARR: Yes.

8 MR. ALVIDREZ: -- and I believe she talked with  
9 Mr. Carr and Mr. Carroll.

10 CHAIRMAN WROTENBERY: Okay.

11 MR. CARR: That's consistent with my  
12 understanding of it as well.

13 And I also at this time, to facilitate the  
14 hearing process, can advise the Commission that  
15 Burlington's prepared to stipulate to the admission of the  
16 PNM exhibits. So that could be handled --

17 MR. ALVIDREZ: Including the testimony?

18 MR. CARR: I have questions about part of the  
19 testimony, but as to the exhibits themselves, at this time  
20 we could agree to their being admitted into the record so  
21 that wouldn't have to become an issue later in the  
22 proceeding.

23 CHAIRMAN WROTENBERY: Okay.

24 MR. CARROLL: The Division has no objection to  
25 that.

1 MR. ALVIDREZ: With that, we would move the  
2 admission of PNM Exhibit B, which consists of PNM Exhibits  
3 numbered 1 through 70. And I have the original here, which  
4 I will tender to the reporter, if I may.

5 CHAIRMAN WROTENBERY: Yes, please do.

6 MR. ALVIDREZ: I also have and have provided to  
7 both Mr. Carr and Mr. Carroll something that I think will  
8 aid everyone, and that is an index to the exhibits. It's  
9 not substantive in any way, it simply is a listing of  
10 what's in this rather large volume. And if I may give it  
11 to the Commissioners or the Commission's counsel at this  
12 time, it may facilitate your review later on.

13 CHAIRMAN WROTENBERY: Thank you.

14 Okay, in that case we will consider PNM Exhibits  
15 1 through 70 as being part of the record in this  
16 proceeding.

17 MR. ALVIDREZ: There was one other matter, Madame  
18 Chairman, and that had to do with a supplemental exhibit  
19 which we sent to both counsel yesterday. We've denominated  
20 it PNM Exhibit 48-A, and copies were faxed yesterday.

21 And what this is is really an update of Exhibit  
22 48 that's been admitted. What it includes are some test  
23 results, very recent test results, that we received just  
24 yesterday. And I don't know if there is an objection or  
25 question about the admissibility of that as well.

1 MR. CARR: May it please the Commission, we  
2 received the Revised Exhibit 48 yesterday and have reviewed  
3 it, and we do not object to the admission of Revised  
4 Exhibit 48.

5 CHAIRMAN WROTENBERY: Mr. Carroll?

6 MR. CARROLL: No objection.

7 CHAIRMAN WROTENBERY: Okay, Exhibit 48-A, then,  
8 is --

9 MR. ALVIDREZ: It's not included in that exhibit  
10 volume.

11 CHAIRMAN WROTENBERY: -- admitted as well.

12 MR. ALVIDREZ: If I may tender it to counsel --

13 CHAIRMAN WROTENBERY: Yes.

14 MR. ALVIDREZ: -- and one for the court reporter  
15 as well.

16 CHAIRMAN WROTENBERY: Now, as for the exhibits  
17 filed by Burlington, do we want to go ahead and consider  
18 doing the same thing?

19 MR. ALVIDREZ: As to the exhibits that are  
20 contained in Burlington -- I guess it's Burlington Exhibits  
21 1 through 41, we don't have an objection to those.

22 CHAIRMAN WROTENBERY: Any objections?

23 MR. CARROLL: No objection.

24 MR. CARR: May it please the Commission, I would  
25 move the admission into evidence of Burlington Exhibits 1

1 through 41.

2 CHAIRMAN WROTENBERY: Okay, Burlington Exhibits 1  
3 through 41 are admitted.

4 And Mr. Carroll, I believe -- Was there an  
5 exhibit with Mr. Olson's testimony?

6 MR. CARROLL: Yeah, there are two exhibits,  
7 marked OCD Exhibits Number 1 and 2, and then the exhibit  
8 attached to the rebuttal testimony was mis-marked as OCD  
9 Exhibit Number 1, and that should be re-marked as OCD  
10 Exhibit Number 3.

11 CHAIRMAN WROTENBERY: Number 3?

12 MR. CARROLL: Yeah, that's the exhibit with the  
13 rebuttal.

14 CHAIRMAN WROTENBERY: Okay, I'm marking that one  
15 as Exhibit Number 3 on my copy. Ms. Hebert, do you have  
16 that one?

17 MS. HEBERT: Yes.

18 CHAIRMAN WROTENBERY: Okay, and you've marked it  
19 as Exhibit Number 3.

20 Is there any objection, then, to the introduction  
21 of OCD Exhibits 1 through 3 into the record?

22 MR. CARR: I have no objection.

23 MR. ALVIDREZ: No objection.

24 CHAIRMAN WROTENBERY: Okay, they're admitted as  
25 well. Okay, good.

1 I believe we also have a pending motion to quash  
2 the subpoena, and I'm going to ask Ms. Hebert to handle  
3 that one in just a second.

4 I wanted to ask, before we get to that, though,  
5 are the parties interested in making a brief opening  
6 statement in this particular case? And I emphasize  
7 "brief". I think because the Commissioners have studied  
8 the prefiled testimony, we're all pretty well oriented in  
9 this particular matter, but we do want to give you the  
10 opportunity.

11 MR. ALVIDREZ: We would appreciate that  
12 opportunity.

13 MR. CARR: We would like to give an opening  
14 statement.

15 CHAIRMAN WROTENBERY: Okay, great. We'll proceed  
16 to that momentarily.

17 But I think, Ms. Hebert, would you handle the  
18 question of the pending motion?

19 MS. HEBERT: Burlington filed a motion to quash  
20 the subpoena that had been issued on August 23rd at the  
21 request of PNM. Are there still outstanding issues on  
22 that, or has that been resolved?

23 MR. ALVIDREZ: It has not been resolved. We'd  
24 like to be heard on this matter if we could. I suppose as  
25 the movant Mr. Carr should first, however.

1 MR. CARR: May it please the Commission, Mr. Owen  
2 has been handling that matter while I have been scrambling  
3 to get ready, and with your permission he will respond to  
4 that.

5 MR. OWEN: May it please the Commission, we  
6 received a subpoena on Monday afternoon that was issued by  
7 the Division at the request of PNM. That subpoena requests  
8 the production of a number of categories of documents from  
9 four witnesses, all of whom were in Farmington at the time.

10 Burlington is in the midst of preparing for the  
11 hearing in this matter, the hearing on the merits on this  
12 matter, and it would have been impossible to compile and  
13 produce the documents requested within the amount of time  
14 allotted, which was less than 48 hours.

15 Throughout this proceeding, since the Division  
16 Order was entered in this case, Burlington has made  
17 available all documents requested by PNM. Burlington has  
18 not refused to produce any document requested by PNM  
19 through informal requests, either through counsel or  
20 through PNM's employees directly speaking with Burlington's  
21 employees. Rather, the parties have up until this week  
22 proceed on a course of cooperative discovery, cooperative  
23 informal discovery.

24 When we received the subpoena on Monday we were  
25 surprised and dismayed, as it requested large categories of

1 documents which would have been available at any time  
2 through an informal request and which had not been  
3 requested at any time since the Division Order was entered  
4 in this case.

5 Commissioners, it is Burlington's position that  
6 the subpoena is an abuse of the Commission's subpoena  
7 power, and we request that it be quashed.

8 MR. ALVIDREZ: May it please the Commission, I  
9 will agree to some extent with what Mr. Owen has said with  
10 regard to the cooperation among the parties in discovery,  
11 and I can tell you a little bit of background with regard  
12 to this.

13 As you're aware, on Friday the Commission issued  
14 a subpoena at the request of Burlington, and that called  
15 for certain specified items referred to in PNM's testimony,  
16 and that was produced pursuant to the subpoena to  
17 Burlington. Quite frankly, it was Burlington's subpoena  
18 which prompted our subpoena, and the soonest we could get  
19 it up here for issuance was Monday, and that's what we did.

20 We're not asking for anything in the subpoena  
21 that shouldn't be readily available, readily at hand to any  
22 of the witnesses that are testifying in this case, because  
23 our subpoena specifically keys off of their testimony, and  
24 it asks for the items that are referred to at certain  
25 pages, certain specific lines with regard to the testimony.



1           Now, I understand if perhaps Burlington wasn't  
2     able to put it together by nine o'clock on Wednesday, but I  
3     would think that with their witnesses here today that it  
4     shouldn't be any problem for them to simply reach in their  
5     files and pull out the documents which form the basis for  
6     their testimony. And that is exactly what I would ask that  
7     the Commission rule.

8           There hasn't been any indication that they don't  
9     have the documents with them today. My understanding is  
10    that, in fact, the subpoena had been sent out to Burlington  
11    witnesses and they were asked to respond to it. So I don't  
12    believe there's any undue hardship whatsoever to simply ask  
13    these witnesses to provide what was clearly referred to in  
14    their testimony. I would ask the Commission to so rule.

15           MS. HEBERT: Mr. Alvidrez, the subpoena that was  
16    issued at the request of Burlington, I think, identified  
17    two, maybe three, specific items, and the requested PNM  
18    subpoena was broad and requested all notes, all videotapes,  
19    all -- It was that sort of subpoena. And there had been  
20    six weeks intervening in the time that the prefiled  
21    testimony had come in, so that it would appear that that  
22    sort of information could have been requested in a much  
23    earlier and more timely fashion.

24           MR. ALVIDREZ: Well, as a matter of fact, we had  
25    asked -- I have letters going back to April -- asking for,

1 for example, the Philip's materials. We never really got a  
2 response until I called just prior to the time it was for  
3 us to submit our prefiled testimony to find out where it  
4 was. I had never gotten any response. I was told there  
5 wasn't anything else.

6 I get the testimony, and there are photographs  
7 and things like that, that we hadn't seen before. We're  
8 really not asking for anything that these witnesses  
9 shouldn't have with them right now, and I think that's what  
10 the Commission needs to focus on. I'm not sure that some  
11 of these items exist. If they don't exist, then I would  
12 like it on the record that, in fact, they don't exist. But  
13 they were referred to in the testimony; it should be easy  
14 to put your hands on it, for Burlington to put their hands  
15 on it.

16 MS. HEBERT: Mr. Owen?

17 MR. OWEN: Ms. Hebert, may it please the  
18 Commission, the Burlington subpoena was issued last Friday  
19 at the request of myself. It requested a videotape, some  
20 photographs and one cost breakdown. Those were provided  
21 this Wednesday at approximately nine o'clock a.m.

22 I want to emphasize that prior to the issuance of  
23 the subpoena, I had requested in a letter to Mr. Alvidrez  
24 that those documents be provided. I received no response  
25 to my letter, which was faxed to Mr. Alvidrez earlier in

1 the week. We requested three specific, discrete categories  
2 of documents and a videotape, and they were produced.

3 On the other hand, Ms. Hebert, in PNM's subpoena  
4 they request a number of documents which it would take some  
5 time to compile and some time to review. Burlington has  
6 circulated the subpoena to the witnesses identified in the  
7 subpoena and has asked them to bring documents which are  
8 responsive to the subpoena. However, what we have is a box  
9 of documents without copies, which Burlington's counsel has  
10 not had the opportunity to review.

11 We do not object to the production of the  
12 documents, we object to the timing and manner in which the  
13 documents were requested.

14 If the documents had been requested in the normal  
15 course of discovery, Burlington could have produced them,  
16 catalogued them, attorneys could have reviewed them and  
17 produced them and produced them to PNM.

18 However, with a 48-hour window of opportunity, it  
19 is physically impossible to review the large category of  
20 documents that were requested.

21 The specific category of documents discussed by  
22 Mr. Alvidrez were the Philip's documents. In fact, PNM has  
23 requested certain documents from the Philip's report.  
24 Burlington has authorized Philip's to release any of those  
25 documents and has authorized Philip's some time ago to

1 release any documents requested by PNM and told PNM that  
2 they could speak directly with Philip's and obtain any such  
3 documentation.

4 To my knowledge, no such inquiries were made.  
5 Instead, Burlington was hit with a subpoena less than 48  
6 hours before production was required and roughly 36 hours  
7 before the hearing in this matter was scheduled to begin.

8 Ms. Hebert, Honorable Commissioners, we submit  
9 that the subpoena, in fact, is an untimely discovery  
10 request that was not preceded by any informal discovery  
11 request, and an abuse of the Commission subpoena power. We  
12 request that the subpoena be quashed in its entirety.

13 MR. ALVIDREZ: I need to respond to one matter.  
14 It was never communicated to me that we could go directly  
15 to Philip's and ask them for their materials.

16 MS. HEBERT: Okay, thank you.

17 (Off the record)

18 MS. HEBERT: The motion to quash the subpoena  
19 will be granted.

20 Mr. Alvidrez, in the past I don't believe you've  
21 appeared before the Commission as frequently as Mr. Carr or  
22 Mr. Owen. It's been the practice that as you question the  
23 witness, if there is specific exhibits that you believe  
24 that you could elicit through a witness, you can make that  
25 request and the Commission can, on a specific basis,

1 determine whether that's necessary or would be helpful in  
2 determining the issues in this case.

3 MR. ALVIDREZ: All right.

4 CHAIRMAN WROTENBERY: Are there any other  
5 preliminary matters that we need to discuss before we go to  
6 opening statements?

7 MR. ALVIDREZ: I presume the order, based on  
8 conversations with Ms. Hebert, is that PNM will present its  
9 testimony first, then Burlington, then the OCD; is that the  
10 order of progress?

11 CHAIRMAN WROTENBERY: Yes, I think we'll -- That,  
12 I understand, was the way the hearing was handled at the  
13 Division level, and I was assuming -- I should have made  
14 that clear -- assuming that that would be the way we would  
15 go here.

16 So, Mr. Alvidrez?

17 MR. ALVIDREZ: May it please the Commission, you  
18 have before you a voluminous amount of documentation,  
19 technical data, testimony from a number of expert  
20 witnesses, and in reviewing this and preparing for the  
21 hearing it became obvious to me that while on the surface  
22 this may appear as somewhat of a complicated issue, it  
23 really is not particularly complicated.

24 I think that there are a couple of things that  
25 will be very helpful if the Commission will focus on when

1 we are presenting our case. And really, this boils down  
2 and distills what PNM's case is about.

3 It boils down to just a couple exhibits which I  
4 would like to refer to in the PNM exhibit volume, and  
5 specifically that's Exhibit 62, to begin with, and Exhibit  
6 62 is a cross-section of the Hampton 4M wellpad, including  
7 the groundwater and lithography beneath the wellpad. And  
8 the case is one that can be judged, I think fairly easily  
9 simply on logic. And logic dictates that contamination,  
10 when it's released into the groundwater, goes with the  
11 groundwater flow.

12 And the cross-section that we have of PNM Exhibit  
13 62 shows very clearly that the groundwater flow direction  
14 is from the area of Burlington's operations on the southern  
15 part of the wellpad towards PNM's former dehydration pit on  
16 the northern part of the wellpad. And we can see, based on  
17 topographical elevations, and also on groundwater  
18 elevations, that there is quite a significant slope there,  
19 and that anything released to groundwater on Burlington's  
20 side of the wellpad is simply going to go straight from the  
21 groundwater to the area underlying PNM's former pit.

22 And if you dig around underneath PNM's pit you  
23 may find free product, but that free product has originated  
24 from Burlington's excavations and Burlington's work  
25 upgradient.

1           And I don't think there is any dispute about how  
2 this mechanism works with regard to the transport of the  
3 free product, and really, that's what we're talking about  
4 here.

5           The other exhibit which I think is useful for the  
6 Commission to refer to is PNM Exhibit 68. There's been a  
7 lot of testimony about what was underlying PNM's pit, and  
8 this is a cross-section, if you will, of the groundwater  
9 and soil column underlying PNM's former dehydration pit.  
10 We have the surface depicted there with the pit location,  
11 the pit base that's depicted there, which was made up of a  
12 hydrocarbon-stained waxy layer which helps to prohibit or  
13 at least restrain the migration of contamination downward.

14           We have absorbed phase, which continues  
15 underneath that, and I think what was very telling and what  
16 shows that this pit was not the source for the free product  
17 contamination underlying this pit, hydrocarbon  
18 contaminations or contaminant contaminations which are  
19 below OCD guidelines. In fact, it's undisputed that had  
20 PNM just continued on and dug down to about the 15-foot  
21 level, taken the lab samples and come back with the  
22 concentrations that were found, they could have closed this  
23 pit. It would have been closed.

24           What we don't see, and what you would expect to  
25 see at PNM's pit, where the source for the contamination,

1 is a saturated zone all the way down from PNM's pit to the  
2 water table and to the smear zone. You don't have any  
3 indication that that occurred.

4 I think those two factors, with the hydrology at  
5 this site and the evidence relating to the soil column  
6 underneath PNM's former pit, shows that PNM was not the  
7 source of the free-product contamination which underlies  
8 the site.

9 You've been presented with a lot of other  
10 evidence which is important and should be considered, but  
11 it's not perhaps as direct and as convincing, I think, as  
12 the two exhibits we've just talked about. We have the  
13 testimony of Mr. Heath, who goes on at some length and in  
14 some detail, that in fact it would be highly unusual for  
15 large amounts of free product to be discharged from PNM's  
16 dehydrator. This is just another piece of evidence that  
17 would suggest that, in fact, PNM's former pit is not the  
18 source for the contamination, or the free product  
19 contamination, underlying the site.

20 We have testimony that the only way large volumes  
21 of free product could have ever gotten through PNM's  
22 dehydrator in the first place is if there were operational  
23 errors or malfunctions on Burlington's side of the wellpad.  
24 That's with Burlington's surface equipment and specifically  
25 their separator.



1           We also have testimony about the ownership of the  
2 free product. And clearly, PNM was purchasing only gas at  
3 this location, was not purchasing free product. And the  
4 free product is, in fact, owned by Burlington.

5           These things only further support the thesis that  
6 I've advanced with regard to the groundwater flow at this  
7 site, with regard to the evidence of the soil column  
8 underneath the former pit, and we also have the fact that  
9 Burlington had extensive operations, tankage, and all kinds  
10 of things happening on its side of the wellpad.

11           You contrast that with very, very limited  
12 operations, simply one pit, a small pit, on PNM's side of  
13 the wellpad. We believe that when you look at the evidence  
14 and the weight of the evidence, the credibility of the  
15 evidence, it's clear that, in fact, this former PNM pit is  
16 not the source for free-product contamination at the  
17 Hampton 4M well site.

18           And in addition, I think we've shown that even if  
19 you stretch the imagination and believe that some of that  
20 free product originated there, it would be very, very small  
21 amounts and that PNM has already collected more than what  
22 you could reasonably expect to end up in the groundwater.

23           And for these reasons, Commissioners, we would  
24 respectfully request that PNM be relieved of any further  
25 obligation for cleanup at this site.

1 CHAIRMAN WROTENBERY: Thank you, Mr. Alvidrez.

2 Mr. Carr?

3 MR. CARR: May it please the Commission, Mr.  
4 Alvidrez and I are in agreement on one thing: This is not  
5 a complicated case. If you look at the testimony, if you  
6 look at all the issues that are raised, it might appear  
7 like it is complicated. But when you take and analyze it,  
8 at the core there is a very simple question, and there is  
9 only one question before you. And that question is whether  
10 or not PNM is a responsible person for contamination at the  
11 Hampton 4M well site. That's the only question.

12 There are a lot of issues in the case. Some  
13 really have very little bearing on that simple question,  
14 and I think it's important to flag those at the outset. We  
15 have responded to them with prefiled testimony. When  
16 accusations are made, you're frankly afraid not to respond.  
17 But that doesn't mean that they are particularly relevant  
18 or will be very useful to you in deciding the question  
19 that's before you.

20 And so what I'd like to do briefly in the opening  
21 is to identify those issues, tell you what we're going to  
22 show and then tell you what I think will be the dispositive  
23 bits of testimony as we move through this hearing.

24 There's a lot of testimony in the case concerning  
25 about Burlington contamination at this site. That is not

1 the issue. I think you should remember at the outset that  
2 Burlington admits that it is a responsible party for  
3 contamination at the Hampton 4M well site. We're not here  
4 today attempting to avoid responsibility for contamination  
5 at this well. We've been working with the OCD in an  
6 attempt to clean it up.

7 But whether or not Burlington is a responsible  
8 party -- and we admit we are -- is not relevant to the  
9 issue in this case, and that is, is PNM responsible for  
10 contamination at this well site? And when you see the  
11 evidence, I think it will be very clear that PNM is also  
12 responsible.

13 And the issue for the Commission is whether or  
14 not PNM should be excused from performing OCD directives  
15 related to cleaning up contamination at this site, whether  
16 they should be excused while the problem remains, a problem  
17 to which you will see they admit they have contributed.

18 The second issue -- of really marginal value, I  
19 would submit to you, in deciding the issue at hand --  
20 relates to the Burlington remediation efforts at this site  
21 in late 1998 and early 1999. The evidence will show that  
22 Burlington has been out at the site, they have excavated  
23 substantial volumes of contaminated soil in an effort to  
24 remove the source of hydrocarbon contamination.

25 But remember, Burlington does not take the

1 position, as PNM seems to assert, that the remediation at  
2 this site is complete. It is not. The evidence in this  
3 case will show that contamination was discovered in April  
4 of 1996.

5 And in spite of PNM's efforts to excavate to 12  
6 feet at the site of their pit, in spite of our efforts to  
7 remove contaminated soil in the area of our former tank  
8 battery, in spite of our construction of a trench to try  
9 and contain the hydrocarbons that were moving down the  
10 arroyo, after months and months and years of sampling and  
11 testing, free-phase hydrocarbons were present at the site,  
12 a plume of dissolved-phase hydrocarbons was moving  
13 downgradient from the site at approximately 500 feet a  
14 year.

15 And two years after this problem was discovered  
16 and this situation was still unresolved, the Oil  
17 Conservation Division directed Burlington to investigate  
18 and remediate at the site, and they did not undertake new  
19 investigations or remediation activity.

20 In September of 1998, another letter came from  
21 the OCD, this time directed to Burlington and to PNM, and  
22 again it directed us to conduct additional investigation  
23 and remediation at the site. And we met, and the evidence  
24 will show that PNM would not pay its share of the cost, and  
25 so no agreement was reached.

1           And the evidence will also show that thereafter,  
2 eight months after the initial directive, Burlington wrote  
3 PNM and said, You go clean it up, or we will. They  
4 declined, and we did.

5           And from the very day that they learned that we  
6 were serious about getting out there and cleaning it up,  
7 PNM has complained and complained about everything we've  
8 done, keeping in mind they didn't, and wouldn't.

9           But what has happened to resolve the situation  
10 really has no bearing on the question before you, and that  
11 is, should they be excused, should they be allowed to go  
12 home before the job is done?

13           Another issue has recently popped up -- it is  
14 simply irrelevant to anything before you -- and it concerns  
15 the issue of on-site land-farming. The era of good feeling  
16 between PNM and Burlington is obviously over, and we have  
17 been evaluating certain other activities being conducted on  
18 our leases, and that involves whether or not they should  
19 conduct on-site land-farming on our properties. And there  
20 is an issue between us on that, but it doesn't relate to  
21 the question of whether they should go home before the job  
22 is done at the Hampton 4M well site.

23           We're here, we're appearing in opposition to this  
24 Application. You've seen the prefiled testimony. We will  
25 call Ed Hasely. Ed Hasely is the person who is responsible

1 for remediation at this site. He has a petroleum  
2 engineering degree from Penn State, he has approximately 15  
3 years' work experience in the environmental area. And the  
4 purpose of his testimony is to respond to arguments  
5 presented at the Examiner level and also in the prefiled  
6 testimony, suggestions that our initial efforts to  
7 investigate and work at the site were inappropriate or  
8 inadequate, questions about what we have done to remediate  
9 this site. He'll tell you about those efforts. He'll tell  
10 you about how we trenched, trying to stop the flow in early  
11 1996, he'll talk about our participation in the effort and  
12 what we've done to remediate the site.

13 And I think at the end, when you look at the  
14 testimony, it is clear that Burlington has fully responded  
15 to the OCD directives. I think we refute, clearly, the  
16 suggestions that we haven't acted appropriately, but that  
17 begs the question. The question isn't what we did, the  
18 question is, should PNM go home.

19 We'll call Larry Dillon. He's a petroleum  
20 engineer with a degree from the Colorado School of Mines.  
21 Throughout the testimony PNM keeps saying, Burlington needs  
22 to tell you what happened at the well, they need to look  
23 into this, they need to explain why the GOR was down. We  
24 have done that. And Mr. Dillon testifies that based on the  
25 review of the records, there's a question as to what

1 actually happened with that production, so he moved one  
2 step farther, and he can show you that we've tested the  
3 well, Bradenhead test, to establish its integrity, we have  
4 looked at the site, and whatever happened to the  
5 production, it was not spilled. And that's the purpose of  
6 his testimony.

7 We call Jim Rhodes. Mr. Rhodes is the Vice  
8 President of Process Equipment Service Company, Inc., in  
9 Farmington. He has a bachelor degree in mechanical  
10 engineering from New Mexico State University. His business  
11 builds and services the same kind of equipment that's on  
12 this site, and he responds to Mr. Heath's testimony.

13 Mr. Heath, as you know from reading the testimony  
14 -- case is that very, very minimal amounts could have come  
15 out of the PNM separator, and he explains why if everything  
16 works just exactly as planned, that would be the case.

17 Mr. Rhodes testifies that without the equipment  
18 malfunctioning, it's possible that even the entire liquid  
19 string from the well could have been discharged to the PNM  
20 pit.

21 And then finally we call Paul Rosasco. Mr.  
22 Rosasco is a geologist, a hydrologist, a civil engineer  
23 from Golden, Colorado. He's the President of Engineering  
24 Management Support, Inc. He has degrees from Colorado  
25 School of Mines and the University of Oregon in this area

1 and over 20 years of experience.

2 And he has reviewed the site, and he explains his  
3 work and his conclusions to you. And he shows you that the  
4 former pit is a source of contamination. We're not drawing  
5 lines between free-phase, dissolved-phase. They  
6 contaminated, they left it in the ground when they finished  
7 their remediation, and it is a source. And he testifies  
8 that discharges from this pit into the unlined surface  
9 impoundment contributed to contamination at the site.

10 He testifies that the pit is the source of a  
11 contamination. If you look at PNM Exhibit Number 62, which  
12 they say is dispositive of the issue, if you look at the  
13 top of that exhibit, there's a green line. The green line  
14 says "Former PNM Impoundment (Remediated)". That's where  
15 their pit was. Keep in mind that contamination doesn't  
16 move straight down but out in a bell shape.

17 And if you look at this exhibit, Mr. Rosasco's  
18 testimony points out that the highest contamination, the  
19 greatest quantity of contamination, lays directly under  
20 their pit. And his testimony is that some of it came from  
21 that pit. And I submit to you, at the end, that's all you  
22 have to conclude. And for that reason you will conclude  
23 that they can't go home before the job is done.

24 I think -- and I always am criticized by OCD  
25 Examiners for saying this, but I think it's important to



1 point out. I always tell you that you have to remember  
2 that you're a creature of statute and that your powers are  
3 expressly defined and limited by law. I think when you  
4 forget that, it makes the case more complicated. What you  
5 must do is apply statutes and rules to the facts.

6 And it's important in this case, because OCD  
7 rules define the term "responsible person". That's what  
8 you're asked to conclude. Is PNM a responsible person?  
9 And that is by definition an owner or operator who must  
10 complete Division-approved corrective action for pollution  
11 releases. They want you to say they do not have to  
12 complete Division-approved corrective action for pollution  
13 releases.

14 Their evidence admits that they owned and  
15 operated the dehydrator and the inlet separator on that  
16 dehydrator at the Hampton 4M well site. The evidence shows  
17 they were directed March 13, 1999, to take action to  
18 investigate and remediate the contamination. And the  
19 question then is, whether or not they should be relieved of  
20 any responsibility for cleaning up this site. They seek to  
21 be excused, even though they admit that sources of  
22 dissolved-phase groundwater contamination were not  
23 physically removed from the site when they completed their  
24 excavation.

25 Their evidence goes on beyond that, and they say

1 that, in fact, the contamination under their site wasn't  
2 removed until Burlington in 1998 and 1999 did it. But yet  
3 they come back and they say, now, admitting that we removed  
4 it under their site, admitting that they've been directed  
5 to do more work, they should be allowed to go home before  
6 the job is done.

7 At the end of this case it's going to be as  
8 simple as it is right now. The question is, is PNM a  
9 responsible person? Should they be required to complete  
10 Division-approved corrective action for pollution to which  
11 they contributed?

12 CHAIRMAN WROTENBERY: Thank you, Mr. Carr.

13 Mr. Carroll?

14 MR. CARROLL: May it please the Commission, I'll  
15 be brief.

16 The Division finds itself in a very welcome  
17 position -- well, other than being here today.  
18 Increasingly, the Division finds contaminated sites with no  
19 responsible person to pursue. In this case we have two  
20 responsible persons, or companies, because there are two  
21 sources of hydrocarbon contamination.

22 One of these companies, Burlington, admits its  
23 operations are a source of contamination and is taking  
24 substantial cleanup actions. The other company, PNM, took  
25 actions when it first discovered groundwater contamination

1 underneath its former dehydrator pit.

2           However, when PNM learned that there was another  
3 source of contamination upgradient of its pit, it stopped  
4 its further cleanup operations, appealed the Division  
5 directive to take additional actions, claiming that the  
6 only source of the continuing contamination was  
7 Burlington's pit upgradient. PNM did continue to operate  
8 the monitor wells and product-recovery wells that it was  
9 already operating.

10           The evidence clearly shows that there are two  
11 sources of contamination at the Hampton 4M site and that  
12 substantial contamination exists underneath each of these  
13 companies' unlined pits, extending from the bottoms of  
14 these pits all the way to groundwater.

15           The Division witness, Bill Olson, an expert in  
16 his field and who oversees and is overseeing the  
17 investigation and cleanup of hundreds of sites of  
18 groundwater contamination, will testify that many sites  
19 with groundwater contaminated with free product have soil  
20 contamination far short of saturation.

21           He will also testify that he has seen sites with  
22 groundwater free-product contamination where the only  
23 possible source was a dehydrator.

24           He will also testify that in his experience the  
25 greatest concentration of groundwater free-product

1 contamination is found directly underneath the primary  
2 source of contamination.

3 Bill and the Division's Environmental Bureau have  
4 heard all the evidence produced by PNM to show that PNM  
5 should be absolved of further liability. That includes the  
6 information provided by both PNM and Burlington prior to  
7 the appeal being filed, the information provided by both  
8 companies after the appeal was filed, the testimony and  
9 evidence presented at the Division hearing, the testimony  
10 and evidence filed in this case. And presented so far has  
11 changed their minds that both PNM and Burlington should be  
12 held responsible for the groundwater free-product  
13 contamination underneath and downgradient of PNM's pit.

14 Likewise, the Division Examiner, who is highly  
15 qualified in environmental matters, heard all of the  
16 evidence introduced by PNM in the Division case and held  
17 that PNM was jointly responsible with Burlington for the  
18 groundwater free-product contamination underneath and  
19 downgradient of PNM's pit.

20 It is for this Commission, after the evidence  
21 presented today -- I guess I'm optimistic; hopefully it  
22 will end today -- to decide whether PNM should be held  
23 responsible for its dehydrator pit contamination which is  
24 shown to have migrated down to the groundwater underneath  
25 its pit. The Division is confident the Commission will

1 hold PNM responsible.

2 Thank you.

3 CHAIRMAN WROTENBERY: Thank you, Mr. Carroll.

4 MR. CARR: May it please the Commission, I've  
5 been receiving a flurry of notes that I misspoke. In my  
6 opening I said --

7 CHAIRMAN WROTENBERY: We recognized this.

8 MR. CARR: -- Burlington received the March 13,  
9 1998 letter. I misspoke, that was PNM.

10 CHAIRMAN WROTENBERY: Okay, that's noted for the  
11 record.

12 I think, then, we're ready to take up PNM's  
13 witnesses in this case.

14 MR. ALVIDREZ: May it please the Commission, we  
15 would call Toni Ristau to the stand.

16 TONI K. RISTAU,  
17 the witness herein, after having been first duly sworn upon  
18 her oath, was examined and testified as follows:

19 DIRECT EXAMINATION

20 BY MR. ALVIDREZ:

21 Q. Good morning, Ms. Ristau. Would you please state  
22 your name for the record?

23 A. My name for the record is Toni K. Ristau.

24 Q. And where are you employed, Ms. Ristau?

25 A. I'm employed by PNM in their Albuquerque offices

1 at MS 408, Alvarado Square, Albuquerque, New Mexico.

2 Q. And Ms. Ristau, have you submitted prepared  
3 prefiled direct testimony in this case?

4 A. Yes, I have.

5 Q. And is that prefiled direct testimony contained  
6 in PNM Exhibit A and consisting of a cover page, together  
7 with 41 pages of testimony and your affidavit?

8 A. Let me double-check, but I believe so, yes. Yes,  
9 it is.

10 Q. And Ms. Ristau, was this testimony prepared by  
11 you?

12 A. Yes.

13 Q. And Ms. Ristau, if you were -- Well, let me ask,  
14 are there any changes or corrections that you would like to  
15 note for the record on your testimony?

16 A. There is one change that I would consider  
17 substantive, and it has to do with one of the exhibits  
18 actually, not the textual.

19 Q. Tell us which exhibit that is.

20 A. It's PNM Exhibit 8.

21 Q. Okay.

22 A. Anybody needs time to get there. There's a  
23 notation on that exhibit that is denominated "PNM Trench".  
24 That is incorrect, that should actually be labeled  
25 "Burlington Trench" to avoid any confusion, because it's

1 referred to in testimony.

2 Q. That's Exhibit 8 relating to groundwater  
3 elevations in July of 1998?

4 A. Yes.

5 Q. Are there any other corrections that you would  
6 note for the record?

7 A. Not that I have noted, no.

8 Q. Ms. Ristau, have you also submitted prefiled  
9 rebuttal testimony in this case?

10 A. Yes, I have.

11 Q. And that's been marked as part of PNM Exhibit B  
12 [sic], consisting of a cover page and 16 pages of testimony  
13 and your affidavit?

14 A. Yes, it is.

15 Q. And do you have any changes or corrections to  
16 your rebuttal testimony for the record?

17 A. No, I have found none.

18 Q. If you were asked the same questions that are set  
19 forth in your prefiled direct testimony and your rebuttal  
20 testimony today, would your answers be the same as stated  
21 in those pieces of testimony?

22 A. Yes, they would.

23 Q. And have you previously been recognized as an  
24 expert on groundwater-contamination matters in testimony  
25 before the OCD Hearing Examiner in this case?

1           A.    Yes, I have.

2           MR. ALVIDREZ:  With that, we would move the  
3 admission of Ms. Ristau's testimony as set forth in PNM  
4 Exhibits A and B.

5           MR. CARR:  No objection.

6           MR. CARROLL:  No objection.

7           CHAIRMAN WROTENBERY:  Okay, Ms. Ristau's  
8 testimony, set forth in Exhibits A and B is admitted into  
9 the record.

10          MR. ALVIDREZ:  And we would tender Ms. Ristau for  
11 cross-examination.

12          CHAIRMAN WROTENBERY:  Thank you very much, Ms.  
13 Ristau.

14          Mr. Carr?

15          MR. CARR:  Thank you.

16                               CROSS-EXAMINATION

17   BY MR. CARR:

18          Q.    Ms. Ristau, just to be sure we're all sort of on  
19 the same page, I'm going to ask you a few questions and see  
20 if we're in agreement on these things.

21                You would agree with me that the issue before  
22 this Commission is whether or not PNM is a responsible  
23 person for additional remediation of this site; isn't that  
24 correct?

25          A.    Not entirely, no.



1 Q. What else is before the Commission?

2 A. The issue is whether PNM has already completed  
3 its remediation at --

4 Q. And if --

5 A. -- this site.

6 Q. And if the Commission finds they've completed it,  
7 then the conclusion would be that PNM should be excused  
8 from further remediation?

9 A. From further responsibility, yes.

10 Q. A few minutes ago, I read the definition of a  
11 responsible person out of the OCD Rules. Are you familiar  
12 with that definition?

13 A. Yes. Just for my own information, is that the  
14 responsible person from --

15 Q. Yes, it is.

16 A. -- from the abatement regulations?

17 Q. From the general rules of the OCD. It's the one  
18 that says a responsible person is the owner or operator who  
19 must complete Division-approved corrective action for  
20 pollution releases.

21 My question is, you agree with me that PNM owned  
22 and operated the dehydrator at the Hampton 4M well site, do  
23 you not?

24 A. Yes, they did.

25 Q. Do you agree with me that the inlet separator on

1 that equipment was equipped with a discharge valve through  
2 which water and hydrocarbons were discharged into an  
3 unlined surface pit?

4 A. The exact configuration of the equipment is not  
5 my area of expertise, but in general terms I would agree,  
6 yes.

7 Q. Would you agree with me that the discharge valve,  
8 or the point of discharge out of the separator into the  
9 pit, is the release point for hydrocarbons?

10 A. From that particular piece of equipment, yes.

11 Q. That's where the product from that equipment  
12 escapes to the environment?

13 A. If there is any product through that equipment,  
14 that's where it would be discharged, is my understanding.

15 Q. And you agree with me that there were some  
16 hydrocarbons discharged into that pit at the Hampton 4M?

17 A. Yes, we discovered that through our own remedial  
18 efforts.

19 Q. And you agree there have been more than one  
20 points of release of hydrocarbons at the site?

21 A. More than -- As far as --

22 Q. Yes --

23 A. -- the entire wellpad --

24 Q. -- the entire --

25 A. -- are you referring --

1 Q. -- site

2 A. Yes, I do agree.

3 Q. And you agree there's contamination there today?

4 A. There is contamination there today.

5 Q. Is there free-phase contamination, in your  
6 opinion, there today?

7 A. In my opinion, there is still free-phase  
8 contamination substantially upgradient of PNM's former  
9 operations, yes.

10 Q. Is there dissolved-phase contamination at the  
11 site today?

12 A. Every time you have free-phase you will have  
13 dissolved-phase in substantial exceedence of the  
14 groundwater standards, yes.

15 Q. That dissolved phase extends downgradient from  
16 this site, does it not?

17 A. Yes, it does.

18 Q. Several hundred, maybe 1000 feet?

19 A. I don't recall the exact figure, but that sounds  
20 about right.

21 Q. And that's downgradient from both the PNM  
22 operations and the Burlington operations at this location?

23 A. Right, the sequence, as we've explained, is that  
24 Burlington is the furthest upgradient, PNM is downgradient  
25 from Burlington, and then of course the plume is

1 downgradient from both.

2 Q. Would you agree with me that free-phase  
3 hydrocarbons may have been deposited in the PNM former  
4 dehydration pit?

5 A. There may have been free-phase hydrocarbons in  
6 the pit, but I do not agree that those necessarily went to  
7 the groundwater.

8 Q. But you don't quarrel with me that it is possible  
9 that, in fact, free-phase may have been discharged from the  
10 dehydrator?

11 A. Free-phase may have been discharged from the  
12 dehydrator. What I don't agree with is that it went to the  
13 groundwater beneath our pit.

14 Q. Would you agree with me that PNM is a potential  
15 source of contamination at this site?

16 A. Yes, we readily agreed to that when we remediated  
17 our former pit.

18 Q. And that would mean the dissolved-phase  
19 contamination?

20 A. That means the soil contamination. That is what  
21 we discovered when we remediated our pit.

22 Q. Would that include the dissolved-phase in the  
23 plume that extends downgradient from the site?

24 A. Well, that one is problematic, because the  
25 overwhelming amount of free product at this site so masks

1 any contribution that PNM's minor amount of soil  
2 contamination could have contributed, that is difficult to  
3 determine.

4 Q. So it is your testimony that you may not have  
5 contributed to the plume that extends downgradient from the  
6 site?

7 A. That is an unknown.

8 Q. Is it possible that you did?

9 A. It is possible.

10 Q. You would agree with me that that plume is moving  
11 toward offsetting properties?

12 A. Towards -- Excuse me?

13 Q. Toward Dr. Everett's home?

14 A. It appears that way if you look at the maps, yes.

15 Q. Would you agree with me that in March of 1998,  
16 the OCD directed PNM to investigate and remove remaining  
17 source areas with free-phase hydrocarbons in the vicinity  
18 and downgradient of the site?

19 A. You're talking the March, 1998, order that we  
20 appealed?

21 Q. Yes.

22 A. Yes, they did.

23 Q. When I read the testimony of Valda Terauds, there  
24 was some question about why the appeal was made. Did Mr.  
25 Anderson at the OCD tell you to do it, or did he just say

1 you could do it?

2 A. We discussed with the OCD our concerns about the  
3 large amount of free product at this site, particularly  
4 when it became apparent that it was substantially  
5 upgradient from the PNM pit and could not possibly have  
6 been deposited through the PNM pit.

7 At that point, we were of the opinion that it  
8 would be very difficult for us to effectively remediate the  
9 site, absent someone addressing that upgradient free-phase  
10 release. In other words, you can pump till the cows come  
11 home, but until you find out where that release is coming  
12 from, it's likely to be futile, and that was our concern.

13 We had some discussions with the OCD, we had a  
14 free-product recovery system going, and we said, Look, we  
15 need to find out where this additional source is or where  
16 the release is coming from.

17 Q. My question was, you weren't told to appeal this,  
18 you were told you could if you disagreed; is that correct?

19 A. We could if we disagreed, because there seemed to  
20 be no other mechanism at the time to get those upgradient  
21 releases addressed.

22 Q. You were involved with this whole process during  
23 1998, were you not?

24 A. During 1998, yes.

25 Q. There was a second directive from the OCD in

1 September, requiring that additional investigation and  
2 remediation be conducted at this site; is that correct?

3 A. I believe so. Could you refer to the exact  
4 exhibit?

5 Q. The September 1st letter from Mr. Olson, both to  
6 PNM and Burlington?

7 A. Could you refer to the exhibit so I can double-  
8 check?

9 Q. Exhibit Number --

10 A. I'm sorry, I just want to double-check to make  
11 sure.

12 Q. It's our Exhibit Number -- Burlington Exhibit  
13 Number 18, and --

14 A. Please bear with me a moment.

15 Q. -- and PNM Exhibit 27.

16 A. PNM 27, okay. Okay, I'm on the same page with  
17 you now.

18 Q. And in that exhibit, again, the OCD directed both  
19 PNM and Burlington to undertake additional investigation  
20 and remediation actions at the site; is that correct?

21 A. Yes.

22 Q. Following -- In response to either the -- both  
23 the March 13 directive and the September 1 directive, you  
24 would agree that PNM did not undertake any new or different  
25 remediation actions at the site?

1           A.    No, we continued to operate our recovery well  
2    which had at that time recovered several hundred gallons of  
3    free product, and we also continued monitoring and other  
4    activities in accordance with our groundwater management  
5    plan at that point.

6           Q.    Other than appealing this decision, did you  
7    undertake any new investigation or new remediation  
8    activities at the site?

9           A.    No, because our position is that we had already  
10   completely investigated and remediated, to the extent that  
11   we could, our portion of the site. We were then waiting  
12   for Burlington to undertake the investigation of their  
13   portion of the site.

14          Q.    You sought a stay of the OCD directive, did you  
15   not?

16          A.    Yes, because we again thought it would be  
17   fruitless to initiate additional active remediation unless  
18   and until that upgradient release could be located and --

19          Q.    And the stay --

20          A.    -- addressed.

21          Q.    -- was denied, was it not?

22          A.    I believe -- I'm not sure. I believe so.

23          Q.    You're not testifying that you have complied with  
24   either the March 13, 1998, directive or the September 1 --

25          A.    I am --



1 Q. -- directive?

2 A. -- testifying that we continued to operate our  
3 free-product recovery system, and we continued to operate  
4 under our existing groundwater management plan, which was  
5 approved by the OCD.

6 Q. Were you involved in meetings with Burlington  
7 representatives concerning how the September 1 letter  
8 should be responded to?

9 A. I don't recall. We had several meeting with  
10 Burlington, but I don't remember which things were  
11 addressed at which meetings at this point.

12 Q. Do you recall that no agreement was reached  
13 between Burlington and PNM for a cooperative effort in  
14 response to the September directive?

15 A. I recall at one point. I'm not sure if it's in  
16 regard to the September 7th directive or not, but -- or  
17 September 1st directive, excuse me. The sticking point was  
18 that Burlington had some concerns about paying the full  
19 costs of that investigation, so...

20 Q. PNM was not willing to contribute to the costs  
21 for --

22 A. Oh, yes, we were very willing to contribute to  
23 the costs, but we needed to recoup our actual costs, and  
24 Burlington was not willing to pay for a portion of those  
25 costs, yes.

1 Q. Burlington wasn't willing to pay for costs you  
2 had incurred; is that right? Prior to that time?

3 A. Well, they weren't willing to incur for our staff  
4 time for the continuing investigation. Their position was,  
5 they only wanted to pay the contractor costs. Unlike  
6 Burlington, we've been doing a lot of this work in-house  
7 with our own scientists and engineers.

8 Q. And so you felt that Burlington should pay your  
9 employees for working on this?

10 A. Certainly. If they were going to not do that,  
11 then we would have to hire a contractor at three times the  
12 cost, and we didn't think that was a cost-effective way to  
13 go.

14 Q. Following these negotiations, Burlington demanded  
15 that PNM go out and remediate the site, correct?

16 A. Burlington demanded?

17 Q. That PNM go out and remediate the site?

18 A. I am not aware of that. Is there a letter or  
19 something to that effect, that demand? And that would be  
20 an odd demand since PNM was already remediating the free-  
21 product contamination at the site.

22 Q. Is Exhibit 19 in the Burlington exhibits -- It's  
23 a letter dated October 26, 1998, from me to Mr. Alvidrez --

24 A. Excuse me, could you --

25 Q. It's Exhibit 19.

1 A. Burlington Exhibit 19?

2 Q. Correct.

3 A. Okay. Again, we took issue with this, since were  
4 actively remediating free-product contamination at that  
5 point, and there was little point in doing anything else  
6 unless and until Burlington finished their investigation of  
7 the upgradient sources.

8 Q. Did you understand my question, whether or not  
9 Burlington had demanded that PNM immediately undertake  
10 remediation of the site?

11 A. Right, but we were already remediating at that  
12 point, so that demand had already been satisfied.

13 Q. And are you aware that the response to that --  
14 and it's the next exhibit, Exhibit 20 -- from PNM, on page  
15 2, of a letter from Mr. Alvidrez to me reads:

16  
17 Under the circumstances described above, we must  
18 respectfully decline your directive to immediately  
19 undertake remediation. However, we encourage  
20 Burlington to immediately proceed with remediation.

21  
22 You're aware of that?

23 A. Yes, and if you look at the foregoing, we  
24 delineate what we were already doing to remediate the site.

25 Q. So that takes us to the point where Burlington

1     went out to the site?

2           A.     Well, they went out in November, so about a month  
3     or so before.

4           Q.     Were you involved with the efforts of PNM to  
5     excavate the area around its former dehydration pit back in  
6     1996?

7           A.     Personally, no, I was not.

8           Q.     Are you familiar with those activities?

9           A.     Yes, but not from personal observation, no.

10          Q.     Is it correct that the remediation effort  
11     conducted at that site involved removing contaminated soils  
12     to a depth of 12 feet?

13          A.     If that's what it says in the exhibit. If you  
14     want specifics, I'd suggest you talk to the technical  
15     witnesses, who have better knowledge of that than I do.

16          Q.     I have a general question, and it sort of goes  
17     through all the testimony, and if you can't answer it,  
18     fine, I'll ask someone else, but --

19          A.     Okay.

20          Q.     -- throughout your testimony you talk about the  
21     pit bottom or the bottom of the pit.

22          A.     Yes.

23          Q.     And the question I have is, when you use that  
24     term are you talking about the bottom of the pit at the  
25     time there were discharges coming out of the separator, or

1 are you talking about the excavation, or are you talking  
2 about the black soil at 14 feet?

3 A. Okay, I guess I would need to see the specific  
4 reference, because it's referred to in different ways in  
5 different places.

6 Q. Do you know what depth of groundwater -- I will  
7 explore this with the other witnesses, if you don't know,  
8 but you would agree with me that you have a pit bottom at  
9 some -- It was a depression in the ground, an unlined pit?

10 A. Right.

11 Q. And then when you came back, you excavated down  
12 to, say, 12 feet. That would be another bottom. You'd  
13 have a bottom of the excavation?

14 A. Yes.

15 Q. And below that there is another zone at 14 feet  
16 that may also be called the pit base or pit bottom,  
17 something like that?

18 A. Without, you know, committing to the exact  
19 numbers --

20 Q. Right.

21 A. -- because I don't recall offhand, that is in  
22 general a correct description, yes.

23 Q. You are aware that there was an excavation?

24 A. Yes.

25 Q. When you concluded the excavation, there were PID

1 readings, correct?

2 A. Pardon me?

3 Q. PID, photo-ionization --

4 A. Oh, PID, photo-ionization detector readings?

5 Q. Yes. And those PID readings, at the time you  
6 completed the excavation, were in excess of OCD standards?

7 A. Again, I would defer to the witnesses that have  
8 the more exact information. But yes, there were some  
9 readings, PID readings, that were in excess.

10 Q. When we look at your testimony, you talked about  
11 vertical drilling at the Hampton 4M site, and you state  
12 that groundwater was encountered at approximately 28 feet  
13 below the surface; is that correct?

14 A. Again, without referring to the exact numbers,  
15 that seems about right, yes.

16 Q. But as to the technical parts of this, even  
17 though you may give the numbers in your testimony, you  
18 would like us to refer to someone else?

19 A. Well, if you want details about exactly what was  
20 observed and so forth, I did not observe them personally.  
21 It would be better to talk to the people who did.

22 Q. Is there an OCD standard for a PID reading, above  
23 which -- or below which it's safe to close or leave the  
24 site?

25 A. Again, I would defer for the exact numbers to the

1 other witnesses, but my understanding is that guidelines  
2 are keyed to the amount of risk. And that's in part  
3 defined by which vulnerable area it lay in, and it's in  
4 part defined by the amount of residual that the OCD has  
5 determined may remain in the soil, and it still can be  
6 closed because it will not constitute a substantial threat  
7 to groundwater.

8 Q. Do you know whether or not when you closed this  
9 pit, or when you filled it with fill dirt, whether or not  
10 there was contamination in that pit in excess of the OCD  
11 closure guidelines?

12 A. There was. That's why we went back to do the  
13 vertical profiling per OCD direction.

14 Q. And following that 1996 excavation and filling of  
15 the old pit with the contamination left in place --

16 A. Yes.

17 Q. -- PNM has conducted no further excavation at the  
18 site?

19 A. Not in the area of their pit at this site, no.

20 Q. Where else did you, at this site?

21 A. Well, we've continued with investigatory  
22 activities, but we have not re-excavated our pit.  
23 Burlington did that for us.

24 Q. In the testimony, there are references to  
25 physical constraints at the site that limited how deep you

1 could excavate the pit?

2 A. Yes.

3 Q. Are you the witness to talk to about that?

4 A. In part, because I've been on the site. But  
5 another witness or two may be able to give you more  
6 specifics. Basically, the wellpad is cut and fill on a  
7 substantial slope. Our old pit was on the northern end of  
8 the wellpad, which is quite close to the cut slope, and we  
9 had concerns even during the excavation. We had some  
10 sloughing and so forth, and we were concerned about the  
11 integrity of the slope and did not want to cause a cave-in  
12 or sloughing down the arroyo. So we were limited by that,  
13 yes.

14 Q. So you couldn't get too near the edge of the pad?

15 A. Right, not without danger of causing sloughing of  
16 the wellpad and so forth.

17 Q. You also had the placement of the dehydration  
18 unit, the old PNM dehydration unit on that location, did  
19 you not?

20 A. Pardon me?

21 Q. The old --

22 A. As a constraint?

23 Q. Yes.

24 A. Well, various pieces of equip- -- It's, in  
25 general, a fairly constrained wellpad compared to some that



1 you see, because of the arroyo running right past, it's on  
2 a substantial slope. In some areas, working around the  
3 equipment is difficult with heavy equipment, and so there  
4 were constraints posed by Williams' dehy's, which were on  
5 the site and -- or dehy. The meter house and the pipe  
6 runs, the wellhead itself, the cathodic protection, they  
7 all produced constraints of one sort or another.

8 Q. And when you talk about the Williams dehydrator,  
9 that's the same equipment that had previously been owned and  
10 operated by PNM?

11 A. Yes, until June 30th of 1995 we operated that  
12 equipment.

13 Q. Are you aware of any requests to Williams or  
14 Burlington or anyone to move that equipment so you could  
15 conduct the excavation and remediation of your pit?

16 A. Again, I would defer to the technical witnesses  
17 who have more knowledge of the actual activities. On  
18 occasion at other sites, we have indeed asked them to move  
19 equipment or shut it in temporarily, or whatever, whatever  
20 we need to do to operate safely.

21 Q. You would agree with me that in the winter of  
22 1998-99, in fact, Burlington was able to get that equipment  
23 moved and remediate substantially more soil under the  
24 location of the old PNM pit?

25 A. As far as talking to Williams about moving their

1 equipment, you mean?

2 Q. Yes.

3 A. I believe that's the case, because that entire  
4 area is still depressed for several feet from the original  
5 wellpad grade, and the equipment is now not in the same  
6 location that it was.

7 Q. Mr. Heath is going to testify about the equipment  
8 at this site. You have basically summarized in your  
9 presentation a part of his testimony. Is it your  
10 understanding that the equipment that you were operating at  
11 the site was designed to shut down if, in fact, large  
12 amounts of liquid hydrocarbons came into your dehydrator?

13 A. Is it my understanding? Again, I would defer to  
14 Mr. Heath since he designed and patented those machines.  
15 But yes, that is my understanding.

16 Q. And do you have any information as to how that  
17 equipment was actually set or operated from -- during the  
18 period of time that PNM actually owned an operated this  
19 equipment.

20 A. Again, I would defer to Mr. Heath because he  
21 actually interviewed the field people that were responsible  
22 for that equipment.

23 Q. Your testimony talks about the gas purchasing  
24 agreement?

25 A. Yes.

1 Q. I think it's probably my exhibit -- or  
2 Burlington's Exhibit Number 1 and -- I'm not sure.

3 A. PNM Exhibit Number 12, I bet.

4 Q. Okay.

5 A. It's the thickest one.

6 Q. If I understand your testimony, you testified  
7 that the contamination at the site has got to be the  
8 responsibility of Burlington because, in fact, at the time  
9 it was released to the environment we owned it; is that a  
10 fair statement?

11 A. Could you --

12 Q. Or you may want to restate it.

13 A. Well, can you refer to what you're talking about,  
14 and I can verify that for you, please?

15 Q. On page 33 of your testimony the question is, "At  
16 what point does title to the gas pass from the producer to  
17 PNM?"

18  
19 My understanding is that under the gas purchase  
20 contracts that were in effect at the time that PNM  
21 owned and operated dehydration equipment at the site,  
22 PNM took title and control of the gas at the meter  
23 orifice...

24  
25 That's the point of --

1 A. Yes.

2 Q. -- when the title passes.

3 Is it your testimony that if the product is  
4 released to the atmosphere, before it gets to that point,  
5 the meter orifice, that it is the responsibility of the  
6 producer, Burlington, not PNM?

7 A. Before it gets to the meter orifice?

8 Q. Yes.

9 A. Yes. They are the ones who released the  
10 substance, after all.

11 Q. Okay, I'd like you to go to page 20 at this time,  
12 of the gas purchase agreement --

13 A. Okay.

14 Q. -- and this "Quality" section. Are you there?

15 A. Yes.

16 Q. Right after subsection 11.1 it talks about  
17 specifications, and it says "Buyer". That would have been  
18 PNM, would it not?

19 A. At that point in time, yes.

20 Q. "Buyer may at its sole option decline to accept  
21 gas tendered for delivery hereunder which not conform to  
22 the following specifications:" And under that it says  
23 "Liquids", and it says, "(i) The gas shall be free of  
24 objectionable liquids." Do you see that?

25 A. In Roman numeral "i"?

1 Q. Yes.

2 A. Yes.

3 Q. Would liquid hydrocarbons in that gas stream be  
4 objectionable liquids?

5 A. Again, I will defer to Mr. Heath for more detail,  
6 but my understanding is yes.

7 Q. Are you aware as a representative of PNM, at any  
8 time during the life of this contract when you may have  
9 declined to accept gas tendered to you for not conforming  
10 to these specifications?

11 A. I'm not aware, so it must have meant that we  
12 didn't receive any liquids, objectionable liquids, at our  
13 dehydrator or at our meter orifice.

14 Q. So that's how you would read this?

15 A. Yes.

16 Q. You would read that there are liquid hydrocarbons  
17 in the pit?

18 A. There are liquid hydrocarbons in the pit?

19 Q. Yes. There were.

20 A. Observations apparently were made that there were  
21 hydrocarbons in the pit. I don't know that there was  
22 liquid free-phase hydrocarbon in the pit, no.

23 Q. So what came into your equipment, you're  
24 assuming, was not objectionable to you?

25 A. Well, the reason the dehydrator is there is to

1 make sure that those objectionable liquids do not go  
2 downstream.

3 Q. The dehydrator -- The right to put the dehydrator  
4 on this particular lease is addressed in Roman numeral  
5 (iii) of this section of the contract, is it not?

6 A. Yes, it is.

7 Q. And that section says:

8  
9 If in Buyer's sole judgment the gas deliverable  
10 from any Subject Well other than a New Subject Well  
11 contains sufficient moisture to require installation  
12 of dehydration equipment, such equipment shall be  
13 installed, maintained and operated by Buyer at Buyer's  
14 sole expense...

15  
16 That's what it says, correct?

17 A. Yes. You will also notice it says "moisture", it  
18 does not say hydrocarbons.

19 Q. PNM elected under this provision to put a  
20 dehydrator on the unit, correct?

21 A. Well, PNM's predecessor did, is my understanding.  
22 And it was under this section that PNM was operating the  
23 dehydrator on this lease?

24 A. And that is my understanding, yes.

25 Q. And it was operated by PNM?

1 A. During what time frame?

2 Q. While you were buying gas from the Hampton 4M  
3 well?

4 A. Yes, until June 30th, 1995, yes, it was.

5 Q. And you weren't required to put the equipment on  
6 this well, were you?

7 A. No. There was sufficient moisture in the gas  
8 stream, though, we had the option of installing the  
9 dehydration equipment to protect our system.

10 Q. And it was in your sole judgment, it was your  
11 decision to put it there?

12 A. Yes.

13 Q. You could have refused to accept gas if it had  
14 liquids in it, correct?

15 A. Right, so I guess what you'd abstract from that,  
16 once again, is that it did not contain liquids, any  
17 substantial amount of liquids, objectionable liquids.

18 Q. Instead of putting a dehydrator on it, you could  
19 have simply said to the operator, If it doesn't meet our  
20 specifications we won't take that gas? Isn't that an  
21 option?

22 A. We could have done that. And since we didn't,  
23 again, I guess the conclusion would have to be that we did  
24 not receive large amounts of objectionable liquid at the  
25 dehydrator.

1 Q. But you were receiving some liquids, isn't that  
2 obvious?

3 A. Yes.

4 Q. You wouldn't have put the dehydrator there if you  
5 hadn't?

6 A. Right, but there must not have been large  
7 amounts, certainly not enough to cause five feet of free  
8 product on the water table below our pit.

9 Q. Is it your testimony that PNM would have no  
10 control over free product reaching its equipment?

11 A. That we would have no control over free product  
12 reaching our equipment?

13 Q. Yes.

14 A. That is true, yes. That's my understanding.

15 Q. You're --

16 A. Excuse me, let me finish. My understanding is  
17 that common oilfield practice and as the practice at this  
18 site, that PNM or anyone who runs a dehydrator on this site  
19 has absolutely no control of the production unit, which is  
20 upstream of that dehydrator.

21 Q. Isn't it true that this equipment was -- that the  
22 equipment had a sensing valve on it --

23 A. That is --

24 Q. -- that would have shut in the Burlington well  
25 if, in fact, objectionable liquids were coming to it?



1           A.    It's my understanding, yes, and I believe Mr.  
2 Heath's testimony shows that in his discussions with the  
3 field people, the well was shut in on occasion, which  
4 indicates that the sensing unit was operating correctly.

5           Q.    Wouldn't you agree with me that if you could shut  
6 in the well, that would give you some control over whether  
7 or not objectionable liquids were coming to you?

8           A.    That would prevent additional ones from coming  
9 your way, but it does not control that you received a slug  
10 in the first place.

11          Q.    But it certainly would control additional  
12 objectionable liquids coming to you?

13          A.    Right, so again the conclusion would have to be  
14 is that large amounts of free product didn't go through our  
15 dehydrator. The sensing element was operating correctly.

16          Q.    Now, suppose for the purposes of this testimony  
17 that liquids did come into the PNM separator.

18          A.    We didn't have a separator. It was actually a  
19 dehydrator.

20          Q.    You had an inlet separator on your dehydrator,  
21 did you not?

22          A.    A small inlet separator, yes.

23          Q.    And I'm talking about the separator.

24          A.    Okay.

25          Q.    Suppose there were liquids in that separator.

1 A. Yes.

2 Q. If they were discharged out of that piece of  
3 equipment onto the ground, PNM would be responsible for  
4 that discharge, would they not?

5 A. Yes, and we have accepted that responsibility by  
6 remediating the contaminated soil in our former pit area.

7 Q. That discharge wouldn't be Burlington's fault,  
8 would it? It would be yours?

9 A. No, I don't agree with that. Again, the only  
10 reason that large amounts of free liquids would hit our  
11 equipment is if there was a malfunction of Burlington's  
12 upstream equipment.

13 Q. You knew, in fact, that at every well  
14 periodically liquid hydrocarbons do come into your  
15 equipment; isn't that a fair statement?

16 A. Yes, and at every other site but this we have not  
17 seen free-product contamination coming through our  
18 dehydrator.

19 Q. And how many pits, do you know, approximately,  
20 have you remediated under your pit-remediation program  
21 within the last, say, five years?

22 A. Let's see, I'll defer you to the other witness if  
23 you need the exact number, but it's approximately 1200  
24 pits.

25 Q. And in those 1200 pits there have been

1 hydrocarbon shows in virtually all of them; isn't that  
2 right?

3 A. But not free product.

4 Q. But you've had contamination in all those pits?

5 A. Right, and we remediated all 1200 of those pits,  
6 took responsibility for them.

7 Q. And you knew, there are some other pits with  
8 free-phase hydrocarbons and some other sites, are there  
9 not?

10 A. Yes, and in every case those are issues where  
11 there is another source and not PNM pit as the sole source  
12 on the site.

13 Q. Is this case being used to set a precedent for  
14 those particular other sites?

15 A. You know, it's up to OCD, I guess, to set  
16 whatever precedent they want to regarding free product in  
17 the pits or associated with wellhead sites.

18 Q. I think your testimony was that it's PNM's  
19 position that whoever releases a product to the  
20 environment, that's the person who should be responsible  
21 for cleaning it up; is that a fair statement?

22 A. That's consistent with the statutory  
23 requirements, yes.

24 Q. And that would be PNM's position?

25 A. Yes.

1 Q. In your rebuttal testimony you've discussed some  
2 of the issues concerning on-site land-farming and the  
3 recent dispute between Burlington and PNM on that issue?

4 A. Yes.

5 Q. You would agree with me that that has nothing to  
6 do with whether or not you actually contributed to the  
7 original contamination at the site, wouldn't you?

8 A. At this particular site?

9 Q. Yes.

10 A. It does not, no.

11 Q. Thank you.

12 A. It only goes to the matter of whether we had open  
13 and free access for all of our remediation operations on  
14 Burlington-operated sites.

15 Q. And other than this recent issue, have you ever  
16 been denied access by Burlington?

17 A. Have we ever been denied? I would defer to other  
18 witnesses on that issue.

19 Q. Do you know of any time that you were not allowed  
20 to --

21 A. I know there have been some tiffs in times past,  
22 but I can't speak to the specifics.

23 Q. You can't give me an example?

24 A. I can't, no, but other witnesses may be able to.

25 Q. And again, I recognize that your testimony is

1 sort of a summary of things to come, and I will ask  
2 questions of other witnesses. I'd like to ask you a few  
3 questions, though, about the concerns that you have  
4 expressed about Burlington's remediation efforts at the  
5 site.

6 A. Okay.

7 Q. Is it fair to say that you objected to removal of  
8 your free-product recovery well as part of this effort?

9 A. Excuse me, that --

10 Q. Did PNM object -- You objected to the removal of  
11 the free-product recovery well as part of Burlington's  
12 remediation efforts, did you not?

13 A. Yes, we did. We felt that removing a recovery  
14 well that thus far had removed over 1000 gallons of free  
15 product was not a good thing to do. It was containing the  
16 plume, no matter who caused the plume, as much as was  
17 possible to do under the constraints of the site.

18 We also had real concerns that Burlington's  
19 remediation efforts would not be nearly as effective at  
20 removing free product from the site. And free product,  
21 after all, is the remaining contamination issue at this  
22 site.

23 Q. A free-product recovery well cannot effectively  
24 address the source of contamination; isn't that correct?

25 A. Particularly if it is not located at the source

1 of the contamination. And since the source was  
2 considerably upgradient from PNM's former pit, yes, that is  
3 a fair statement.

4 Q. And so your well was not addressing the source of  
5 the contamination, correct?

6 A. No, that was Burlington's job, since the release  
7 was clearly on their portion of the wellpad.

8 Q. But you do agree that your well wasn't addressing  
9 the source, correct?

10 A. The ultimate release point, you mean?

11 Q. Yes.

12 A. You're defining that as the source?

13 Q. Yes.

14 A. No, because that source was under the sole  
15 control of Burlington.

16 Q. Your free-product recovery well was located in  
17 the general area of the old PNM pit, correct?

18 A. Yes.

19 Q. It was in the area where, when you closed the  
20 pit, there as some remaining -- there was remaining  
21 contamination, correct?

22 A. It was in the area where the free product was  
23 first discovered, essentially.

24 Q. You were planning to remove that well at some  
25 point in the near future anyway, were you not?

1 A. We had no immediate plans to remove that well.

2 Q. To go in and excavate the source, to get at the  
3 contamination that it had left behind, you couldn't. That  
4 would have been one of those obstacles that would have  
5 prevented excavation, correct?

6 A. Well, since we had already fully remediated the  
7 soil contamination at the area of our pit, we didn't see  
8 any need to go in and excavate in our area anymore. We  
9 felt that the crying need for excavation was on  
10 Burlington's portion of the wellpad.

11 Q. And you say you fully remediated the area of your  
12 pit; is that correct?

13 A. Yes.

14 Q. You're aware that following this full remediation  
15 of your pit, you had a laboratory sample run of the sample  
16 at the base of that excavation, are you not?

17 A. Yes.

18 Q. And you have reviewed Ms. Gannon's testimony as  
19 well as your own, have you not?

20 A. Yes, I have.

21 Q. Would you go to page 12 of her testimony?

22 A. In her direct?

23 Q. Yes.

24 A. Okay.

25 Q. If you go to line 10 of that -- of Ms. Gannon's

1 testimony, do you see where it says, "On April 25...we  
2 collected a laboratory sample from the pit bottom"?

3 A. Uh-huh.

4 Q. Now, would that be -- That would be the bottom of  
5 your excavation, would that be fair to say?

6 A. You'd have to confirm that with Ms. Gannon, but I  
7 think so.

8 Q. But this is the pit?

9 A. Yes.

10 Q. And this is a sample from the pit when you  
11 completed your excavation. It says:

12  
13 ...analysis provided a benzene concentration of 16  
14 parts per billion (slightly over OCD guidelines of 10  
15 parts per billion); benzene, toluene, ethylbenzene and  
16 xylenes (BTEX) concentration of 622 parts per billion  
17 (above OCD guideline of 50 parts per billion); and  
18 total petroleum hydrocarbons (TPH) concentration of  
19 1301 parts per million (above OCD guidelines of 100  
20 parts per million).

21  
22 Do you see that?

23 A. Yes.

24 Q. Is it your testimony that you completely  
25 remediated the site, leaving soil that gets this kind of a



1 result on a laboratory analysis?

2 A. You're allowed to leave contamination in place if  
3 you do further risk assessment. In fact, a boring that was  
4 done, I believe, by Burlington, confirmed that the soil  
5 column beneath our pit, the discernible pit bottom, was in  
6 fact clean enough so that had we been not constrained by  
7 the configuration of the site, had we been able to excavate  
8 to that area, we would have been able to clean-close our  
9 pit, yes.

10 Q. You're talking about Soil Boring Number 2, the  
11 one in the center of this pit?

12 A. I believe so, yes.

13 Q. And isn't that soil boring included in PNM  
14 Exhibit 15?

15 A. I believe that is correct, yes.

16 Q. And is not the laboratory analysis included in  
17 that exhibit, toward the back of that stack of material?  
18 It's an analysis from Envirotech Labs? It's right toward  
19 -- I think, actually, it's just two pages ahead of Tab 16.  
20 It's way at the back.

21 A. Two pages ahead of Tab 16?

22 Q. Yeah. Yes, ma'am. Maybe the last page -- It's  
23 the last page before Tab 16.

24 A. Okay, that isn't -- I don't know whether mine is  
25 in a different order or what, but --

1 Q. Okay, it's at the top. It's -- Written on the  
2 exhibit it says "SB-2".

3 A. Okay.

4 Q. Can you find that, Ms. Ristau?

5 A. Okay, you're talking about SB-2 at 15 feet?

6 A. At 15 feet, and it talks about -- It's got the  
7 gasoline range, diesel range and total petroleum  
8 hydrocarbons shown?

9 A. Uh-huh.

10 Q. The total petroleum hydrocarbons is 194, is it  
11 not?

12 A. Milligrams per kilogram, yes.

13 Q. And that is in excess of the 100 guideline of the  
14 OCD; is that not right?

15 A. Again, let me defer to the technical witness who  
16 has done the analysis on this, because I'm unfamiliar with  
17 this.

18 Q. This is the sample you're talking about that  
19 showed this to be a clean site that could be closed; is  
20 that correct?

21 A. I am not sure. Let me defer --

22 Q. All right.

23 A. -- to the correct technical witness on that one.

24 I think a point that can be made by that boring,  
25 though, is that the level of saturation in the soil was not

1 there -- not indicative that free product did come through  
2 the pit.

3 Q. When you go out and do a soil boring, that tells  
4 you what's exactly under that soil column going down,  
5 correct?

6 A. Depending on how the samples are taken and  
7 processed, it can.

8 Q. When you have contamination and contaminants  
9 moving through the formation, they don't always just flow  
10 straight down, do they? They -- Because of different  
11 irregularities in the soil they move in various directions  
12 and in various ways; isn't that right?

13 A. They can, but again for specifics, I would  
14 suggest you talk to the people who actually did the  
15 analysis in this particular site-specific case.

16 Q. In terms of the guidelines that you have to  
17 meet --

18 A. Yes.

19 Q. -- the OCD guidelines, before you may close a pit  
20 and be relieved of further responsibility, you do agree  
21 that total petroleum hydrocarbons is one of those  
22 standards?

23 A. Yes.

24 Q. And if you fail to meet that standard, then you  
25 still would not be in compliance or -- with the Oil

1 Conservation Division?

2 A. Well, that's a little too simplistic a statement.  
3 There are other things that need to be done.

4 Q. Until you get on top of that situation, though,  
5 and get your site in compliance with those standards, you  
6 can't close it and walk away from it, can you?

7 A. I guess that's OCD's decision, and they weigh a  
8 number of factors, including whether the soil in the pit  
9 meets guidelines or not.

10 Q. And you would also agree with me that even though  
11 they have these guidelines for soil, as soon as there is a  
12 groundwater issue those standards go away, don't they?

13 A. We're well aware of that, since we reported this  
14 as a groundwater site initially.

15 Q. You would agree that if you're reporting on a PID  
16 reading, a reading in excess of 1000 parts per million on  
17 the PID reading, that is in excess of the OCD guidelines?

18 A. Okay, excuse me. Groundwater, we reported it on  
19 the basis of an actual groundwater sample.

20 Q. I'm talking about a PID reading at the time you  
21 excavated your pit. If you had a reading in excess of 1000  
22 you, in fact, were outside the OCD guideline?

23 A. Yes, and that's why we did, in fact, go back in  
24 and do additional work at this site.

25 CHAIRMAN WROTENBERY: Mr. Carr, I think we're

1 about getting close to time for a break. Do you have quite  
2 a bit more?

3 MR. CARR: I've got a little bit more. If you'd  
4 like to take a break I'll see if I can streamline myself.

5 CHAIRMAN WROTENBERY: Okay. Why don't we go  
6 ahead, then, and take a break.

7 THE WITNESS: Appreciate it, thank you.

8 CHAIRMAN WROTENBERY: We'll come back at 11:00.

9 (Thereupon, a recess was taken at 10:45 a.m.)

10 (The following proceedings had at 11:00 a.m.)

11 CHAIRMAN WROTENBERY: Okay, why don't we get  
12 started again? Back on the record.

13 Q. (By Mr. Carr) Ms. Ristau, I was asking you  
14 questions before we broke about certain technical aspects  
15 of the case, and as I understood your answers, most of  
16 those would be more appropriately addressed to the  
17 subsequent witnesses?

18 A. As far as the detail, yes. I don't want to  
19 misspeak, and the technical witnesses can address them.

20 Q. You are the appropriate person to talk to about  
21 the contract issue, but as to these questions involving  
22 what actually happened at the site, I'd get a better  
23 answer --

24 A. -- from the people who were actually there than  
25 from me, because I was not on site as consistently as they

1 were.

2 MR. CARR: And I would advise the Commission this  
3 is not because of your break, but I have no further  
4 questions.

5 (Laughter)

6 CHAIRMAN WROTENBERY: Okay, thank you.

7 Mr. Carroll?

8 EXAMINATION

9 BY MR. CARROLL:

10 Q. Ms. Ristau, on page 32 of your testimony, your  
11 direct testimony --

12 A. Yes, sir.

13 Q. -- you list a number of what you consider to be  
14 legally erroneous findings in the Hearing Examiner's Order;  
15 is that correct?

16 A. Yes.

17 Q. Ms. Ristau, I don't understand this ownership  
18 argument you make. If my understanding is correct, you're  
19 saying because you don't own the product, you're not  
20 responsible?

21 A. We neither own nor released the product, so we're  
22 saying that as to the free product we are not responsible.

23 Q. Will you look at your Exhibit Number 11 and the  
24 order that is attached to that, particularly finding number  
25 (23)?

1 A. Okay, let me get to -- on page 4 of the order?

2 Q. Yes, will you read that finding for me, please?

3 A. On page 23 [sic], this is the OCD findings,  
4 correct?

5 Q. Right.

6 A. "The evidence indicates that soil and groundwater  
7 contamination at the Hampton 4M well site is a result of  
8 hydrocarbon releases at the facilities of both PNM and  
9 Burlington, and not from off-site sources."

10 Q. Doesn't that finding say that PNM released  
11 hydrocarbons?

12 A. We released hydrocarbons, but not the free  
13 product that is found at this site, which is the major  
14 continuing source of contamination at the site.

15 Q. Don't you agree with me that the finding in that  
16 order said you released hydrocarbons at your site?

17 A. We have never denied that we released  
18 hydrocarbons.

19 Q. I thought you just said that since you didn't own  
20 or release the hydrocarbons, that this statement was  
21 correct on line 6 of page 32 of your testimony?

22 A. Again, I am making a distinction between the free  
23 product --

24 Q. Well, I'm not.

25 A. -- and other forms of the hydrocarbons. And what

1 I have said is that we are not responsible for the free-  
2 product release and resulting contaminations. We have  
3 already remediated the other hydrocarbon release that we  
4 have caused.

5 Q. Okay, the second point you make here, "the ruling  
6 ignores the fact that PNM had no control over free product  
7 reaching its former dehydrator."

8 Did PNM have control over the free product after  
9 it reached its dehydrator?

10 A. We have no choice. Once it hits our dehydrator  
11 and goes into the dehydrator, we have it, whether we want  
12 it or not.

13 Q. Your third point here, you talk about strict  
14 liability or joint and several liability, and the liability  
15 is based upon whether a party caused the subject  
16 contamination.

17 Wouldn't you agree that finding (23) in that  
18 Order found that you caused the contamination?

19 A. We have always agreed that we caused a certain  
20 amount of the contamination but not the free-product  
21 contamination, the releases of the free product and the  
22 contamination of the general environment that occurred from  
23 those releases.

24 Q. Fourth, you state that "OCD practice and policy  
25 has been to impose liability on current operators rather



1 than past operators." Where do you get that information?

2 A. From the OCD, in discussions with the OCD. They  
3 generally hold current operators responsible, is what we  
4 were told, and we are not and were not at the time that we  
5 initiated remediation a current operator on the site.

6 Q. Would you be surprised if the correct way to  
7 state that is that OCD policy is to first impose liability  
8 on the current operators?

9 A. That would be fine. That was not done in the  
10 case of Williams at this particular site, was the  
11 observation that I was making.

12 Q. Why are you cleaning up the site if it's  
13 Williams' responsibility?

14 A. Because as to compliance with OCD Order R-7940-C,  
15 contractually between us and Williams we had agreed that we  
16 would address compliance with that order, including cease  
17 discharge and closure of pits.

18 Q. So you wanted OCD to go the roundabout way and  
19 demand of Williams so they could demand upon you to clean  
20 up the site?

21 A. Yes, that, in fact, would have been consistent  
22 with our contract with Williams, as a matter of actual  
23 fact, as far as them invoking the indemnification  
24 provisions of our contract with them.

25 Q. Page 29 of your testimony, line 6, you state,

1 "After the hearing in November 1998, the hearing examiner  
2 recognized that Burlington was a source of free product  
3 underlying the Hampton 4M well pad."

4 Where in the Order does it say that?

5 A. Well, for example, on page 4, in item (25), it  
6 indicates:

7  
8 ...that PNM's facilities are located downgradient from  
9 Burlington's facilities and that ground water  
10 contamination from Burlington's facilities has moved  
11 downgradient and commingled with ground water  
12 contamination from PNM's facilities.

13  
14 That would be one example.

15 Q. Well, doesn't that state if PNM has free-product  
16 contamination? And if you read it as if Burlington had  
17 free-product contamination, you could also read that  
18 paragraph that PNM had free-product contamination.

19 A. One of the deficiencies of this Order and one of  
20 the reasons that we did appeal it is that it did not  
21 distinguish between the free-product releases versus other  
22 forms of contamination found at the site.

23 Q. Looking back at finding (23), "hydrocarbon  
24 releases", hydrocarbon includes free product, doesn't it?

25 A. You could read it that way. One of the problems,

1 of course, is that there are substantially different  
2 characteristics associated with the movement of free  
3 product, as opposed to minor amounts of product absorbed in  
4 the soil column.

5 Q. Well, Ms. Ristau, I just can't see how you read  
6 this order that Burlington released free product and PNM  
7 didn't.

8 A. I don't believe this order says that. That's one  
9 of the bones of contention, is, we contend that Burlington  
10 did release the free product.

11 Q. Your testimony says that "the hearing examiner  
12 recognized that Burlington was a source of free product..."  
13 and I don't see that in the Hearing Examiner's Order.

14 A. Again, it depends on how you read the various  
15 clauses. As you point out, it's not distinguished in the  
16 order --

17 Q. So how can you distinguish it in your testimony?

18 A. Well, I made an attempt because I had been trying  
19 to show that the free product is a separate issue.

20 Q. I hate to belabor the point, but on page 14,  
21 lines 9 and 10, you say it is "My understanding is that the  
22 person or operator who discharged or released the  
23 contaminants is responsible for the cleanup."

24 Now, doesn't finding (23) of the Order say that  
25 you released contaminants and that you should be

1 responsible for the cleanup?

2 A. Right, and we did appeal that order, as you're  
3 aware.

4 Q. Well, how would that make the order legally  
5 erroneous?

6 A. Because it again did not distinguish between the  
7 free-product release. If we did not release free product,  
8 our contention is that we should not be required to clean  
9 up either the free product or the resulting groundwater and  
10 soil contamination from that free-product release.

11 Q. Page 29, lines 12 and 13, you state that "the  
12 hearing examiner simply ruled that...PNM and Burlington  
13 were equally responsible for investigation and remediation  
14 of the ground water."

15 Isn't it true that Burlington was the sole party  
16 held responsible for the upgradient groundwater  
17 contamination?

18 A. The sole party for the upgradient -- upgradient  
19 of PNM's operations?

20 Q. Yes.

21 A. For a portion of that, yes, above the line in the  
22 sand.

23 Q. Weren't they held responsible for all of it?

24 A. I'm not sure. Again, this is one reason why the  
25 order was appealed, is that there was lack of clarity.

1 Q. On page 15 of your direct -- well, 15 in your  
2 rebuttal --

3 A. Just a moment, please. Yes?

4 Q. -- lines 10 to 17 --

5 A. Yes.

6 Q. -- where you talk about OCD responding to PNM's  
7 request for closure at other dehydrator sites --

8 A. Yes.

9 Q. -- you talked about the Cozzens site. In the  
10 Cozzens site, wasn't the situation reversed there? Wasn't  
11 the dehydrator upgradient?

12 A. No, it was not.

13 Q. Okay. I have no other redirect. And I believe  
14 you responded to Mr. Carr's question as to whether this pit  
15 was fully remediated, when he was referring to Ms. Gannon's  
16 testimony at page 12?

17 A. Okay, page 12 of Maureen Gannon's testimony?

18 Q. That's correct.

19 A. Okay. Yes.

20 Q. Lines 15 and 16, she states, "Based upon these  
21 results, we recognized that the pit excavation bottom was  
22 still contaminated."

23 A. Right, but the OCD guidelines do not prevent  
24 closure, even though there is contamination in place.

25 Q. The OCD would not allow contaminated soil,

1 contaminated to that extent, to be left in place.

2 A. Yes, they would.

3 Q. Something would have to be done with it, wouldn't  
4 it?

5 A. Right, that is correct, but it would not  
6 necessarily be removal of that soil.

7 Q. Right, but something would have to be done with  
8 it?

9 A. Rich, which is what we did -- We did a further  
10 risk analysis by doing further vertical profiling,  
11 according to OCD direction.

12 Q. But the soil -- Something would still have to be  
13 done with the soil?

14 A. Not necessarily. If there is no risk of  
15 contamination of groundwater, then OCD can and has, in  
16 fact, in the past determined that the pit can still be  
17 closed, particularly when there is the kind of constraints  
18 that we have at this site, where there is physical  
19 impossibility for removing all of the wastes.

20 Q. Ms. Ristau, PNM's absolute obligation to serve  
21 its customers doesn't excuse it from cleaning up  
22 contamination it caused in the environment, does it?

23 A. Not contamination that it caused, I absolutely  
24 agree.

25 MR. CARROLL: That's all I have.

1 CHAIRMAN WROTENBERY: Commissioner Bailey?

2 EXAMINATION

3 BY COMMISSIONER BAILEY:

4 Q. Is there a continuing chance of off-site private  
5 well groundwater contamination?

6 A. Yes, there is.

7 Q. If there is, would you expect that OCD would sign  
8 off on a hydrocarbon contamination greater than their  
9 standards?

10 A. Again, that gets to be a complex question. As to  
11 the residuals in the soil does not equate to contamination  
12 above standards more than 1000 feet downgradient from the  
13 well, so again a risk determination would be made. The  
14 free product is a much greater threat to that downgradient  
15 private well than any minor amounts of residual that might  
16 remain in the soil.

17 And in any case, Burlington, by re-excavating the  
18 entire area of PNM's pit, has removed all of the soil,  
19 including the clean backfill that we placed in the pit  
20 after the first remediation. So in that sense it's a moot  
21 point as far as PNM's pit goes.

22 Q. You've tried to make a very clear distinction in  
23 your line between free product and the hydrocarbon  
24 contamination that you admit to. Could you please describe  
25 to me where you make this distinction and how this

1 distinction is made?

2 A. Basically, the soil contamination, we've  
3 remediated about 1200 pits in the San Juan Basin. And when  
4 the dehydrator that PNM formerly operated is the sole  
5 source of contamination at a site, typically, number one,  
6 the contamination does not extend to groundwater as a  
7 general proposition.

8 And number two, the soil contamination, the bell-  
9 shaped area that they were talking about in previous  
10 testimony, about how contamination moves out of the pit, it  
11 doesn't move very far from its release point.

12 However, free product is very mobile. It is a  
13 light, nonaqueous-phase liquid, so it floats, in essence,  
14 on the groundwater. It moves with the groundwater and  
15 moves quite quickly, comparatively speaking, away from its  
16 release point if the geologic and hydrologic conditions are  
17 right at a site. This is a site that's on a fair slope,  
18 and the gradient is quite high in hydrological terms. And  
19 again, for more details, I'd refer you to subsequent  
20 technical witnesses.

21 But basically the premise is that it flows  
22 downhill. PNM's former operations were indeed downgradient  
23 of Burlington's operations. PNM did not have any  
24 substantial tankage or equipment engaged primarily in the  
25 removal of free product from the gas stream. Burlington



1 did. We're downgradient from their operations, and we feel  
2 that we have provided substantial evidence that the free-  
3 product contamination came from up above.

4 There's also a certain amount of soil  
5 contamination that comes bottom up, if you will, because  
6 the groundwater table fluctuates, and that free-product  
7 layer also fluctuates over time. So --

8 Q. I think you may have misunderstood the question,  
9 or maybe I didn't phrase it well. The slug of free product  
10 that hits the separator that is connected to your dehy --

11 A. Yes.

12 Q. -- how would you characterize that, as opposed to  
13 free product?

14 A. It can indeed be in the form of free product.  
15 But it is very small amount and would not explain almost  
16 five feet thickness layer of free product floating on the  
17 water table at this site that is areally very extensive and  
18 extends for a substantial area upgradient of PNM's former  
19 pit.

20 In other words, it's not going to go down through  
21 PNM's pit and then somehow be pushed uphill to other parts  
22 of the site. Anything that was discharged there would go  
23 downhill.

24 The other point is, because it went to our pit  
25 does not mean that that total quantum went to the

1 groundwater, because the soil, if you will, acts as a  
2 sponge, and a certain portion of it is going to be retarded  
3 and deterred.

4 Also, these are fairly volatile substances and  
5 they tend to evaporate quite quickly if they're in an open  
6 environment like an open pit or an open tank.

7 Q. Was it PNM's choice or decision not to put a tank  
8 or any kind of confining barrier under the pit where the  
9 separator dumps?

10 A. We've accomplished cease discharge in common with  
11 most people in the oilfield according to the schedule  
12 established by OCD. Common oilfield practice up until the  
13 issuance of the OCD Order, which applies to the vulnerable  
14 areas, was, in fact, to discharge to unlined surface  
15 impoundments.

16 And PNM, in common with other operators like  
17 Burlington on this very same site, did indeed discharge to  
18 the ground until the OCD order established a deadline for  
19 cease discharge.

20 When that deadline was established, we did indeed  
21 place a tank at the site, and all discharges from the dehy  
22 that's currently operated by Williams do indeed go to a  
23 tank.

24 COMMISSIONER BAILEY: That's all I have.

25 CHAIRMAN WROTENBERY: Commissioner Lee?

## EXAMINATION

BY COMMISSIONER LEE:

Q. Is this a gas well?

A. Yes, it is.

Q. What formation are you producing from?

A. Again, this is not my area of expertise, but my understanding is, it's the Mesaverde and Dakota formations.

Q. What is the gas gravity of this particular gas?

A. Sir, I'd have to defer you to Rodney Heath who is our expert witness in that area. My expertise is environmental, and I don't know that much about the formation characteristics.

Q. Suppose you generated ten gallons of the free product. How much do you think would reach the ground water?

A. If we generated ten gallons?

Q. Yes.

A. I feel none of it would reach the ground water.

COMMISSIONER LEE: I have no further questions.

## EXAMINATION

BY CHAIRMAN WROTENBERY:

Q. Ms. Ristau, I just wanted to clarify for myself the plans that have been submitted by PNM for investigation and remediation at the site.

On page 15 of your direct testimony, at the

1 bottom of the page, the question references a site-specific  
2 plan that was submitted for the 4M site. Could you  
3 identify that site-specific plan? What are you referring  
4 to there?

5 A. Okay, again, let me kind of clarify the  
6 overlapping layers of plans we have.

7 Q. Okay.

8 A. Pursuant to OCD Order 7940-C, we originally  
9 submitted a plan for cessation of discharge and a work plan  
10 for cleanup of the pits, and that addressed mainly the soil  
11 contamination.

12 We then later submitted a plan, a groundwater  
13 management plan, for the site. We were beginning to  
14 discover sites that had, in addition to soil contamination,  
15 groundwater contamination. The groundwater management plan  
16 has a triage approach, and it says if you run into a site  
17 like the Hampton 4M, we will supply additional detail on  
18 how we were to address this site.

19 And maybe one of my other witnesses can help me  
20 on which of the exhibits it was, but basically in working  
21 with the OCD we agreed to install a free-product recovery  
22 system, and we supplied additional information to the OCD  
23 on the design and operation of that free-product system,  
24 additional tweaks that we had done, that we would not  
25 normally do at a site because this was such an unusual site

1 for us and we didn't think it could be handled completely  
2 effectively under our existing groundwater management plan.

3 Q. Okay, so the site-specific management plan that  
4 you're referring to here is in the exhibit someplace?

5 A. Yes, and I apologize, I can't give you the  
6 exhibit right off the top of my head. Do we have the list  
7 or something that we could -- Some of it was done by  
8 letter, instead of saying this is the plan with a report  
9 cover on it.

10 Q. Okay, we can move on and maybe you can just --

11 A. Okay, I'm sorry, I apologize. There's so many  
12 exhibits and I don't have that one.

13 Q. I do recall reading correspondence, I just wasn't  
14 clear what was considered the plan.

15 Now, I just have a couple more questions. I know  
16 you've been asked several questions about the  
17 responsibility and control of fluids that went to and  
18 through the dehydrator and into the pit. I wanted to ask  
19 you specifically about -- Let's see here. Well, give me  
20 just a second.

21 On page 27 --

22 A. -- of the direct testimony?

23 Q. Uh-huh, of your direct testimony, you talk about  
24 liquids -- I'm looking at lines 11 and 12 --

25 A. Yes.

1 Q. -- on page 27, about liquid hydrocarbons that  
2 "have bypassed the dehydrator and have been discharged to  
3 the dehydrator pit or tank by the producer's upstream  
4 equipment." And I just wanted to make sure I understand  
5 what the mechanism is that you're referring to there.

6 A. Again, there is a dump line and so forth attached  
7 to the equipment, but I'm really out of my league on this,  
8 and again I would encourage you to visit with Mr. Heath who  
9 has much more familiarity with the actual equipment.

10 Q. Okay, we'll do that. I also wanted to ask you on  
11 your Exhibit 4, PNM 4, on the map there -- and I believe  
12 this was a picture, an aerial photograph, taken in 1998, if  
13 I remember right.

14 A. Yes, ma'am.

15 Q. At the site of the dehydrator I see something  
16 labeled as a "Produced Liquid Tank", and then I also see  
17 something labeled as a "Free Product Recovery Barrel".  
18 What is that free-product recovery barrel?

19 A. The free-product recovery barrel was where we  
20 were depositing the free product that we were pumping  
21 through our free-product recovery system as part of our  
22 remediation.

23 Q. Okay, from MW-6 or -7?

24 A. It's either -6 or -2. I keep getting --

25 Q. Uh-huh.

1           A.    -- the two confused because they're very close.  
2    I believe it was 6, was the recovery well.

3           Q.    Okay, but you didn't have anything like that,  
4    like that free-product recovery barrel on site until you  
5    began recovering product through --

6           A.    -- as a part of our remediation efforts, yes,  
7    because normally the gas gatherer does not have anything to  
8    do with recovering the free product.

9           Q.    And then lastly I just wanted to ask you a couple  
10   questions about what there is downgradient of this site to  
11   be concerned about in terms of receptors of groundwater  
12   contamination that --

13          A.    Human receptors, mainly?

14          Q.    Any type, any type that we might be concerned  
15   about. I know in your -- I might just, I guess, refer you  
16   to PNM-8 --

17          A.    Okay.

18          Q.    -- and that shows what's labeled the E.B. well,  
19   and there was some discussion about that particular well in  
20   the testimony. Who is it that owns that well?

21          A.    My understanding is, it's Everett Burton, who is  
22   a private landowner, who is -- His property is down in the  
23   vicinity where that well is shown.

24          Q.    Okay.

25          A.    I'm not sure of his exact property boundaries.

1 Q. There's some sort of building there, at the  
2 bottom of the photograph. Do you know what that is? Is  
3 that his --

4 A. I'm sorry, I do not, but the other people who  
5 have spent more time on the site --

6 Q. -- site, might be able to answer that.

7 Do you know where the arroyo that leads from this  
8 well site goes?

9 A. Yes. Again, referring to PNM Exhibit 8, if you  
10 look at the bottom, which would be -- This map is upside  
11 down to me, since north is to the left, so it would be west  
12 of the wellpad or towards the bottom of the wellpad in the  
13 orientation.

14 Q. Uh-huh.

15 A. You'll see a trace of the drainage there, and it  
16 skirts the edge of the wellpad and goes on down and then  
17 comes close to the road and basically parallels, with some  
18 wiggling back and forth, the road on the bottom or the west  
19 side of the road, and then you can see it more clearly once  
20 you get past what's denominated the Williams Field Service  
21 Pipeline, you can see it more clearly again. And it's  
22 basically an arroyo with some braiding, you know, so  
23 there's some kind of crossover of channels and so forth.

24 Q. Where does that arroyo head?

25 A. Again, it heads on down past the road and again



1 downhill, basically. And again, I am not that totally  
2 familiar with the exact geographic location. This is close  
3 to the city limits of Aztec, and there are indeed to the  
4 left on this drawing, which would be to the north, private  
5 landowners with homes and other buildings and facilities.

6 Q. And do you know what the arroyo drains into?

7 A. No, I do not, I'm sorry. I'd have to refer to a  
8 larger scale map to tell you.

9 Q. Okay, thank you, Ms. Ristau.

10 A. As far as other receptors, though, I would call  
11 your attention to the seep, and that seep has been  
12 monitored for a while now. And though it's not a human-  
13 exposure consideration, when you go out there you can  
14 typically see animal tracks. It's attractive to animals,  
15 and they apparently come and drink there or whatever.

16 CHAIRMAN WROTENBERY: Thank you.

17 Mr. Alvidrez?

18 MR. ALVIDREZ: May it please the Commission, we  
19 do have a larger aerial if you're interested in --

20 THE WITNESS: Yeah, maybe this will clarify.

21 MR. ALVIDREZ: -- more detail on the arroyo.  
22 It's up to you.

23 CHAIRMAN WROTENBERY: That might help, yes.

24 THE WITNESS: It is a little hard to see on this  
25 small a map.

1 CHAIRMAN WROTENBERY: Okay.

2 MR. CARR: May it please the Commission, could  
3 this be marked as an exhibit and the conversation be on the  
4 record?

5 CHAIRMAN WROTENBERY: Sure, do you mind?

6 MR. ALVIDREZ: That's acceptable to us. Not at  
7 all.

8 CHAIRMAN WROTENBERY: Okay.

9 MR. ALVIDREZ: Shall we make it PNM Exhibit 72?

10 CHAIRMAN WROTENBERY: Okay.

11 THE WITNESS: And the reason it wasn't included  
12 is, we were trying to keep everything in notebook format.

13 CHAIRMAN WROTENBERY: I understand.

14 Okay, Mr. Carr, would you like to join us in  
15 looking at this?

16 THE WITNESS: Actually, Valda or someone who is  
17 more familiar with the site, or Maureen, might help us out  
18 too.

19 This is the Hampton 4M site. This is downhill,  
20 if you will.

21 This is -- I believe this is the Williams  
22 Pipeline.

23 This is the road that goes up to the site.

24 The arroyo, basically, you can see traces of it  
25 here as it kind of meanders back and forth. It crosses the

1 road and it discharges into this --

2 MR. SIKELIANOS: It goes back towards Aztec.

3 THE WITNESS: Back towards Aztec, okay. Do you  
4 know what this drainage area --

5 MR. ALVIDREZ: I think our record is going to be  
6 unintelligible at this point.

7 THE WITNESS: But we can get you information on  
8 how this is nominated, if it's a named -- or whatever

9 CHAIRMAN WROTENBERY: Okay.

10 MR. SIKELIANOS: It's not a named wash, to my  
11 knowledge.

12 THE WITNESS: Do you know, or does anyone know  
13 what the date of this -- We may have to get that for you as  
14 an exhibit, because obviously things change over time,  
15 people build new homes and buildings and so forth. So it  
16 would be helpful to know what date --

17 MS. TERAUDS: Dual production because you can see  
18 two storage tanks.

19 THE WITNESS: So it's old enough to have been  
20 before Burlington commingled the site, which was two or  
21 three years ago, something like that. And we can leave  
22 this up here in case we need to haul it out or refer to it  
23 again or whatever is convenient.

24 MS. TERAUDS: We can tack it on the wall.

25 CHAIRMAN WROTENBERY: That would be -- Yeah, that

1 might be good.

2 MR. CARR: Does the record reflect the date of  
3 the photograph in this case?

4 CHAIRMAN WROTENBERY: No, I don't believe it  
5 does.

6 THE WITNESS: That's what we were saying, we'd  
7 have to clarify. We're not sure of the exact date, and it  
8 would be helpful to know that.

9 MR. CARR: You'll let us know?

10 CHAIRMAN WROTENBERY: Uh-huh, yes.

11 MR. ALVIDREZ: Just for the record, we'd move the  
12 admission of PNM Exhibit Seventy- --

13 THE WITNESS: -- -two?

14 MR. ALVIDREZ: -- -two? -One, actually, 71.

15 THE WITNESS: 71?

16 CHAIRMAN WROTENBERY: Any objections?

17 MR. CARR: No objection.

18 CHAIRMAN WROTENBERY: Okay, it's admitted.

19 And maybe just for the record, I'll try to maybe  
20 summarize what we saw on the aerial photo.

21 It basically shows a larger area than is shown in  
22 PNM-8, and what it does show is that after the arroyo  
23 that's seen on PNM-8 crosses the road that's on the extreme  
24 north part of PNM-8 it very shortly enters another --

25 THE WITNESS: -- drainage --

1 CHAIRMAN WROTENBERY: -- drainage area of some  
2 sort, but we don't have the name of that particular  
3 drainage, at this point. And I think that's about all we  
4 can really say about what we gleaned from the aerial photo.

5 Mr. Alvidrez, redirect?

6 MR. ALVIDREZ: Redirect, may it please the  
7 Commission.

8 REDIRECT EXAMINATION

9 BY MR. ALVIDREZ:

10 Q. Ms. Ristau, before we leave PNM Exhibit 8, since  
11 we were talking about that, for clarification can you tell  
12 us whether MW-5 and MW-7 are in the arroyo that we've just  
13 been discussing on the record?

14 A. Again, I would defer for exact details to the  
15 other technical witnesses, but I believe so, yes.

16 Q. Okay. There's been a lot of discussion about the  
17 term "hydrocarbon contamination".

18 A. Yes.

19 Q. Can you tell us what you understand that term to  
20 mean?

21 A. I understand that it's a generic term for any  
22 phase or type of hydrocarbon contamination. Unfortunately,  
23 one size doesn't fit all, because different phases of  
24 hydrocarbon contamination behave differently. And what  
25 we've done is, we've treated those different phases in a

1 different manner in our testimony.

2 Q. Can you tell us the different phases that fall  
3 under the general heading of hydrocarbon contamination?

4 A. Well, there would be a gaseous phase, there would  
5 be liquid phase, and there would be dissolved phase.

6 Q. And with regard to the media where hydrocarbon  
7 contamination can be found, can you describe the media?

8 A. Well, it can be found basically in any of the  
9 environmental media, but the specific concern at this site  
10 would be in the soils and in the groundwater.

11 Q. All right. With regard to hydrocarbon  
12 contamination in the groundwater, can you tell us what  
13 forms that can take?

14 A. It can either be free-phase or free product -- we  
15 variously refer to it that way -- which is a light  
16 nonaqueous-phase liquid that's basically floating on top of  
17 the water table, where the hydrocarbon is the overwhelming  
18 constituent, with maybe trace amounts of water.

19 You can also have dissolved-phase, where the  
20 greatest percentage of the constituents, if you will, is  
21 the water, and there is minor amounts of hydrocarbon that's  
22 dissolved or miscible in the water.

23 Q. And for the record, with regard to PNM's appeal  
24 in this case, what type of hydrocarbon contamination is PNM  
25 contesting responsibility for?

1           A.    It is for the free-phase, or light nonaqueous-  
2 phase liquid, or the free product, as we've referred to it.

3           Q.    And where is that free product located?  In what  
4 media?

5           A.    It's located on the groundwater, again as a light  
6 -- It's lighter than the water, has a lesser specific  
7 gravity, so it floats on the top of the groundwater.

8           Q.    Does the presence of free-phase contamination on  
9 the groundwater have any impact on the potential for  
10 dissolved-phase in the groundwater?

11          A.    Yes, it does.

12          Q.    And what is that?

13          A.    When you have free-phase hydrocarbon on the  
14 groundwater, you will always have dissolved -- because of  
15 the physical-chemical characteristics and interactions, you  
16 will always have dissolved-phase hydrocarbon constituents  
17 that are in excess of the WQCC standards.

18          Q.    If the free-phase contamination is not addressed  
19 of remediated, what impacts, if any, will that have on the  
20 dissolved phase in groundwater?

21          A.    The dissolved-phase contamination, our preferred  
22 approach and one that has been successful at the majority  
23 of our sites is that we remove the source and we allow for  
24 natural attenuation.

25                However, if you have free-phase on the

1 groundwater, natural attenuation is not going to occur,  
2 because the free-phase is going to continually contribute  
3 to the dissolved-phase found in the groundwater.

4 So therefore our preferred approach, and the one  
5 approved by the OCD for our site, of source removal and  
6 natural attenuation will not work in that instance, at  
7 least not in a reasonable amount of time.

8 Q. Let's talk a bit about natural attenuation. What  
9 is that?

10 A. Well, again, groundwater and soils both have a  
11 capacity for remediating themselves, if you will. The  
12 physical, chemical and biological processes present in the  
13 environment will eventually address the hydrocarbons. The  
14 hydrocarbons are food, if you will, for a naturally  
15 occurring organism in the soils. If you remove the source  
16 of food, these organisms will, in fact, address the  
17 contamination, and it will attenuate or diminish over time,  
18 and you will get to a point where it's below standards.

19 At our typical sites where we have dissolved-  
20 phase contamination only, they generally remediate because  
21 they have attenuated to below the WQCC standards in 18 to  
22 24 months, is really typical of our site, so far.

23 Q. And how long has the contamination persisted  
24 since the time of discovery, in any case, at the Burlington  
25 Hampton 4M site?



1           A.    Okay, "contamination", you're speaking of the  
2 free-phase or the dissolved-phase or both?

3           Q.    Both.

4           A.    Well, the dissolved-phase has been particularly  
5 problematic. What we would normally see at a site like  
6 this once we've removed our source would be that it would  
7 indeed begin to diminish as measured by laboratory samples  
8 of the groundwater.

9                   Here, we see something else happening, and some  
10 of the monitoring wells, at least the ones that we were  
11 able to monitor before Burlington removed them, we're  
12 actually seeing an increase in the dissolved-phase  
13 contamination.

14          Q.    You were asked about dissolved-phase  
15 contamination heading offsite downgradient from the  
16 wellpad.

17          A.    Yes.

18          Q.    Do you have an opinion as to the source for that  
19 dissolved-phase contamination that is heading downgradient?

20          A.    Yes, I do. I think it's attributable to a large  
21 amount of free product on the water table at this site.

22                   Typically, when we have dissolved phase only, it  
23 attenuates to below standards within a very short distance  
24 from the site, maybe a couple of hundred feet. Here we're  
25 seeing substantial contamination, contamination above

1 standards, several hundred feet downgradient from the site,  
2 which is not the typical situation.

3 Q. Let's talk a little bit about PNM Exhibit 10,  
4 which is the March 13th, 1998, directive from OCD.

5 A. Yes.

6 Q. And let's also place this in context, talk a  
7 little bit about what has been referred to as the line in  
8 the sand at this location.

9 A. Yes.

10 Q. Can you tell us -- and we'll have to jump around  
11 a little bit. Perhaps you can refer to PNM Exhibit 4, and  
12 firstly tell us what your understanding of this line in the  
13 sand that has been discussed in the testimony is.

14 A. Okay, the line in the sand which is referred to  
15 repeatedly -- forgive us for the nontechnical  
16 terminology -- was a line established by the OCD on --  
17 based on very preliminary data at this site. The line in  
18 the sand was basically drawn between the location of PNM's  
19 former equipment and Williams' existing equipment and --  
20 well, the actual Hampton 4M wellhead. There is a dot there  
21 that shows cathodic protection.

22 Q. Can you --

23 A. I'm not sure of exactly where it fell, but it  
24 fell upgradient of PNM's former operations and  
25 substantially downgradient of Burlington's existing

1 operations.

2 Q. Okay, would that be somewhere between the word  
3 "dehydrator" and the well that's denoted as MW-10, in  
4 general terms?

5 A. I believe so. I know it was close to the  
6 cathodic protection that is shown as a dot on the map, but  
7 at this scale I'm not precisely sure where it would appear.

8 Q. We have a number of different versions, and  
9 perhaps PNM Exhibit 6 will illustrate it a little better.

10 Do you recall whether that line in the sand was  
11 tied in, in any way, with the temporary wells that had been  
12 installed on this site, TPW-1, -2, and -3?

13 A. Yes, basically the line was drawn in the vicinity  
14 of those temporary wells --

15 Q. Okay.

16 A. -- which shown as dots on PNM 6, TPW-01, -02  
17 and -03.

18 Q. So if we played connect the dots between TPW-1,  
19 -2 and -3, would we get a general idea of where that line  
20 in the sand was?

21 A. Yes, we would.

22 Q. And what is your understanding of the effect of  
23 that line in the sand, which the OCD drew with regard to  
24 responsibility for cleanup of any type of contamination at  
25 this site and beyond?

1           A.   My understanding was and is that PNM was to be  
2 responsible for everything north of that line -- that would  
3 be up when you're looking at PNM-6 -- and Burlington would  
4 be responsible for everything south of that line.

5                   And I draw your attention to the dot on the lower  
6 portion of PNM-6 Exhibit, shown as Monitoring Well 1.  
7 That's basically a clean upgradient well, upgradient in the  
8 sense that it's upgradient of not only Burlington -- not  
9 only PNM but Burlington's operations. And so Burlington is  
10 responsible for that increment of the wellpad that occurs  
11 between the connect-the-dot lines between TPW-1, -2 and -3,  
12 and basically Monitoring Well 1 would be the outward limit  
13 of their responsibility, and PNM is responsible for the  
14 rest of the world.

15           Q.   That's what I wanted to ask. Was there any  
16 limit, as far as you knew, as to PNM's responsibility for  
17 contamination heading downgradient or north from its  
18 operations?

19           A.   That was not my understanding of OCD's  
20 determination, no.

21           Q.   And with regard to OCD's determination and  
22 responsibility, was there any distinction made on the media  
23 that was the subject of the contamination? That is, soil  
24 versus water?

25           A.   Well, there was various statements made and

1 directives made by OCD, but they generally ordered us to  
2 deal with both the groundwater and the soil contamination  
3 as a general proposition.

4 Q. And that was for everything north of the line in  
5 the sand?

6 A. Yes, it was.

7 Q. All right. Let's talk, now, about PNM Exhibit  
8 10, which is the directive.

9 A. Yes.

10 Q. With regard to the directive that's set forth in  
11 that area, the last paragraph says, "Therefore, the OCD  
12 requires that PNM take additional remedial action within 30  
13 days to remove the remaining source areas with free phase  
14 hydrocarbons in the vicinity and immediately downgradient  
15 of the dehy pit." Do you see that portion?

16 A. Yes.

17 Q. Can you tell me, was there any way, any practical  
18 way, for PNM to comply with this directive?

19 A. We felt, no, that there was not, because the PNM  
20 pit had not been the source of the free-phase. There was  
21 substantial free-phase still coming onto the area where our  
22 pit had been located from upgradient sources, and we felt  
23 that it would be very difficult for us to do much effective  
24 until that upgradient prephase release was addressed.

25 Q. Did that form a basis for PNM's appeal?

1 A. Yes, it did.

2 Q. Now, was this directive, as we've seen in the  
3 March 13th letter from OCD, held up in all respects after  
4 the original hearing in this matter?

5 A. Held up?

6 A. Well, did the OCD continue with this line-in-the-  
7 sand demarcation as to responsibility for contamination?

8 A. My understanding is yes, they're still standing  
9 by that line of demarcation.

10 Q. In all respects?

11 A. Some modification occurred after the first  
12 hearing, before the OCD Hearing Examiner. But in essence,  
13 the line in the sand still stands as the allocation of  
14 responsibility.

15 Q. What about with respect to dissolved-phase  
16 groundwater contamination in the area downgradient of PNM's  
17 operations, former operations?

18 A. I believe that the OCD's position, if I'm not  
19 misspeaking, is that PNM is, in fact, still responsible for  
20 the dissolved-phase contamination downgradient.

21 Q. And is PNM the only party responsible, according  
22 to the Hearing Examiner, for that downgradient dissolved-  
23 phase?

24 A. Again, maybe I could refer to the exact order for  
25 specifics, but I believe that Burlington and PNM were both

1 given responsibility for the remediation at that point of  
2 the dissolved-phase contamination.

3 Q. And what's your understanding on the percentage  
4 allocation of responsibility with regard to Burlington and  
5 PNM for the dissolved-phase?

6 A. Well, the OCD order is not real specific on the  
7 allocation of responsibility in terms of exact percentage  
8 split, but it's basically been interpreted to be a 50-50  
9 split between PNM and Burlington.

10 Q. Okay. You were asked some questions about the  
11 ability or, I guess, need to remove certain of the surface  
12 equipment that was out at this site in connection with the  
13 pit-closure operations conducted by PNM?

14 A. Yes.

15 Q. I'd like you to look at PNM Exhibit 14, if you  
16 would.

17 A. Yes, sir.

18 Q. Now, this is the records relating to that closure  
19 and assessment of the PNM former pit; is that correct?

20 A. Yes.

21 Q. And the back three pages, maybe two, from the  
22 back, can you tell me what these depict?

23 A. Okay, let me make sure I'm on the same page as  
24 you. Is it the one that is denominated "Hampton 4M  
25 Excavation - 04/24/96" and it has "South Wall", "West

1 Wall", "North Wall", "East Wall", "Pit at Start",  
2 "Excavation Bottom"? Is that the one you're referring to?

3 Q. Correct.

4 A. And that is, in fact, the third one back from the  
5 -- in this exhibit.

6 Q. Do these boxes here depict basically the contours  
7 of the excavation at this site?

8 A. Well, they're not contours in the truest sense,  
9 but they're a schematic --

10 Q. Okay.

11 A. -- showing what was done for the excavation,  
12 where various readings and samples were taken and so forth.

13 Q. With regard to the walls that are described on  
14 this schematic, where would the Williams dehydration units  
15 have been located?

16 A. Correct me if I'm wrong, but I believe that  
17 Williams' equipment would be basically above the south wall  
18 of this excavation.

19 Q. And based upon the readings that are shown there  
20 with regard to the level of contamination in the soil on  
21 the south wall, would that wall have been clean under OCD  
22 guidelines?

23 A. Directly below the Williams equipment --

24 Q. Right.

25 A. -- the PNM former equipment?



1 Q. Right.

2 A. Yes, it would have been clean.

3 Q. So in order to effect remediation, would it have  
4 been necessary to head in a southerly direction?

5 A. Not from the information that we had at the time  
6 that the excavation was done, no.

7 Q. Okay.

8 A. There was no need to go further in that  
9 direction.

10 Q. All right. You were asked a question about PNM  
11 Exhibit 15 and Soil Boring 2.

12 A. Yes.

13 Q. And Mr. Carr referred to really what is the last  
14 page of Exhibit 15.

15 A. Okay, is this the sampling results?

16 Q. This is the sampling results from Envirotech  
17 Labs.

18 A. For SB-12?

19 Q. Yeah, and --

20 A. Okay.

21 Q. Mr. Carr referred you to total petroleum  
22 hydrocarbons of TPH, that reading there, as you may recall.  
23 Is that -- Do you recall that?

24 A. I believe that's what he referred me to, yes.

25 Q. Do you recall discussions in the course of the

1 testimony preparation in this case about OCD guidelines  
2 accepting what is denominated there as "Diesel Range"?

3 A. That would be DRO --

4 Q. Right.

5 A. -- as referred to in the lingo?

6 Q. Okay.

7 A. Yes, I do.

8 Q. And what is the DRO reading?

9 A. The DRO reading is 44.5 milligrams per kilogram.

10 Q. And do you know whether the OCD has accepted DRO  
11 readings of that level for closure?

12 A. Yes, I believe they have.

13 Q. With regard to a question that was asked by  
14 Commissioner Bailey, she asked you about where does this  
15 slug of free product go that might come from the Burlington  
16 surface equipment, the separator specifically, when it hits  
17 the dehydrator?

18 A. Where it might go when it hits the dehydrator?

19 Q. After it hits the dehydrator --

20 A. Okay.

21 Q. -- where would it go?

22 A. Again, there is a small separator on the  
23 dehydration unit, is my understanding, and again forgive  
24 me, this is not my area of expertise on the configuration  
25 of the equipment. As much as possible, that free product

1 that hit the dehydrator would be removed by the separator,  
2 is my understanding, so that it would not go through the  
3 actual dehydration portion of the unit.

4 Q. Okay. And the separator, the inlet valve  
5 separator removed the free product. Where would that go?

6 A. I believe it would go to a discharge line or a  
7 dump line of some sort.

8 Q. And in the olden days that would go into an  
9 unlined pit?

10 A. It would go into a pit, yes.

11 Q. Now, the question was kind of left in that state  
12 of affairs. But can you tell me, is there anything else in  
13 that pit?

14 A. Well, yes, there would generally be water,  
15 because the main purpose of the dehydrator is to remove  
16 water. So there would be a fair amount of water and a  
17 small amount of hydrocarbon.

18 Q. And what generally happens when you have small  
19 amounts of free product getting dumped into a pit with  
20 water in it?

21 A. Again, the water would basically underlie the  
22 hydrocarbons, because the hydrocarbons are going to be  
23 lighter. And the hydrocarbons would, in part, evaporate  
24 off because they're fairly volatile. A certain portion of  
25 them would dissolve into the groundwater. And a portion of

1 the hydrocarbons, as the water travels down, would also  
2 travel down and be entrained in the soil beneath the pit,  
3 at a typical location.

4 Q. In order for you to have free product migrating  
5 down in the soils beneath that unlined pit, would that free  
6 product somehow have to get through the layer of water  
7 that's there already?

8 A. It would, to go directly to the groundwater, yes.  
9 And that would be contrary to its physical characteristics,  
10 which would make it want to float on top of the water.

11 Also in many of these pits, including this one,  
12 there is a waxy or paraffinic layer typically found in the  
13 bottom of the pit, and that impedes both the water and the  
14 product from traveling downward to a certain extent. It's  
15 not a totally impermeable barrier, but it does offer some  
16 impedance.

17 MR. ALVIDREZ: That's all the redirect I have at  
18 this time.

19 CHAIRMAN WROTENBERY: Mr. Carr?

20 MR. CARR: I have just a couple of questions, and  
21 I want to make sure I've got the right witness.

22 RECROSS-EXAMINATION

23 BY MR. CARR.

24 Q. On PNM Exhibit 8, are you sponsoring this  
25 exhibit? I notice in the testimony that you talk about

1 specific details might be addressed to Ms. Gannon or Ms.  
2 Terauds. And if we get out of your area, let me know on  
3 this, please.

4 A. Yes.

5 Q. If I look at this just as a general orientation  
6 plat, you have put certain bits of information over a  
7 portion of an aerial photograph; is that right?

8 A. That's correct.

9 Q. And if I look at the exhibit, the location of the  
10 former PNM pit is in green --

11 A. Yes.

12 Q. -- and that's on the downgradient side of the  
13 pad, it's on the north side, correct?

14 A. That's correct.

15 Q. Downgradient is north, and it's to the left? And  
16 then if we go --

17 A. North and to the left, did you say?

18 Q. To the left on this exhibit.

19 A. Yes, that's correct.

20 Q. And it seems backward to me too.

21 A. I know, it does to me too.

22 Q. And if we go off the pad to the north,  
23 downgradient, the edge of the seep in the wash is shown,  
24 and that is directly below the location of the former PNM  
25 pit, correct?

1 A. Directly below?

2 Q. It's downgradient.

3 A. It's slightly cross-gradient, I believe.

4 Q. When we talk about gradient, this exhibit has a  
5 blue arrow on it that shows groundwater flow --

6 A. Yes.

7 Q. -- generally?

8 A. Yes.

9 Q. And then we have some contours. What does the  
10 red contour line show?

11 A. Again, that shows you, again, depending on how  
12 familiar you are with the information, that shows you a  
13 picture at this point in time of the groundwater direction.  
14 Basically, the contours are going to be perpendicular to  
15 the direction of flow.

16 Q. Okay, so -- And then the blue lines are just one-  
17 foot contours, the red is the five-foot contour? Is that  
18 what this shows?

19 A. Oh, you mean on the wellpad, as opposed to --

20 Q. Yeah.

21 A. -- off the wellpad? Yes.

22 Q. And the purple dot is the Hampton 4M wellhead,  
23 correct?

24 A. The actual gas well, yes.

25 Q. Based on this exhibit, then, isn't it fair to say

1 that the groundwater flow gradient in the area shows that  
2 your former pit is not downgradient from the Hampton 4M  
3 well?

4 A. From the wellhead itself?

5 Q. Yes.

6 A. No, but it's clearly downgradient from  
7 Burlington's tankage and other operations on the site.

8 Q. And they are where?

9 A. They are where?

10 Q. Uh-huh.

11 A. Again, forgive me for not having all the detail  
12 at my fingertips, but you can see something denominated  
13 "Water Level BROG Excavation" --

14 Q. Yes.

15 A. -- that Burlington Resources' excavation was in  
16 the vicinity of Burlington's former tankage. There is  
17 other tankage on the site, there has been other tankage of  
18 Burlington's in the past on that site.

19 Q. When we see that X where you've got the -- under  
20 the "Water Level BROG Excavation" there is an X over a pit;  
21 is that right?

22 A. I believe that X is where Burlington's small  
23 excavation that they did in the vicinity --

24 Q. And that was under those production --

25 A. -- of the --

1 Q. -- that was under the production equipment you're  
2 talking about?

3 A. Well, it wasn't -- My understanding is, it wasn't  
4 directly under the -- but it was in the vicinity of the  
5 former tankage --

6 Q. And there is a --

7 A. -- on the site.

8 Q. -- blue line next to that, and that line would  
9 show your interpretation of the gradient of the water flow  
10 at that point?

11 A. At that point in time --

12 MR. CARR: Okay --

13 THE WITNESS: -- based on the limited data.

14 MR. CARR: -- that's all I have, thank you.

15 CHAIRMAN WROTENBERY: Mr. Carroll?

16 MR. CARROLL: I've just got one question.

17 FURTHER EXAMINATION

18 BY MR. CARROLL:

19 Q. Pardon me, Ms. Ristau, I think you lost us when  
20 you were referring to your Exhibit Number 14. Were you  
21 looking at the third page from the back?

22 A. The third page from the back, and if you look at  
23 the bottom it shows something called "South Wall" on the  
24 left and "West Wall" on the right, at the bottom of the  
25 page.



1 Q. And you testified that the PNM former dehydrator  
2 pit was located where?

3 A. Okay, basically the gray square is a schematic  
4 representation of the pit. It's not exactly to scale. But  
5 what we were referring to is the Williams existing  
6 equipment and PNM's former equipment at the site was  
7 located about where the letters "South Wall" appear, if  
8 you're looking for a general orientation. Again, in very  
9 gross terms. This is not to scale.

10 Q. Aren't the levels listed here above the OCD  
11 guidance levels?

12 A. Not on the south wall. It's shown at 50 parts  
13 per million at 12 feet.

14 Q. What about the other samples?

15 A. The other samples are not of the south wall. The  
16 question that we were addressing was Mr. Carr's question  
17 about why didn't you excavate further or ask Williams to  
18 move their equipment?

19 And the answer is, because the PID readings that  
20 we had indicated no need to excavate further under PNM's  
21 existing equipment.

22 MR. CARROLL: That's all I have.

23 CHAIRMAN WROTENBERY: Commissioners?

24 COMMISSIONER LEE: (Shakes head)

25 COMMISSIONER BAILEY: (Shakes head)

1 CHAIRMAN WROTENBERY: Thank you very much for  
2 your testimony, Ms. Ristau.

3 THE WITNESS: Thank you.

4 CHAIRMAN WROTENBERY: And I think that takes us  
5 to lunch time. How much time do you think we'll need for  
6 lunch?

7 MR. CARROLL: One?

8 CHAIRMAN WROTENBERY: One hour? Will that do it?  
9 Okay, we'll start back up, then, at one o'clock.

10 (Thereupon, a recess was taken at 12:03 p.m.)

11 (The following proceedings had at 1:05 p.m.)

12 CHAIRMAN WROTENBERY: Okay, I think we're ready  
13 to get started again. Mr. Alvidrez?

14 MR. ALVIDREZ: May it please the Commission, we'd  
15 like to call our next witness, Ms. Maureen Gannon.

16 MAUREEN D. GANNON,  
17 the witness herein, after having been first duly sworn upon  
18 her oath, was examined and testified as follows:

19 DIRECT EXAMINATION

20 BY MR. ALVIDREZ:

21 Q. Ms. Gannon, can you please state your name for  
22 the record?

23 A. My name is Maureen D. Gannon.

24 Q. And Ms. Gannon, where are you employed?

25 A. I'm employed at PNM in Albuquerque, New Mexico.

1 Q. And what is your position with PNM?

2 A. I'm a technical project manager.

3 Q. And have you submitted direct prefiled testimony  
4 in the present proceeding on behalf of PNM?

5 A. Yes, I have.

6 Q. And is that direct testimony part of PNM Exhibit  
7 A, and does it consist of a cover page and 48 pages of  
8 testimony with your affidavit attached to that testimony?

9 A. Yes, it does.

10 Q. And let me ask you, was this testimony prepared  
11 by yourself?

12 A. Yes, it was.

13 Q. And let me ask as well, do you have any changes  
14 or corrections to your direct testimony?

15 A. Yes, I do.

16 Q. Can you tell us what those are?

17 A. On page 19, line 5, the sentence reads, "During  
18 drilling, the boring becomes smeared at the auger..." It  
19 should be "...as the auger..."

20 Q. You might go a little bit slowly enough so people  
21 can catch that. 14, line 5?

22 A. It's page 19.

23 Q. Page 19, line 5?

24 A. Line 5.

25 Q. Okay.

1           A.   "...the boring becomes smeared as the auger  
2 moves..."

3           Q.   Anything else?

4           A.   On page 29, line 3, the very last word should be  
5 "it" instead of "I".

6                   There's another correction on page 42, line 7.  
7 It says, "Please explain Exhibit 27." That should read  
8 "Exhibit 19."

9                   And again on line 11 it says "...is attached as  
10 PNM Exhibit 28." That should be "Exhibit 32."

11                   On line 13 of the same page it reads, "...the  
12 letter which is found at PNM Exhibit 27". That number  
13 should be "Exhibit 19".

14                   There's another correction on page 47, and it  
15 should be on line 12, or above it, or inserted above.  
16 There are two additional exhibits that I am identifying and  
17 confirming.

18                   That is PNM Exhibit 27, which is an OCD letter to  
19 PNM of September 1st, 1998.

20                   There's also another exhibit that needs to be  
21 included. That's PNM Exhibit 28, which is an OCD letter to  
22 Burlington of September 1, 1998.

23           Q.   Were there any other corrections to your direct  
24 testimony?

25           A.   To direct? There is one in the exhibit, and let

1 me just check. That is Exhibit 13, which is the "Hampton  
2 4M Chronology of On Site Events" The second box down it  
3 says "April 24, 1996". Within that box the last sentence  
4 line reads "600 ppm benzene". That should be "16 ppm  
5 benzene".

6 Q. One-six?

7 A. One-six ppm benzene. And then an insertion, "622  
8 ppm BTEX".

9 MS. HEBERT: Mr. Alvidrez --

10 MR. ALVIDREZ: Yes?

11 MS. HEBERT: -- could you -- What page was that  
12 on, these last two corrections?

13 MR. ALVIDREZ: We are on PNM Exhibit 13, in the  
14 second box on the first page.

15 Q. (By Mr. Alvidrez) And you had an insert, Ms.  
16 Gannon, somewhere?

17 A. The second box on the first page, the actual text  
18 box which has five or six lines, the last line says "600  
19 ppm benzene". That should read "16", one-six.

20 And there should be an insertion, "622 ppm BTEX".

21 Q. On page 37 of your direct testimony, was there  
22 also a correction at line 17?

23 CHAIRMAN WROTENBERY: I'm sorry, what page was  
24 that?

25 Q. (By Mr. Alvidrez) Page 37 of the direct

1 testimony, on line 17?

2 A. Oh, yes, there was. I don't have that marked,  
3 I'm sorry. Page 37, line 17, reads, "...determined that  
4 our remediation efforts would be until..." It should read,  
5 "...would be futile until..."

6 Q. Okay. Any other corrections to your direct  
7 testimony?

8 A. No.

9 MR. CARROLL: Madame Chairman, the Division has  
10 noted some typos here I think that should be corrected.

11 CHAIRMAN WROTENBERY: Okay.

12 MR. CARROLL: On page 12, lines 12 through 14,  
13 maybe it should be "ppm" rather than "ppb"?

14 THE WITNESS: That's correct.

15 MR. CARROLL: Okay.

16 MR. ALVIDREZ: That's in the direct testimony of  
17 Ms. Gannon?

18 MR. CARROLL: Yes, page 12.

19 CHAIRMAN WROTENBERY: For both the benzene and  
20 the BTEX concentrations?

21 THE WITNESS: Yes, and also "...the OCD guideline  
22 of 10 ppb..." should read "10 ppm".

23 COMMISSIONER LEE: Also "622 ppb"?

24 THE WITNESS: Should be "ppm". And line 14, the  
25 "...OCD guideline of 50 ppb..." should be "...50 ppm..."

1 CHAIRMAN WROTENBERY: Is there anything else, Mr.  
2 Carroll?

3 MR. CARROLL: I don't think so.

4 CHAIRMAN WROTENBERY: I had an extraneous -- what  
5 I think is an extraneous page too in my copy of the  
6 testimony, right before the affidavit.

7 MR. ALVIDREZ: Yes, that's another point. I  
8 think there was a draft letter to the BLM. It apparently  
9 was picked up on the bottom. That has nothing to do  
10 with --

11 CHAIRMAN WROTENBERY: Nothing to do.

12 MR. ALVIDREZ: -- it and should be removed.

13 CHAIRMAN WROTENBERY: We'll discard that. It was  
14 right before the affidavit.

15 MR. ALVIDREZ: May I proceed?

16 CHAIRMAN WROTENBERY: Please.

17 Q. (By Mr. Alvidrez) Ms. Gannon, have you also  
18 submitted prefiled rebuttal testimony in this case?

19 A. Yes, I have.

20 Q. And is that attached as part of PNM Exhibit C in  
21 this matter?

22 A. Yes.

23 Q. And does that testimony consist of a cover page  
24 and 18 pages of rebuttal testimony with your affidavit  
25 following?

1 A. Yes.

2 Q. And are there any changes or corrections to your  
3 rebuttal testimony?

4 A. Yes, there are.

5 Q. Can you tell us where those are?

6 A. On page 6, line 7, Burlington is misspelled. It  
7 should be "B-u-r-l-i-n-g-t-o-n-'s".

8 Q. Any other changes or corrections?

9 A. And on page, line 4, it says "...testing of the  
10 soil borings performed conducted by Burlington..."  
11 "conducted" should be removed.

12 Q. Anything else?

13 A. I believe that's it.

14 Q. Ms. Gannon, if you were asked the same questions  
15 as is set forth in your direct testimony and your rebuttal  
16 testimony today under oath, would your answers be the same?

17 A. Yes, they would.

18 Q. And can you tell us, have you previously been  
19 qualified as an expert witness in the area of groundwater  
20 contamination, investigation and remediation pertaining to  
21 oilfield operations in testimony before the Hearing  
22 Examiner of the Oil Conservation Division?

23 A. Yes.

24 MR. ALVIDREZ: May it please the Commission, I  
25 would move the admission of the direct and rebuttal



1 testimony of Maureen Gannon, as contained in PNM's Exhibit  
2 A and C, into evidence.

3 CHAIRMAN WROTENBERY: Any objection?

4 MR. CARR: No.

5 MR. CARROLL: No objection.

6 CHAIRMAN WROTENBERY: Okay, it is admitted.

7 MR. ALVIDREZ: I would tender the witness for  
8 cross-examination.

9 CHAIRMAN WROTENBERY: Thank you.

10 Mr. Carr?

11 CROSS-EXAMINATION

12 BY MR. CARR:

13 Q. Ms. Gannon, would you refer to what has been  
14 marked and included in PNM's exhibit book as Exhibit 22?  
15 And I'd ask you to turn to the second page of that exhibit.  
16 This is a letter prepared by you, is it not?

17 A. Yes, it is.

18 Q. And it is directed to Mr. Olson at the OCD?

19 A. Yes.

20 Q. This is a summary of activities that had occurred  
21 at the Hampton 4M well site prior to March 31, 1998; is  
22 that right?

23 A. Correct.

24 Q. On the second page you discuss what are PNM  
25 concerns about Burlington's remediation efforts. And if we

1 go below the Roman numeral II to the second -- the  
2 paragraphs at the bottom of the dot preceding each one,  
3 when we look at that first paragraph it states:

4  
5 Burlington states they have removed contaminated  
6 soils to a depth of 15 feet in the deepest areas of  
7 their source area excavation. Sampling of temporary  
8 well borings TPW-05 and -07 by Burlington detected  
9 significant contamination in the 15 to 16-foot  
10 interval. Thus, excavating the source area only to 15  
11 feet at the deepest location leaves documented  
12 contamination in place to act as a continuing source  
13 to areas downgradient.

14  
15 Is that an accurate statement of what was PNM's concern  
16 about the original remediation by Burlington at their  
17 production equipment site?

18 A. Yes.

19 Q. It was the one foot of contaminated soil that  
20 could act as a source; is that right?

21 A. From what they had gathered in their initial  
22 investigations, that's what we knew, at least, was out  
23 there, at a minimum.

24 Q. Let's go back now to the first page of this  
25 exhibit and to the paragraph that -- right under the

1 heading, "Summary of PNM Activities".

2 When PNM excavated its former dehydration pit, it  
3 went to a depth of 12 feet; is that right?

4 A. That is correct.

5 Q. The water table under this side was at  
6 approximately 27 to 28 feet; is that correct?

7 A. During the initial vertical profiling activity  
8 that was conducted, it was initially found at about 28  
9 feet, but after a period of a few weeks' steady-state  
10 conditions, the groundwater actually equilibrated to  
11 approximately 22 feet.

12 Q. So below the base of your excavation there was at  
13 least 10 feet of soil?

14 A. Correct.

15 Q. You took a PID, a photo ionization detector,  
16 reading at the bottom of that excavation, did you not?

17 A. Yes.

18 Q. And the reading showed that it was in excess of  
19 1000 parts per million?

20 A. On the PID I believe it did, yes.

21 Q. And that's what it says here in the second  
22 sentence of that first paragraph; isn't that right? "Soils  
23 remaining at the bottom of the excavation exceeded 1000  
24 ppm..."?

25 A. Correct.

1 Q. All right. Now, in addition to that -- So you  
2 left contaminated soil below the bottom of your excavation;  
3 is that fair to say?

4 A. Yes.

5 Q. And you took a sample at that point, did you not?

6 A. (Nods)

7 Q. And when you had that sample analyzed, the  
8 benzene concentrations were 16 parts per billion?

9 A. Were 16 parts per -- Soil sample, 16 parts per  
10 million.

11 Q. Let me check, we don't have to make a guessing  
12 game out of this. I think it's in your testimony.

13 A. I think at page 12.

14 Q. On page 12?

15 A. Uh-huh.

16 Q. The results of this sample showed, it says, 16  
17 parts per billion; isn't that what it says for benzene?

18 A. Yes, and we just corrected that.

19 Q. Okay.

20 A. 16 parts per million.

21 Q. And so the standard is 10 parts per million?

22 A. The guideline is --

23 Q. The guideline --

24 A. -- 10 parts per million.

25 Q. -- all right. As to BTEX, it was what? 222

1 parts per billion? Or is that million?

2 A. 622.

3 Q. I'm sorry, 622 parts per million. What was the  
4 guideline?

5 A. 50.

6 Q. And the total petroleum hydrocarbons was 1301,  
7 with a guideline of 100, correct?

8 A. Correct.

9 Q. So we did leave -- you did leave substantial  
10 contamination below your excavation?

11 A. We left contamination in place. I would not call  
12 it substantial.

13 Q. All right. Every category was over the  
14 guideline?

15 A. Actually, at this time we didn't know we -- we  
16 had no reason to believe there was groundwater at the site.  
17 And because this site actually was on the borderline of the  
18 vulnerable areas, except for benzene, which was only 6 ppm  
19 above the guideline and the BTEX concentration, we actually  
20 -- we could not have closed it, but we were at levels that  
21 you can look at a risk-based assessment using the ranking  
22 factors, et cetera, and these were not highly contaminated  
23 soils. These were considered contaminated, but not highly  
24 contaminated as defined by the OCD guidelines.

25 Q. And so the guidelines are set forth in the OCD's

1 Unlined Surface Impoundment Closure Guidelines, correct?

2 A. Correct.

3 Q. And there's a ranking system that sets what those  
4 guidelines are. And if you are less than 50 feet to  
5 groundwater, then you fall under the first set of  
6 guidelines?

7 A. Right.

8 Q. And that's where we get the 10 parts per million  
9 for benzene, the 50 for BTEX and the 100 for total  
10 petroleum hydrocarbons?

11 A. That's correct.

12 Q. So under the guidelines at that time you couldn't  
13 have closed the pit?

14 A. No, but we could leave those soils in place,  
15 certainly.

16 Q. When you discovered, however, that you had a  
17 groundwater situation, those disappear, don't they? You're  
18 really then focusing on groundwater remediation?

19 A. That's true, that's true.

20 Q. When excavation began in December of 1999, you  
21 still had in the area of your former excavation, PID  
22 readings in excess of the 100 parts per million guideline,  
23 did you not?

24 A. I'm sorry, can you --

25 Q. Back in 1999 with the second round of

1 remediation, the Burlington effort last year, your PID  
2 readings were still -- in terms of total petroleum  
3 hydrocarbons, they were over the guideline even then?

4 A. I didn't collect any readings during that. We  
5 know that the borings underneath the pit, actually, prior  
6 to that time, earlier in the year, the SB-2, that  
7 Burlington collected, or installed and then took a sample,  
8 those, in fact, were below guideline, yes, at 15 feet.

9 Q. Okay. You were concerned and expressed concern  
10 in your March 31 letter that one foot of contamination at  
11 the Burlington excavation site could be a continuing source  
12 of contamination. Isn't it true that if you leave 10 or  
13 more feet with contaminated soil behind, that also could be  
14 a continuing source of contamination?

15 A. What we left in place was essentially residual  
16 contamination. What was found in the southeastern portion  
17 of the wellpad when Burlington did their initial  
18 investigations was, TPW-5 and -7 were very saturated. Free  
19 product was present in those borings, even for the short  
20 time -- Or, I'm sorry, free product was not detected, but  
21 extremely high levels of benzene in groundwater.

22 We did not see that below our -- We had not  
23 encountered water, but we didn't see the saturated  
24 conditions in soil.

25 Q. But you did have conditions that exceeded pit-

1 closure guidelines?

2 A. No, not necessarily.

3 Q. You don't think the readings that you got, that  
4 we just reviewed from page 12 of your testimony were in  
5 excess of the pit closure guidelines?

6 A. I'm not denying that they weren't in excess, but  
7 that's why we need, under the OCD directives, to go back  
8 and do vertical-extent profiling.

9 Q. And you --

10 A. But you can leave soils in place. We've done  
11 that numerous times, if you can demonstrate a clean bottom  
12 at some point below your pits.

13 Q. And whether or not you can close a pit is a  
14 determination not made by PNM but by the OCD; isn't that  
15 correct?

16 A. That's absolutely true.

17 Q. And you have requested, have you not, that that  
18 be approved?

19 A. Yes.

20 Q. And you have been denied, have you not?

21 A. No, we have not received --

22 Q. Have you been -- Have they approved it?

23 A. No, we have not -- We've gotten nothing from  
24 them --

25 Q. You got --



1 A. -- regarding that.

2 Q. -- no approval to --

3 A. I don't have a denial or an approval.

4 Q. It has been sitting before the Division for how  
5 long?

6 A. I believe I gave it to them sometime in the fall  
7 of 1998.

8 Q. And they have not approved it?

9 A. No, they have not denied it either.

10 Q. Now, you were talking -- testified about site  
11 restrictions when you were out there trying to remove the  
12 contamination at your pit. And Ms. Ristau indicated that  
13 moving toward the dehydrator that was on the site, the  
14 samples were actually clean, and therefore there was no  
15 reason to ask Williams to move the equipment. You were  
16 present for that testimony, were you not?

17 A. Yes, I was.

18 Q. Wasn't the problem that you needed more room so  
19 you could go deeper, if you were going to remove the  
20 contamination that you left at 14 feet?

21 A. Again, this is a site where we had no idea what  
22 was below at 22 feet or 28 feet as far -- We didn't believe  
23 there was groundwater. So we approached this site as we do  
24 many, many other sites. We dig the gross contamination,  
25 the bulk of the contamination, but we will leave

1 contamination on side walls, we leave a hot bottom, what we  
2 consider hot, which is over the OCD guidelines, we'll come  
3 back and do vertical profiling.

4 But we do not necessar- -- and in most instances  
5 the norm is not to move equipment. It's not our equipment,  
6 it causes time delays, you know, having to work with the  
7 operators, the gathering companies, et cetera. So that's  
8 not a standard practice for us. And this seemed to be a  
9 typical site at the time.

10 Q. Isn't the only reason you didn't go below 12 feet  
11 is, that was as deep as the backhoe would go?

12 A. Well, we were experiencing a lot of cave-ins,  
13 and --

14 Q. I'm having a hard time -- I'm sorry, I'm having a  
15 hard time hear- --

16 A. We were experiencing a lot of cave-ins. We were  
17 on the edge of the wellpad with the trackhoe, all of those  
18 things. And again, this was a standard pit to us at that  
19 time. So it was normal protocol, the way we conducted our  
20 work.

21 Q. When we talk about the bottom of the pit, I'd  
22 like you to see if we can get a handle on what you mean.  
23 When we talk about the pit bottom, we have three actual  
24 points we could be talking about: The bottom of the  
25 impoundment at the time there was discharge, correct?

1 A. Yes.

2 Q. And you can also call the bottom of the pit the  
3 bottom of the excavation when you dug it out; is that  
4 right?

5 A. That's correct.

6 Q. And then we also have another term for a pit base  
7 or something like that. What is that?

8 A. That's where the contamination seeks its lowest  
9 point. It's below a pit. So as we have that bell shape,  
10 as you so adequately described, coming out, then it seeks a  
11 point where the most heavy contamination, you know, resides  
12 or finds its way. And so that would be the case at 16  
13 feet.

14 Q. Okay. In this situation, even though the  
15 hydrocarbon contamination would float on the water, I mean,  
16 it was able to migrate down into the formation. That's why  
17 we have this dark streak, when we excavated we found this  
18 dark streak?

19 A. Right, through leaching and percolation,  
20 contamination will move downward.

21 Q. When you filed your prefilled testimony, at page  
22 37 of the direct, at the bottom of the page you were asked  
23 this question. Are you with me?

24 A. Uh-huh.

25 Q. Line 19: "About how much has PNM spent to date

1 at this site for remediation and investigation?"

2 And you said, "Over \$200,000". Did you prepare  
3 that number?

4 A. Yes.

5 Q. And that number is correct?

6 A. Yes, it is.

7 Q. I'd like to ask you, other than physical  
8 excavation, what does PNM consider to be remediation at  
9 this site?

10 A. Well, as is outlined in detail in our groundwater  
11 management plan, remediation involves characterization,  
12 which is investigation, and many times that can be -- cause  
13 a lot of -- or create, you know, a very costly portion of  
14 the total amount that's spent at a site. You know, it  
15 includes the installation of the monitoring wells, the  
16 excavation, the drill rig to conduct vertical profiling,  
17 all of the analytical results, the consultant that we  
18 might, you know, discuss various technical issues with.

19 So remediation is not just physically going out  
20 and digging up dirt.

21 Q. It would include monitoring wells, it would  
22 include -- Would it include soil borings?

23 A. Exactly.

24 Q. Do your duties with PNM include the budgetary  
25 aspects of your efforts at the Hampton 4M?

1 A. Yes.

2 Q. I'd like to hand you a document that was produced  
3 to me yesterday pursuant to a subpoena. Have you seen this  
4 document?

5 A. Yes, I have.

6 Q. Was this prepared by you?

7 A. Yes, it was.

8 Q. And are the figures on this document accurate?

9 A. Yes, they are. As we've indicated, they're not  
10 audited, and...

11 MR. CARR: May it please the Commission, I have  
12 marked this as Burlington Exhibit 42, and I would move its  
13 admission.

14 MR. ALVIDREZ: We have no objection.

15 CHAIRMAN WROTENBERY: Any objection, Mr. Carroll?

16 MR. CARROLL: No objection.

17 MR. CARR: It's Number 43.

18 CHAIRMAN WROTENBERY: 43? Okay, Exhibit Number  
19 43 submitted by Burlington is admitted.

20 Q. (By Mr. Carr) I'd like to ask you also, Ms.  
21 Gannon, to go to your chronology, which is Exhibit 13, and  
22 if I look at the costs you've incurred at this site, they  
23 run only through January of this year, correct?

24 A. Yes.

25 Q. During 1996 you had a total cost of \$5259, and if

1 we look at your chronology, that would include the items  
2 shown on this chronology, the first three items, the pit  
3 remediation and the vertical extent drilling, correct?

4 A. I would have to qualify that. In 1996 we didn't  
5 know we had a groundwater site until December. So all of  
6 our money then was being tracked to our general pit-  
7 remediation work order. So there may be some allocation  
8 that is not reflected here.

9 Q. Okay. Well then, let's just go to 1997.

10 A. Okay.

11 Q. Okay? And if I look on your chronology, starting  
12 with the fourth entry, January 13th, 1997, it runs for  
13 about two pages, and when I look at that, it appears that  
14 during that year you drilled six monitor wells, did some  
15 soil boring and drilled TWP wells 1 through 6, correct?

16 A. Well, without going through it individually, I  
17 will accept that.

18 Q. And your total cost for that year was \$29,481,  
19 correct?

20 A. It appears so.

21 Q. If we go to 1998 on this exhibit -- and you can  
22 correct any of these numbers; this is my count -- but you  
23 drilled three monitor wells, did Soil Borings 1 and 2 and  
24 sampling.

25 My question is, what else did you do in 1998 to

1 get to \$154,000 in costs for remediation and investigation?  
2 Why is that number about five times more than 1997 when  
3 less was done?

4 A. During 1998 we did a tremendous amount of data  
5 assimilation, did --

6 Q. Was that in preparation for the Examiner Hearing?

7 A. It was actually data that has been shared with  
8 Burlington, OCD, and all matters of this case and all  
9 matters of this site. So we were the entity that was  
10 actually generating the bulk of the data and then sharing  
11 that with the involved parties. So --

12 Q. Didn't this occur after you were directed to  
13 perform additional remediation at the site?

14 A. I'm sure some of it did.

15 Q. And weren't these costs actually incurred so that  
16 you wouldn't have to remediate?

17 A. No, we've remediated, we have conducted  
18 remediation, so...

19 Q. The data that you acquired during that year was,  
20 the way you define it, remediation. It's gathering data?

21 A. That's part of it, absolutely.

22 Q. But the purpose was to come to this hearing so  
23 you wouldn't have to remediate the site?

24 A. The purpose was to try and understand what was  
25 occurring upgradient or offsite or wherever these other

1 sources were occurring. That was the primary source. A  
2 lot of our work during 1998 was talking to Williams, doing  
3 a lot of footwork, canvassing the area, trying to determine  
4 what other sources might be -- might exist.

5 Q. Does that figure include fees of outside  
6 individuals who worked on this project, or was this all in-  
7 house --

8 A. No, this is, as you can see, expenses other than  
9 PNM labor. This included everything else.

10 Q. Does this include legal fees?

11 A. Yes, it does.

12 Q. So Mr. Alvidrez's fees would be here too?

13 A. I don't think I can speak about that. I don't  
14 think that's relevant here.

15 Q. Well, I'm asking you the question. He can object  
16 if it's irrelevant. But my question is, we have this huge  
17 number for remediation, and my question is, is it for  
18 remediation or to avoid remediation?

19 A. We have a large number for managing a very  
20 comprehensive, complex groundwater site in terms of, you  
21 know, the extent of contamination. That's what that number  
22 reflects.

23 Q. In January of 1999, you stopped at that point in  
24 time. Why was that?

25 A. Well, when I received the request from the



1 subpoena, this is what I assumed you were referring to.

2 Q. And you thought we didn't want anything after  
3 January of this year?

4 A. Well, as we only had a short time to gather  
5 information in between time, preparing for the case, this  
6 is what I had on hand.

7 Q. Has your level of activity this year been similar  
8 to what it was in 1998?

9 A. I'd have to look at the numbers.

10 Q. You did incur \$34,000 just investigating this  
11 site in January of this year?

12 A. Yeah, you know, I'd have to look at the detail --

13 Q. And you don't know; is that right?

14 A. -- breakdown. I'm sorry?

15 Q. And your answer is, you don't know what that  
16 would include?

17 A. Yes, exactly.

18 Q. Let's go to your testimony, your rebuttal  
19 testimony on page 2-R, or 2 Rebuttal. I'd like you to go  
20 to line 4 on page 2 of the rebuttal, and it reads:

21

22 While what Burlington witness Hasely says is  
23 mostly accurate, it would be a mistake to construe  
24 these activities as constituting an adequate or full  
25 investigation of the site.

1           When you say that Mr. Hasely's testimony is  
2 mostly accurate, that implies that some of it is  
3 inaccurate; is that right?

4           A.    Yes.

5           Q.    And the point where you believe Mr. Hasely to be  
6 inaccurate, you have pointed out in this testimony; isn't  
7 that true?

8           A.    Yes.

9           Q.    Let's go to page 6 of this testimony.  There's a  
10 question starting on line 3, and it references Mr. Hasely's  
11 testimony, and then it says:

12  
13               ...he refers to an OCD letter dated November 24,  
14 1997 which is Burlington Exhibit 10.  Mr. Hasely  
15 states that this letter is an approval of Burlington's  
16 work plan dated September 19, 1997 with some  
17 additional conditions.  Did Burlington fulfill the  
18 additional conditions as set forth in the OCD letter  
19 attached as Burlington Exhibit 10?

20  
21 And your answer is, "No, it did not."  And since:

22  
23               The OCD's letter of November 24 specifically  
24 requires Burlington to install one well "at the  
25 location of temporary monitoring well TPW-7"...

1 Burlington has never installed such a well.

2

3 That is, in your opinion, an inaccuracy in Mr. Hasely's  
4 testimony, correct?

5 A. Well, maybe he felt that he had fulfilled the  
6 directive, but it was obvious that that well has still not  
7 been installed.

8 Q. Are you aware of discussions between Burlington,  
9 Mr. Hasely and Mr. Olson whereby it was agreed that that  
10 well, a well, would be drilled at the location of MW-7 and  
11 that that TPW-7 well would not be required?

12 A. At the location of MW-7?

13 Q. Are you aware that there were discussions where  
14 that well was no longer required and an additional well  
15 instead was to be drilled?

16 A. No, I'm not aware of any discussion.

17 Q. And if that occurred, then Burlington wouldn't be  
18 in violation of the requirements of their work plan as  
19 approved by the OCD; isn't that correct?

20 A. Yeah, I was not privy to any discussions.

21 Q. But if that happened, and we will show that it  
22 did, then this wouldn't be a violation or an inaccuracy;  
23 isn't that true?

24 A. Except that it doesn't fulfill the requirements  
25 of the groundwater management plan which specifically asks

1 for a source well, and that's where TPW-7 is --

2 Q. And --

3 A. -- in the area of their old source.

4 Q. And those plans cannot be altered in consultation  
5 with the Oil Conservation Division?

6 A. Well, I believe it has to be a written  
7 alteration.

8 Q. Do you get all written alterations?

9 A. Well, I've requested a very recent copy of the  
10 groundwater management plan by Burlington, so I would  
11 assume any alterations would be in there.

12 Q. Let's go to the next page, the question at the  
13 bottom of page 7. It references the page, and it says:

14

15 ...Burlington witness Hasely states that PNM took  
16 no new action to the Division's March 13, 1998  
17 directive. Do you agree with this assertion?

18

19 And you disagree. That's one of the things where Mr.  
20 Hasely is not quite accurate; is that correct?

21 A. That's right.

22 Q. And you list the things that you did. You said  
23 first, "PNM appealed this directive." Is that new action  
24 to investigate and remediate this site?

25 A. Well, it's certainly new action, saying, Wait a

1 minute, there's a problem here.

2 Q. Then you go on, and you start list- -- You  
3 understand that what Mr. Hasely was saying was that you  
4 didn't undertake any new action, all right? You understood  
5 that question, did you not?

6 A. Yes, I did.

7 Q. And then you list the things and you say, "We  
8 excavated our former pit..." That didn't occur after March  
9 13, did it?

10 A. No.

11 Q. That wasn't new action, was it?

12 A. No.

13 Q. You "performed vertical extent drilling". That  
14 wasn't new action, was it?

15 A. No.

16 Q. You "installed and surveyed in 8 monitoring  
17 wells". That wasn't new action, was it?

18 A. Yes, it was.

19 Q. You had --

20 A. Well, the surveying we certainly did after March.  
21 We surveyed the site several times.

22 Q. But you had done that before, had you not?

23 A. Yeah, but these were new surveys, very relevant  
24 surveys.

25 Q. You "performed quarterly groundwater sampling".

1 That's not new activity, that was --

2 A. Those were new quarterly events, new data being  
3 gathered.

4 Q. You were doing that before March 13, were you  
5 not?

6 A. Yes, but we were collecting new data, brand-new  
7 data, afterwards.

8 Q. We understand that, but we're looking for new  
9 activity that you undertook, you hadn't been doing before.

10 A. I don't think that's what this says, though.

11 Q. Mr. Hasely said -- responded to new action that  
12 you were taking. And you're here saying that the new  
13 action you took was, you continued to survey, you continued  
14 an existing free-product recovery well and, by the way, we  
15 excavated our pit before, correct?

16 A. Well, we didn't walk away. We continued to  
17 fulfill the requirements of our groundwater management  
18 plan. I too was having personal discussions with Bill  
19 about this site.

20 And in fact, on September 1 of 1998 when he sent  
21 us a letter regarding the installation, or determining the  
22 downgradient extent of contamination, he also stated that  
23 your actions to date have been satisfactory. That was six  
24 months after the March 13th, 1998, letter.

25 So I was, in fact, discussing our approach with

1 Bill and -- just as Ed does as well.

2 Q. But what you have here, your excavation, your  
3 vertical drilling, your surveying, your continuation of  
4 groundwater sampling, and the continuation of your free-  
5 product recovery well, you think that that is new activity?

6 A. Well, considering -- You know, we had appealed  
7 the directive, and this was what we agreed to do in the  
8 meantime.

9 Q. Did you agree, or did you --

10 A. Well, I had --

11 Q. -- just announce that's what you were --

12 A. No, we sent a letter to OCD, and I had talked  
13 about this with Bill.

14 Q. And you told the OCD, This is what we're going to  
15 do while we appeal?

16 A. Yes, but if we see significant changes  
17 downgradient, we will call you immediately.

18 Q. And you sought a stay of the OCD directive --

19 A. Yes.

20 Q. -- did you not? And the stay was denied, was it  
21 not?

22 A. Yes, it was.

23 Q. You're not suggesting you were in compliance with  
24 the March 13 letter, were you?

25 A. No.

1 Q. We go to the next page, and on page 14 of his  
2 testimony Hasely states that, quote:

3  
4 "No effort to clean up the Hampton 4M well site  
5 could be effective until the area surrounding the old  
6 PNM unlined dehydrator pit was remediated." Do you  
7 agree...?

8  
9 And you did not; is that right?

10 A. I'm sorry, I don't know where we are.

11 Q. I'm sorry, we're on page 8, starting on line 11.

12 A. Okay.

13 Q. Hasely said:

14  
15 "No effort to no effort to clean up the Hampton  
16 4M well site could be effective until the area  
17 surrounding the old PNM unlined dehydrator pit was  
18 remediated."

19  
20 You disagreed?

21 A. Yes.

22 Q. You believe that a remediation could take place  
23 and that well and that portion of the pad could be left out  
24 of the remediation plan; is that what you're saying?

25 A. Yes, I do.



1 Q. And you would agree with me that the highest  
2 concentrations of free-phase, the highest concentrations of  
3 contamination, were directly under that pit?

4 A. Yes, but we were downgradient, significantly  
5 downgradient, of Burlington's operations.

6 Q. But just because you disagree, does that make Mr.  
7 Hasely's statement wrong if he believes it needed to go?

8 A. Well, we have two experts disagreeing.

9 Q. All right. It doesn't mean he's wrong, it just  
10 means you disagree, correct?

11 A. In my opinion I disagree, yes.

12 Q. All right. Now, you take -- On the next page,  
13 page 9, you say -- The question is:

14

15 At page 15 line 2, Burlington witness Hasely  
16 states that PNM did not remediate this site. Is this  
17 statement correct?

18

19 And then you say, "No. Burlington Witness...has only to  
20 recall his experience and observations" at the site, and  
21 you go on from there. You disagree with that statement?

22 A. Yeah.

23 Q. You understand that these questions were not  
24 stand-alone, that you had to look at them in context to  
25 understand them, do you not?

1 A. Yes.

2 Q. If we go to page 15 of Mr. Hasely's testimony,  
3 the question that you're concerned about is in Mr. Hasely's  
4 testimony at page 15. Starting on line 5 [sic], the  
5 question is, "Did PNM remediate the site?" And Mr.  
6 Hasely's answer is "No".

7 That's what you're concerned about, correct?

8 A. Yes

9 Q. All right, if we go back to page 14 there's a  
10 question starting at line 6, and the question is:

11

12 What has Burlington done to remove the source of  
13 contamination at the Hampton 4M well site since the  
14 drilling of the last down gradient monitor well?

15

16 The answer is:

17

18 Burlington determined that no effort to clean up  
19 the Hampton 4M Well site could be effective until the  
20 area surrounding the old PNM unlined dehydrator pit  
21 was remediated. Therefore, by letter dated October  
22 26th, 1998, Burlington advised PNM that "the delays by  
23 PNM in remediation of contamination caused by PNM's  
24 discharge of hydrocarbons from its dehydrator can no  
25 longer be tolerated" and demanded that PNM

1 "immediately undertake the remediation of the  
2 contamination at the Hampton 4M well." Burlington  
3 also advised PNM that if they did not undertake the  
4 remediation by October 30, 1998, Burlington would  
5 "promptly remediate the contamination resulting from  
6 PNM's operation of its dehydrator at the Hampton 4M  
7 Well site."

8  
9 And then it has a cite.

10  
11 What response did Burlington receive from PNM to  
12 Burlington's demand for remediation?

13  
14 Answer:

15  
16 PNM responded to Burlington on October 28th, 1998  
17 denying that the contamination at the Hampton 4M Well  
18 site was the result of any past or present operations  
19 by PNM and declined to undertake or participate in any  
20 remediation. PNM merely stated that it would  
21 "...encourage Burlington to immediately proceed with  
22 remediation of the contamination..."

23  
24 Then the question is, "Did PNM remediate the site?"

25 My question is, after our demand, did you

1 remediate the site?

2 A. Why would we remediate someone else's  
3 contamination?

4 Q. The answer is no, right?

5 A. We had remediated our --

6 Q. Did you understand --

7 A. -- activities.

8 Q. -- my question?

9 A. I --

10 Q. My question is, after there was a demand to clean  
11 up this site, my question is, did you do it?

12 A. Burlington was demanding --

13 Q. I'm asking --

14 A. Their -- Why would we remediate contamination  
15 that's not ours.

16 MR. CARR: May it please the Commission, this is  
17 a question that can be answered. The question is a simple  
18 one. Burlington demanded that they remediate the site.  
19 The question is, at that time, did PNM remediate the site?

20 MR. ALVIDREZ: I'm going to object. I think  
21 we're getting awfully argumentative here. The witness has  
22 discussed what, in her opinion, she believes PNM did to  
23 remediate the site. It's -- She's testified to it live  
24 today, and it's certainly replete in her testimony with  
25 respect to this portion of Mr. Hasely's testimony himself.

1 MR. CARR: May it please the Chair, we have a  
2 rebuttal testimony which basically says our witness is  
3 untruthful, and these statements are taken so out of  
4 context that when you put the question in context, the  
5 question isn't, Did they remediate the site? Of course  
6 they did. They excavated the pit, they had a free-product  
7 recovery well. We're not asking...

8 But when we say, and write them and say, You've  
9 got to go out and remediate it by the end of the month, or  
10 we will, then we say, did they? and we say no, because they  
11 didn't, we don't think we should be accused of not being  
12 truthful.

13 The question is simple. After we demanded, after  
14 we demanded, that they clean up by October 30, the question  
15 is, did PNM remediate the site? It can be yes or it can be  
16 no. Did they do something at that time? That's the  
17 question. I'd like to have it answered.

18 MR. ALVIDREZ: May it please the Commission, it's  
19 not framed in terms of whether Mr. Hasely is being truthful  
20 or lies. It's asking, does this witness agree with what  
21 Mr. Hasely saying? And it simply goes to the disagreement.

22 MR. CARR: This -- That is not correct.

23 CHAIRMAN WROTENBERY: Ms. Gannon, could you just  
24 summarize your answer to that particular question?

25 THE WITNESS: PNM at that time -- We were

1 demanded by Burlington to go out and conduct a remediation  
2 in the area of our old activities, former activities. We  
3 had accomplished that through the excavation of our pit,  
4 subsequent vertical profiling, the free-product recovery.  
5 And what we knew had come from our pit, we had taken care  
6 of.

7 Yes, there was residual contamination left in  
8 place, but again, it was not saturated soil, and the OCD  
9 allows that once you've removed the bulk or the grossly  
10 contaminated soil. So I don't think that's a fair  
11 question.

12 We remediated our former dehy pit.

13 MR. CARR: Let me ask another question.

14 CHAIRMAN WROTENBERY: Please.

15 Q. (By Mr. Carr) What did you do after we demanded  
16 that you go remediate the site, at the site, that you call  
17 remediation?

18 A. What did we do?

19 Q. Yeah.

20 A. When?

21 Q. After the demand in October -- After we wrote on  
22 October 26th, 1998, and demanded that Burlington -- that  
23 PNM remediate the site, what did you do to remediate the  
24 site, pursuant to that demand?

25 A. We responded to that in this letter back to

1 you --

2 Q. And that --

3 A. -- indicating that we had already conducted  
4 remediation of our activity.

5 Q. When Mr. Hasely said that in response to that you  
6 didn't go out and do remediation, was he lying?

7 A. I don't know, I don't know. We conducted  
8 remediation of our activities. We weren't going to move  
9 upgradient and conduct remediation of Burlington's.

10 Q. You said Mr. Hasely's testimony was mostly  
11 accurate. You have testified that you identified the  
12 places in your rebuttal where he was not.

13 My question is, when he said you didn't go out  
14 and remediate after he demanded you do, is that a  
15 misstatement?

16 A. Remediate the Hampton site or some other site?

17 Q. The Hampton site. You know, we're talking about  
18 Hampton well.

19 A. True.

20 Q. What is true?

21 A. We didn't go out and remediate it.

22 Q. Okay. So Mr. Hasely's statement there was  
23 correct?

24 A. No, because it was taken out of context from the  
25 letters that transpired.

1 Q. When you put it in context, we asked you to go  
2 remediate, did you remediate --

3 A. You said to remediate this site. We had  
4 conducted remediation of our activities.

5 Q. Can we just agree that you didn't do anything new  
6 in response to the letter but told us to go ahead and do  
7 it?

8 A. Anything new. I don't know. You know, I'd have  
9 to go back and look at what we did after that. We did  
10 other things besides...

11 Q. These are the points where you think Mr. Hasely  
12 was not quite accurate?

13 A. Right.

14 Q. You would agree with me, would you not, that the  
15 Hampton 4M is an atypical site?

16 A. Yes.

17 Q. If we look at your Exhibit Number 25, we look  
18 at -- This is a summary of PNM's groundwater sites  
19 associated with dehydrator pits, correct?

20 A. Yes.

21 Q. And if you look at this, these are -- you have --  
22 out of 1200, you do have 29 sites where you do have  
23 groundwater issues at dehydrator pits, correct?

24 A. Yes.

25 Q. Ten percent?



1 A. Of the 296, yes.

2 Q. That's what this shows, right?

3 A. Uh-huh.

4 Q. At the bottom of this page we have a list of  
5 free-product sites, eight of them, correct?

6 A. Right.

7 Q. Is the purpose of this hearing to set a precedent  
8 so that you won't have to continue remediation at those  
9 sites?

10 A. I'm not sure I can answer that.

11 Q. In your testimony you have expressed concern  
12 about the removal of your free-product recovery well during  
13 the efforts in 1998, 1999.

14 You agree with me, would you not, that the free-  
15 product recovery well was not going to accomplish a full  
16 remediation of the site, it wasn't going to get the source?

17 A. I agree.

18 Q. It was intended by Burlington -- You, in fact,  
19 intended to take this out, did you not, prior to the time  
20 it was being removed, that it was removed by Burlington?

21 A. No, we had no intention of taking it out.

22 MR. CARR: May I have just a moment, please?

23 CHAIRMAN WROTENBERY: Certainly.

24 Q. (By Mr. Carr) Ms. Gannon, you testified in the  
25 Examiner Hearing last November, did you not?

1 A. Yes.

2 Q. And at that time you told the truth, you were  
3 under oath. I'd like to hand you the transcript of that  
4 hearing, and I'd ask you to refer to page 192 of that  
5 testimony. Is the MW-6 the free-product recovery well?

6 A. Yes.

7 Q. And during that testimony on page 192, the  
8 questioning extends -- goes on from the page before, and it  
9 talks about SB-2, and starting on line 9 -- and if you want  
10 to go back and look at the questions before this, the  
11 question -- It's a bad question, it's probably mine. It  
12 says:

13

14 Dissolved phase, okay.

15 Any other work that's been done out there?

16

17 And your answer was:

18

19 We came out to -- We received notice on November  
20 5th that our free-product [recovery] system in MW-6  
21 had been removed, and we had intended to take that out  
22 prior to Burlington's excavation activities.

23

24 Hadn't you planned to take that out?

25 A. That was the week before Ed Hasely had called me

1 to say that they would be conducting site-wide remediation,  
2 and would I -- and they had intended to remove our well.  
3 And I said, We would like to have an opportunity to take  
4 that out ourselves.

5 Q. You were not intending to otherwise remove it?

6 A. He told us they would remove it if we didn't.

7 Q. My question is, were you --

8 A. No --

9 Q. -- otherwise --

10 A. -- no --

11 Q. -- intending to remove it?

12 A. Huh-uh.

13 Q. So the effort of PNM at the time that Burlington  
14 went out was continuing to sample, correct?

15 A. Yes.

16 Q. Quarterly sampling, surveying the wells, and a  
17 free-product recovery well, correct?

18 A. Yes.

19 Q. And were you doing anything else at the site?

20 A. We were conducting -- canvassing the area,  
21 looking for other -- talking to -- determining, you know,  
22 water sources, et cetera, in the area, talking to Williams  
23 about the pipeline that ran across the site or up above the  
24 site and down through the arroyo.

25 We were doing some reconnaissance also, just to

1 see if we could get a handle on where these upgradient  
2 sources might exist.

3 Q. Now, at that point in time you were aware that  
4 there was a plume of dissolved-phase hydrocarbon moving  
5 from the wellpad, correct?

6 A. Yes, yes.

7 Q. And you would agree that it was moving at a rate  
8 of as much as 500 feet a year?

9 A. Those are some of the estimates, yes.

10 Q. And if we look at your Exhibit 8 we can see that  
11 Mr. Burton's water well is approximately 1200 feet away,  
12 correct? That's correct?

13 A. I think so.

14 Q. You can check it if you want.

15 A. No, I don't --

16 Q. You don't have to, if you --

17 A. That sounds about right.

18 Q. And so we have a plume that's moving 500 feet a  
19 year, there's a well 1200 feet away, contamination had been  
20 discovered in 1996, correct?

21 A. Uh-huh.

22 Q. And at that point we had a free-product recovery  
23 well on the site, and that might slow it down; is that fair  
24 to say? You have to answer.

25 A. Oh, yes, I'm sorry.

1 Q. That was not going to get to the heart of this  
2 remediation, it was not going to stop it, was it?

3 A. No.

4 Q. Something more was needed?

5 A. Yes.

6 Q. And we demanded that you go do it; isn't that  
7 correct?

8 A. Yes, you did.

9 Q. You told us we could do it if we wanted to.

10 A. Yes.

11 Q. Isn't it fair to say that something had to be  
12 done out there?

13 A. I agree, yes.

14 Q. And you could have, but we did, right?

15 A. We could have what?

16 Q. You could have gone out and undertaken some sort  
17 of additional work, but --

18 A. Well, we didn't control -- I mean, we weren't the  
19 operator on the wellpad, we didn't control it.

20 Q. You didn't think we would say you couldn't come  
21 out and do something, did you?

22 A. Oh, I'm sure you wouldn't have. You would have  
23 loved for us to come out.

24 Q. All right. But the truth of the matter is,  
25 something had to be done, and Burlington went out and did

1 something?

2 A. Yes, they did.

3 Q. And you have been critical of that since that  
4 date; isn't that fair to say?

5 A. Yes.

6 Q. You've been critical of Burlington's involvement  
7 really all along in this effort; isn't that fair?

8 A. Not initially, no.

9 Q. Didn't you talk about our involvement being  
10 really just a limited involvement at the beginning?

11 A. Yes, I did.

12 Q. If we go to your chronology, which is Exhibit 13,  
13 I think -- Yes. On the first page -- Sorry. On page 13 of  
14 that -- I'm sorry, on page 1 of Exhibit 13, the fourth  
15 entry, January 13, 1997, entitled "Notification", it says,  
16 PNM provided notification to the NMOCD with a copy to  
17 Burlington of groundwater contamination at the site.

18 Is it fair to say that's when we were advised and  
19 became aware that there was groundwater contamination?

20 A. Yes.

21 Q. If we go down two entries, February the 4th,  
22 about three weeks later, there was an on-site meeting,  
23 Burlington was there, correct?

24 A. Yes.

25 Q. On April the 9th there was another on-site

1 meeting, right?

2 A. Yes.

3 Q. On April the 14th Burlington discovered the seep.

4 The next entry, April the 16th, there was another  
5 on-site meeting between PNM, OCD and Burlington.

6 On that same day, April the 16th, Burlington  
7 obtained archeological clearance to construct an offsite  
8 collection trench?

9 A. Correct.

10 Q. On the very next day, the 17th, Burlington  
11 constructed a collection trench to the north of the well  
12 locations. Do you see that?

13 A. Uh-huh.

14 Q. The next one is April the 30th. It says  
15 Burlington attempted to excavate the area of its former  
16 tank discharge pit, and it goes on and then it talks about  
17 eight or nine test holes were being drilled by Burlington  
18 over the well location. That's April 30th.

19 On June the 4th, there was another on-site  
20 meeting where Burlington, PNM and the OCD met concerning  
21 further investigation.

22 Then again on June the 6th, Burlington continued  
23 soil borings near their equipment and tank batteries. All  
24 of this occurred, really, in about four or five months'  
25 time, did it not?

1 A. The actual work conducted?

2 Q. That we just went through --

3 A. Oh, right, since January.

4 Q. And this is what you're calling sort of limited  
5 involvement at the beginning?

6 A. Well, I'm not sure we're -- if it's in my  
7 testimony, I guess I'd like to see it --

8 Q. Okay.

9 A. -- so I can see what I was referring to.

10 Q. I think it's in your rebuttal at page 3. If we  
11 go to line 22 in your testimony on page 3 of the rebuttal  
12 is, The work done by Burlington at this site in 1999 [sic]  
13 through October, 1998 was rather limited.

14 A. Yes.

15 Q. And this is the activity in 1997 that you think  
16 was rather limited?

17 A. Well, you're talking about a very -- actual work  
18 that they conducted was really over a period of about a  
19 month or so.

20 Q. And other than that, we just -- But that's how  
21 you would characterize that response? That's my question.

22 A. Yes.

23 MR. CARR: Okay, thank you. That's all I have.

24 CHAIRMAN WROTENBERY: Mr. Carroll?

25 MR. CARROLL: No questions.



## EXAMINATION

BY CHAIRMAN WROTENBERY:

Q. There are a couple of places in your testimony where you talk about the fact that you don't have saturated soil conditions between the bottom of the dehydration discharge pit and the groundwater. I don't know if you need me to refer to some of those places or not --

A. No, that's all right.

Q. -- but I just wanted to ask you about your experience with instances of groundwater contamination.

Do I understand from what you're saying that you would expect to see saturated soil conditions in all circumstances if there had been migration of contamination from a pit through nonsaturated soils into groundwater?

A. For free-product appearance, or for dissolved phase?

Q. Well, if you could answer it for both questions. For free product, first of all.

A. Well, free product we do not often encounter. And typically, you know, you would expect to find saturated soil where it's very wet, oily, smelly, you know, and a good soil column down, especially at this site where there's just this tremendous volume beneath. And we have, you know, two different analytical results beneath the pit, and they actually appear in another exhibit which another

1 witness is going to introduce. I don't know if we want  
2 to -- if you want to look at that.

3 But the conditions beneath our pit were not  
4 saturated. And you look at the OCD guidelines and the  
5 definition of what we can leave in place and look at a  
6 risk-based analysis, and that's exactly what we have below  
7 our pits.

8 So I would expect to see some sort of a trail  
9 where we would encounter grossly contaminated soils with  
10 free product below the pits, especially with the volumes  
11 that we're seeing beneath the pit.

12 Q. Would it have to be saturated soil?

13 A. You know, I think it depends. I think in this  
14 instance, in all likelihood, it would.

15 Q. And why is that?

16 A. Because of the volume of free product that we see  
17 there four feet beneath -- in the monitoring well below our  
18 pits, or that was drilled in the middle of our pit,  
19 actually.

20 So unless we had just a tremendous amount of  
21 precipitation, you know, or -- and this well actually is a  
22 very new well, it's 1983. So to me, I would believe that  
23 we would see some sort of a continuous trail, which we did  
24 not see. It may not be saturated all the way down, but  
25 certainly a lot greater contaminant levels than we

1 encountered.

2 CHAIRMAN WROTENBERY: Commissioner Lee, did you  
3 have a question on that?

4 EXAMINATION

5 BY COMMISSIONER LEE:

6 Q. You did have ten gallons of free product, then  
7 you're going down -- Are they going down?

8 A. Yeah, they'll move downward, that's correct.

9 Q. Where is it going to be saturated?

10 A. Well, it would be somewhere beneath the pit.

11 Q. Saturation?

12 A. The soil has the capacity to absorb the free  
13 product, and --

14 Q. Absorbed by how much?

15 A. You know, it depends on the soil characteristics  
16 or the lithology beneath the --

17 Q. So it doesn't have to be saturated?

18 A. As far as the -- ?

19 Q. The path.

20 A. It doesn't have to be saturated for --

21 Q. For the fluid to move down to groundwater?

22 A. Yeah, I think if free product is present in the  
23 quantities that we're seeing, that we would see some sort  
24 of a continuous trail. It may not be saturated all the way  
25 down, but there would definitely be high contamination

1 throughout that soil column.

2 Q. That's 20-percent saturation?

3 A. I don't know, I don't know.

4 Q. So you called it 20-percent saturated?

5 A. I'm not sure what you're asking.

6 Q. Suppose you have ten gallons of free product,  
7 then you go to the groundwater. During the pass of this  
8 falling, you don't have to be saturated?

9 A. It does not have to be saturated.

10 Q. To move those fluids?

11 A. Well, if it was truly saturated, they probably  
12 would move down. But it wasn't saturated, we don't have  
13 saturated conditions under our pit at 15 feet. We actually  
14 have clean soil --

15 Q. So how clean --

16 A. Let me refer you to PNM Exhibit 56, if I may, and  
17 that actually is a cross-section of our pit. So you can  
18 see where the actual excavation ended, which was at 12  
19 feet. That's as far as our trackhoe could reach, given the  
20 limitations of the wellpad, et cetera.

21 The benzene was 16, which is 6 ppm above the  
22 guidelines.

23 BTEX was 622; the guideline standard is 50.

24 And TPH here is 1300. And the guideline, because  
25 we're within 50 feet of groundwater, would be 100.

1           So yes, there was contamination there, but this  
2 is not an indication of saturation.

3           Q.    So saturation is not a factor?

4           A.    Yes, it is.

5           Q.    How can it --

6           A.    Because of the quantity of free product, this big  
7 red area that we see down here at the water table. And as  
8 you move down to 15 feet, the benzene is actually 2, the  
9 BTEX is 37 --

10          Q.    Why does it make those contaminations to move  
11 down there?

12          A.    It didn't come from our pit, it came from  
13 upgradient. That is our contention.

14          Q.    Suppose right now I have the contamination from  
15 this pit, 10 gallons. Then can I reach down there?

16          A.    No.

17          Q.    Why?

18          A.    I mean, there are residual contamination, we  
19 don't deny that there's dissolved-phase, we contributed to  
20 dissolved-phase beneath our --

21          Q.    Dissolved phase is the same as the free product?

22          A.    No, it's not.

23          Q.    You have to have a free product to go down there  
24 to touch the water so it becomes the dissolved phase.

25          A.    No, no.

1 Q. Then what is the dissolved phase?

2 A. It's water moving through your pit, moving  
3 through that soil column that's picking up residual  
4 contamination.

5 Q. So that's the free product, right?

6 A. No, no.

7 Q. Your free product, the water goes through your  
8 free product, they have to reach equilibrium, right?

9 A. What we believe was discharged into our pit was  
10 water with trace hydrocarbons and maybe a small amount of  
11 free-phase floating product, an oil on top of the water.

12 Q. You call that water -- That oil, the liquid on  
13 top of the water, is free product?

14 A. That's correct.

15 Q. This free product is something from somewhere,  
16 from surface, right?

17 A. Yes.

18 Q. So along a path, they have some residue in the  
19 soil, right?

20 A. It has some capacity to absorb.

21 Q. Twenty percent?

22 A. It depends on the soil.

23 Q. Well, to -- In this case 20-percent, that's the  
24 saturation to inhibit the oil to move in the soil, right?

25 A. It depends on the soil.

1 Q. So this is free product?

2 A. Right, but what I'm saying is, we did not have  
3 these gross quantities of free product going through our  
4 pit. What we have is water with trace contamination, trace  
5 hydrocarbons, and that, in fact, can cause dissolved phase.

6 CHAIRMAN WROTENBERY: I'm sorry to interrupt. I  
7 have a call I have to take for just a couple of minutes.  
8 Could we take just a couple-minute break? I'll be right  
9 back, I apologize.

10 COMMISSIONER LEE: Ten minutes.

11 COMMISSIONER BAILEY: Ten minutes?

12 CHAIRMAN WROTENBERY: Do you want to go ahead and  
13 take a ten-minute break? Okay.

14 (Thereupon, a recess was taken at 2:12 p.m.)

15 (The following proceedings had at 2:22 p.m.)

16 CHAIRMAN WROTENBERY: Are we ready to go again?  
17 I apologize, Ms. Gannon --

18 THE WITNESS: That's all right.

19 CHAIRMAN WROTENBERY: -- for the interruption.

20 Q. (By Commissioner Lee) Well, suppose we have free  
21 product going down to the water table. Along the way we  
22 saturate it -- not saturate it, minimally saturate the  
23 soils, 20 percent. Then we leave the 20 percent of  
24 saturation of the free product along the way.

25 Then here comes the rain, all evaporation. Then

1 the rain is pure water. Then they contact with those  
2 residues, then you have a dissolved-phase, right?

3 A. That's correct.

4 Q. So the free product and dissolved product is  
5 actually the same product. One is in a concentrated form,  
6 the other one is in the water.

7 A. It's the same contamination, it's the same  
8 constituents.

9 Q. So the 20 percent with the water going through  
10 that, this 20 percent may be reduced?

11 A. (Nods)

12 Q. So you have a 10-percent saturation right now.  
13 Can you make a conclusion there's no free product going  
14 through this path?

15 A. Are you talking in general or about our site  
16 specifically?

17 Q. No, just --

18 A. Oh, in general. Can I make a conclusion that  
19 there would be no free product?

20 Q. No, I make --

21 A. Oh.

22 Q. Suppose I say, Well, based upon this 10-percent  
23 saturation, which in laymen's terms, is no heavy saturation  
24 of the soil, so I say there's no free product going through  
25 this path. I feel that's a questionable assumption.



1 A. I think you could say that.

2 COMMISSIONER LEE: Okay.

3 CHAIRMAN WROTENBERY: Thank you.

4 FURTHER EXAMINATION

5 BY CHAIRMAN WROTENBERY:

6 Q. And I had a question too about Exhibit 18 that  
7 maybe you could clear up for me. It was referenced several  
8 different times in the testimony, I think by several  
9 different people, and I was having reading Exhibit 18, so I  
10 was hoping -- I think it was Exhibit 18. No, I must have  
11 the wrong number.

12 It was the analytical results at the -- for  
13 the --

14 A. -- soil boring?

15 Q. No, the seep.

16 A. Oh, the seep.

17 Q. Yeah.

18 A. That is 18. It's actually --

19 Q. That is 18?

20 A. -- after the letter, there's --

21 Q. Oh.

22 A. -- there's analytical results

23 Q. I know what, I'm looking in the wrong book.

24 And you were testifying here that the analytical  
25 results show that benzene is at 40 ppb --

1 A. Yes.

2 Q. -- it's above the WQCC groundwater standard of 10  
3 ppb. Can you show me where that result is? I was having a  
4 hard time --

5 A. I don't read either. It looks like it's just a  
6 QA/QC report that the lab sends. It's attached, but not  
7 the actual analysis.

8 MR. ALVIDREZ: It appears that there may be a  
9 page missing from this exhibit. There is, in fact, a page  
10 that shows the levels.

11 THE WITNESS: So you're right, it's not there.

12 CHAIRMAN WROTENBERY: It's not there. Is that  
13 something that you could supplement?

14 MR. ALVIDREZ: It certainly is. In fact, I would  
15 imagine that Mr. Olson has the --

16 MR. OLSON: I believe we have that in the file.

17 MR. ALVIDREZ: -- since this is his.

18 CHAIRMAN WROTENBERY: Okay, if we could make  
19 copies of the analysis available, just to make sure we've  
20 got the record complete there.

21 Q. (By Chairman Wrotenbery) And I'm trying to  
22 remember, do we have the right units in that case? Is it  
23 parts per billion --

24 A. In groundwater, yes.

25 Q. -- that we're talking about?

1 A. Yes.

2 Q. Okay, in groundwater, that's right.

3 A. Right.

4 CHAIRMAN WROTENBERY: Okay. Mr. Olson, if you  
5 could --

6 MR. OLSON: It's in the file.

7 CHAIRMAN WROTENBERY: If you could make copies of  
8 that, and then we could --

9 MR. OLSON: Okay.

10 CHAIRMAN WROTENBERY: -- supplement our exhibit  
11 here for the record.

12 Q. (By Chairman Wrotenbery) And then also several  
13 times in the testimony, and I think by several different  
14 witnesses, there's references to a shift in the benzene-  
15 toluene-ethylbenzene-xylene ratios, where the ratio of  
16 benzene to other constituents is increasing, and I never  
17 fully understood what it was that was purported to be  
18 happening there, what that significance in the shift of the  
19 ratios is.

20 A. Well, benzene is the most soluble of those  
21 constituents. And so with a new release, where benzene is  
22 the -- Benzene indicates a new release of contamination.  
23 So if we should see increases in benzene, say, as opposed  
24 to the other constituents of BTEX, that would be an  
25 indication that there may be a new release or a release

1 from contamination that's existing on the site, maybe a  
2 mobilization of those contaminants.

3 Q. And it's because benzene is more soluble --

4 A. Yes, and it's --

5 Q. -- than the other constituents?

6 A. -- you know, that's -- Within a fresh source, or  
7 fresh source of contamination, benzene is going to be the  
8 precursor or the teller of a fresh source. If it's  
9 something that's been weathered or sitting for a while,  
10 you'll see the benzene component decrease in most  
11 instances. It's the lighter end of that -- of the BTEX  
12 components.

13 Q. And then in your rebuttal testimony I had a  
14 question, on page 16, and here you're talking about Mr.  
15 Olson's testimony. I'm referring to the question that  
16 begins on line 11. It says:

17

18 OCD witness Olson further testifies that the OCD  
19 has encountered one site with three feet of product on  
20 the groundwater and no upgradient source other than  
21 the dehydration pit.

22

23 And in your response you question:

24

25 ...why a dehydration unit would be installed

1 on...a well head site without the presence of a  
2 separation unit for the removal of gas condensate.  
3

4 And I'll ask Mr. Olson a little bit more on this particular  
5 question too, but I think what he's saying, or at least  
6 what the question is saying is that there wouldn't be an  
7 upgradient source. There could be a separator or some  
8 other source at a site that was downgradient or  
9 crossgradient of a dehydrator, couldn't there?

10 A. Another source of contamination or --

11 Q. Uh-huh. You, I think, conclude from -- or  
12 question his statement because you don't think that a  
13 dehydration unit would be installed on a wellhead site  
14 without a separation unit.

15 A. Right, without a large separation unit. Well, I  
16 guess it depends on the well, obviously, but, you know,  
17 this is not something that we dealt with, so I guess I  
18 was -- you know, I'm not certain what he was referring to,  
19 and I think I -- I just say I question what it was, and  
20 that it doesn't seem to be related to what we found at the  
21 Hampton and, in fact, what we found at most of our sites.  
22 I mean, it's not the same.

23 Q. Okay.

24 A. So this is atypical for us. But, you know, he  
25 may be able to explain this further.

1 CHAIRMAN WROTENBERY: Okay, I'll ask him about  
2 that one.

3 That was all I had. Do you have anything else?

4 COMMISSIONER BAILEY: (Shakes head)

5 CHAIRMAN WROTENBERY: Mr. Alvidrez?

6 MR. ALVIDREZ: Yes, may it please the Commission.

7 REDIRECT EXAMINATION

8 BY MR. ALVIDREZ:

9 Q. Ms. Gannon, I want to talk a little bit about the  
10 line of questioning having to do with the transport, if you  
11 will, of contamination through soils. And I think the best  
12 place to look is back on Exhibit 56 and kind of describe  
13 what is going on or -- at this particular site.

14 As I understand your earlier testimony, this is  
15 basically a cross-section of PNM's pit, including the soils  
16 underneath that area, and then the free product on top of  
17 the groundwater below; is that correct?

18 A. Yes, it is.

19 Q. You were asked a question about if you deposited,  
20 for example, ten gallons of free product in the pit and  
21 were given an assumption about an absorption rate of 20  
22 percent through the soils, and there seemed to be some  
23 suggestion that you would get free product in the  
24 groundwater as a result of that.

25 But let me ask, if you had soils that absorbed 20

1 percent of that free product, what type of readings would  
2 you expect in terms of your -- in the soils, for a 20-  
3 percent absorption rate?

4 A. Well, we'd probably see readings of benzene, you  
5 know, between 5000 and 10,000. They would be very, very  
6 high, as far as from an analytical standpoint. You  
7 wouldn't be able to pick that up on a PID, but lab results  
8 would show very high readings, in the neighborhood of  
9 10,000 p.p.m.

10 Q. And when we look even just at the pit bottom  
11 there, at the 12-foot level, do you see anything  
12 approaching that type of reading?

13 A. No, not at all.

14 Q. And if we continue down through the soil column  
15 there and we reach the 15-foot level, what type of readings  
16 are we talking about there in terms of the degree of  
17 saturation, in terms of free-product saturation that we  
18 would be looking at?

19 A. This is not saturated soil. This is below the  
20 guidelines.

21 Q. Let's talk a little bit about saturation, because  
22 I think there are a couple things that can saturate soil;  
23 isn't that correct? I mean, one substance could be water  
24 that saturates soil, and another substance could be free  
25 product, petroleum, that saturates soil, correct?

1 A. Correct.

2 Q. And when you're talking about soil saturation in  
3 this context, are you talking about soil saturated with  
4 free product?

5 A. In the context of our pits?

6 Q. Yes.

7 A. No.

8 Q. Okay. When you're talking about soil saturation,  
9 what are you talking about, in the context of the PNM pit?

10 A. Of water in the soil that has residual  
11 hydrocarbons.

12 Q. Okay. With regard to free product, what is that?  
13 Is that something like gasoline?

14 A. Exactly. I mean, that's just like you would see  
15 in a gasoline tank that might have some water in it. It's  
16 a separation. Or you put oil in a jar with water. It's a  
17 separation of water, and then the lighter ends, it has  
18 less, lower density, it floats on top.

19 Q. And to clarify, when we're talking about free  
20 product, that is something that is really chemically quite  
21 different from dissolved-phase, is it not?

22 A. That's correct.

23 Q. And what's the difference in the chemical  
24 composition?

25 A. Well, it's in essence hydrocarbons, pure



1 hydrocarbons with a little bit of water, you know, very,  
2 very highly contaminated. That's what it is, it's  
3 contamination, floating contamination.

4 Water with dissolved-phase hydrocarbons is water  
5 with small amounts of contaminants, and so the ability to  
6 contaminate the floating product, you know, has a much  
7 greater, much more widespread impact on anything that it  
8 hits than water with a trace of hydrocarbons.

9 Q. Okay. If you have free product moving downward  
10 through the soils, is there any type of trail or residue  
11 that's left?

12 A. Yes, there will be contamination left.

13 Q. And if you have a situation where you have free  
14 product traveling through the soil column down to  
15 groundwater, what type of trail would you expect to see in  
16 that soil column?

17 A. I would expect to see soil that is saturated with  
18 oil or free product. I mean, it looks oily, it's very  
19 smelly, has a strong hydrocarbon or gasoline-type smell.  
20 You would expect to see that.

21 Q. And did we see that in the soils underlying PNM's  
22 former dehydration pit?

23 A. No, we did not.

24 Q. Let me talk a little bit about some of the  
25 questions that Mr. Carr asked you, specifically regarding

1 -- I think it was page 7, line 16, and this in your  
2 rebuttal testimony, I apologize.

3           You were asked the question on page 7, with  
4 regard to your testimony on line 16 -- The question, I  
5 believe was phrased, What new action did PNM take to  
6 perform further remediation? And that was the question  
7 that was asked.

8           I want to ask you, when you were addressing what  
9 Mr. Hasely stated -- and we can look at his testimony on  
10 page 12, line 13, was he talking -- was it your  
11 understanding Mr. Hasely was talking about remediation or  
12 simply the March 13 directive? And that may be a very  
13 confusing question, and I don't mean it to be.

14           A.    Okay.

15           Q.    Let me rephrase it. The question that was posed  
16 to you in the context of your testimony is, what action did  
17 PNM take with regard to remediation? And if I read that,  
18 the question that was actually -- that you were responding  
19 to, or the response that you were responding to in Mr.  
20 Hasely's testimony, didn't specifically deal with  
21 remediation, but it dealt with the March 13, 1998,  
22 directive.

23           A.    Yes, that's correct.

24           Q.    Do you recognize a distinction between the two  
25 things?

1 A. Yes.

2 Q. And I think you answer there -- What is the first  
3 thing PNM did in response to that directive?

4 A. It was to appeal it.

5 Q. Now, there was quite a bit of discussion too  
6 about what has PNM done since March 13, 1998, and I don't  
7 want to belabor the point because I think the record is  
8 pretty clear. But can you tell us, for example -- and  
9 let's move up to even more recent times. Even after  
10 Burlington has completed the mass excavation on PNM's  
11 portion of the site, has PNM done any activity, performed  
12 any activity out there, with regard to investigation or  
13 remediation?

14 A. We've continued to sample wells. We actually  
15 have installed another well, and continued to prepare  
16 reports, et cetera, and data assimilation.

17 Q. Okay. How often does PNM submit reports?

18 A. Well, we actually submit an annual groundwater  
19 report. On the Hampton 4M we've submitted more frequent  
20 reports because it is an atypical site.

21 Q. Is it quarterly reports, generally?

22 A. It just depends. And a report may just be a fax  
23 of analytical results or a phone call.

24 Q. There seemed to be some question, and Mr. Carr  
25 was examining you and trying to impeach you with your

1 earlier testimony, and I just want to get clear on the  
2 record, in the absence of Burlington's mass excavation in  
3 the area of PNM's recovery system, did PNM have any  
4 intention of taking that recovery system out on any type of  
5 immediate basis?

6 A. No.

7 Q. Why is the reason that PNM was thinking about  
8 taking out MW-6 at that time, as you reflected in your  
9 testimony?

10 A. I think a week prior to the discussion in the  
11 testimony I had been contacted by Mr. Hasely of Burlington,  
12 indicating that they would be excavating in the area of our  
13 former pit and would be removing our product-recovery  
14 system, and we had asked that we be allowed to do that, let  
15 us remove it, because --

16 Q. And was that request honored?

17 A. No, we received a phone call a few days later  
18 saying that they had already taken it out. So we were not  
19 actually notified when it was removed.

20 Q. Did you have any intent to try and salvage any  
21 part of your recovery system?

22 A. I think we did, we were able to find it. I can't  
23 quite remember where it ended up, but we did -- we do have  
24 it still.

25 Q. With regard to the remediation activities that

1 Burlington carried out, were those activities focused --  
2 can you tell us where those activities were focused  
3 primarily, that is, on PNM's side of the wellpad or  
4 Burlington's side of the wellpad?

5 A. On PNM's side.

6 Q. If you were going to conduct a remediation of  
7 that wellpad site, intending to address the flow of  
8 dissolved-phase downgradient and offsite, where would you  
9 start your remediation efforts?

10 A. Well, knowing that the soils underneath our old  
11 pit were relatively clean, I would have continued to  
12 operate the product-recovery well and moved up above our  
13 activities to where Burlington's old tank battery and pit  
14 was and done a much more extensive investigation and  
15 subsequent excavation, if that's what we had, you know,  
16 determined was warranted.

17 Q. There was some question -- You had indicated in  
18 your testimony when you were cross-examined about the fact  
19 that the OCD had indicated to Burlington that they should  
20 install a monitoring well in the location of MW-7 -- I'm  
21 sorry, TPW-7, I believe -- and you were asked whether you  
22 knew any discussions between OCD and Burlington about why  
23 they have not complied with that.

24 And I think in your testimony, in your rebuttal  
25 testimony at page 7, you were asked a question, Burlington

1 has not installed a monitoring well at this location, you  
2 know, or do you know why? I think you said then, that  
3 there's a reason they haven't shared equipment.

4 But let me ask, apart from whether Burlington got  
5 permission to do this or didn't do this, in terms of trying  
6 to delineate contamination or trying to -- well, trying to  
7 delineate the contamination, where do you usually put your  
8 monitoring well, your first monitoring well?

9 A. The very first one would go in the middle of a  
10 source or in the middle of a pit or underneath a tank that  
11 might be suspected to be leaking, but where you believe the  
12 relief has occurred.

13 Q. Okay. In the case of a pit -- let's talk about  
14 PNM's pit -- where's the first place PNM put a monitoring  
15 well?

16 A. In the middle of our pit.

17 Q. And if you were following accepted principles in  
18 terms of remediation and investigation relating to releases  
19 in the pits on Burlington's side of the wellpad, where  
20 would you put your first well?

21 A. In the middle of their pit, in the southeast  
22 corner of the wellpad.

23 Q. And why is it that you put your first well right  
24 in the middle of the suspected area of release?

25 A. Because if you have contamination, that's where

1 it's going to be. I mean, that's the worst-case scenario,  
2 and so, you know, you're looking for contamination.

3 Q. And have we have gotten -- Has Burlington ever  
4 installed a permanent monitoring well in the area of its  
5 suspected release?

6 A. No.

7 Q. In the absence of the installation of that type  
8 of monitoring well, can you really make a determination  
9 about the relative amounts of contamination that might be  
10 underlying Burlington's former excavation, as compared to  
11 PNM's excavation?

12 A. No.

13 Q. With regard to the questions you were asked about  
14 closure, you've indicated PNM had asked for closure of this  
15 site, and there was some debate about whether it's been  
16 denied or no response or what have you. You've read Mr.  
17 Olson's testimony in this case? What's your understanding  
18 of the reason why you haven't gotten a response back from  
19 the OCD on your closure request?

20 A. It's my understanding that Mr. Olson was waiting  
21 for the outcome of the hearing.

22 Q. Okay, of this hearing?

23 A. Right, correct.

24 Q. With regard to questions you were asked relating  
25 to costs and how much PNM has spent at this site, you had

1 two columns on Burlington Exhibit 43 -- one is in-house  
2 expense and one are outside expenses -- and let me ask, why  
3 is it that PNM uses in-house personnel to do remediation  
4 and investigation work?

5 A. One of the big reasons is consistency, of course.  
6 We have people that are on hand and intimately familiar  
7 with PNM's operations, have a history with the company.  
8 And also they are, in general, cheaper. So that helps.

9 Q. But do you save money by using in-house people as  
10 a general rule?

11 A. Yes.

12 Q. Now, you were also asked about PNM's response to  
13 Burlington's demand that remediation -- that PNM conducted  
14 remediation. Did you find it odd that Burlington was  
15 asking PNM to conduct remediation when Burlington  
16 supposedly was admitting that it was a contributor to the  
17 free product?

18 A. When they demanded we remediate our -- Is that  
19 what you're --

20 Q. Yes.

21 A. Yes, I found that very strange.

22 Q. Was there anything in that letter to suggest that  
23 if Burlington wanted to go hand in hand with PNM to clean  
24 up on that site?

25 A. No, no.



1 Q. How did you understand Burlington's demand on  
2 PNM?

3 A. And this is an opinion. It appeared to be a  
4 posturing before the previous hearing.

5 Q. When was the previous hearing?

6 A. It was probably a week after they began their  
7 site-wide -- or remediation in the area of our old pit.

8 Q. And when did that letter come out?

9 A. I think a week or two prior, so maybe a few days.  
10 I don't recall.

11 Q. This -- I think it's a good time to go through  
12 your Exhibit 13, while we're on that topic, and I thought  
13 there was something interesting about that. Mr. Carr went  
14 on and was impeaching you, trying to impeach you, I guess,  
15 on your testimony that PNM's work at this site had been  
16 limited, at least up to the time they did their mass  
17 excavation. And he took you through a number of entries on  
18 your own summary of events where Burlington undertook  
19 activity. And I kind of want to -- well, I want to focus  
20 on that.

21 If we look at the time frame in which Burlington  
22 is doing any work -- and I'm talking about work on the site  
23 -- when is the first time that Burlington did anything in  
24 terms of active work, investigation or remediation,  
25 anything on that site?

1 A. It looks like it's April 16th.

2 Q. And how long did that continue, Burlington's  
3 activities on the site, according to this, with that --  
4 with any level of intensity?

5 A. I believe it was through June of that same year.

6 Q. June of 1997?

7 A. Right.

8 Q. And I noticed that when Mr. Carr was examining  
9 you on this issue, he stopped at June of 1997, he didn't  
10 continue on with your summary. And if we continue on with  
11 your summary through June of 1997 -- And again, let's point  
12 out, what happened in June of 1997? June 4th, 1997?

13 A. There was an on-site meeting with NMOCD, PNM and  
14 Burlington to discuss investigation.

15 Q. That was just a meeting, right?

16 A. Yes.

17 Q. Before June, when was the last actual  
18 investigation or remediation activity that Burlington  
19 undertook?

20 A. April 30th of 1997.

21 Q. Okay. So if we're looking at Burlington's  
22 activities the last activity as of 1997 on the part of  
23 Burlington was April 30th, 1997?

24 A. Yes.

25 Q. Okay, let's go through your summary, and how long

1 is it before we see Burlington back on the job out there in  
2 terms of investigation or remediation activities?

3 A. It's almost a year later, May 11th, 1998.

4 Q. Let's look at PNM Exhibit 1, and what I want to  
5 talk about, focus on, is down about the bottom third of  
6 this, there's a listing of permanent monitoring wells  
7 installed. Does this list show how much PNM did -- how  
8 many wells PNM installed versus how many wells Burlington  
9 installed?

10 A. Yes.

11 Q. When was Burlington's Monitoring Well 13  
12 installed?

13 A. Just -- I believe it was in May of this year.

14 Q. That was after their mass excavation?

15 A. Yes.

16 Q. And when was PNM's Monitoring Well 12 installed?

17 A. May of this year also.

18 Q. Up to the time that Burlington did its mass  
19 excavation, how many wells had PNM put in versus how many  
20 wells that Burlington put in?

21 A. PNM installed eight wells, and Burlington  
22 installed three.

23 Q. Are permanent monitoring wells expensive?

24 A. Yes, they can be, depending on how deep you're  
25 going and et cetera.

1 Q. You were asked a question by Mr. Carr about the  
2 greatest levels of contamination under -- between PNM's pit  
3 and Burlington's pit, and I want you to look at an exhibit  
4 that's been admitted as Burlington Exhibit 40.

5 A. I can't seem to find it.

6 Q. It should be in that -- in the green book.

7 A. Forty?

8 Q. Four-zero, start with that one.

9 A. This only goes up to 33. I have 33 here also.

10 MR. CARR: We've got another version, if I may.

11 Q. (By Mr. Alvidrez) You were asked the question  
12 about relative concentrations of contamination between  
13 Burlington's former pit and PNM's former pit. If we look  
14 at Burlington Exhibit 40, can you compare for us the  
15 relative amounts of contamination and where we have the  
16 highest BTEX concentrations in the groundwater?

17 A. Well, according to this, it's under MW-2, which  
18 is the source well in PNM's old pit.

19 Q. It's not in TPW-7?

20 A. I'm sorry, are you talking about the picture or  
21 the --

22 Q. I'm talking about BTEX concentrations in the  
23 groundwater.

24 A. Oh, the concentrations, I'm sorry. Oh, it's --  
25 The greatest, 33,220 micrograms per liter, is under TPW-7.

1 Q. Which is where?

2 A. Which is not anywhere. It was in the area of  
3 Burlington's former tank pit, or pit.

4 Q. And for the record, TPW-7 was not a permanent  
5 monitoring well; is that correct?

6 A. No, it was only left in for a few days.

7 Q. Okay. And that shows the BTEX concentrations are  
8 higher than the concentrations in PNM's -- than the BTEX  
9 concentrations in MW-2, which is PNM's source well; is that  
10 correct?

11 A. Yes.

12 Q. Now, would you -- In the use of a temporary  
13 monitoring well, over time would you expect those readings  
14 to go up or down?

15 A. I would expect at 33,000 micrograms per liter,  
16 that that would eventually turn into free-phase, unless the  
17 source is mitigated somehow.

18 Q. Okay. Now, we've got another pretty healthy  
19 reading in MW-8; isn't that correct?

20 A. Yes.

21 Q. And is that upgradient or downgradient of PNM's  
22 former pit?

23 A. That's upgradient.

24 Q. Now, do you understand this particular diagram to  
25 show the gradient flow?

1 A. No, this shows no elevations, it's just a --

2 Q. Well, I know it doesn't show elevations, but over  
3 in the right-hand side doesn't it show downgradient  
4 contamination?

5 A. Yes, yes.

6 Q. Let's go on to Burlington Exhibit 41. Have you  
7 found that exhibit?

8 A. Yes, I have.

9 Q. Okay. Now, this shows total BTEX concentrations  
10 in the soil, as opposed to the groundwater; is that  
11 correct?

12 A. Yes.

13 Q. And if we look at the soil readings, where do we  
14 find the highest concentrations as between Burlington's  
15 former pit and PNM's former pit?

16 A. Under the Burlington impoundment there's a soil  
17 reading of 2126 ppm --

18 Q. All right.

19 A. -- for BTEX.

20 Q. We've talked about benzene in the groundwater,  
21 and you were asked the question about benzene shifting.  
22 And when the term "benzene shift" is used, are you talking  
23 about increasing readings of benzene?

24 A. The benzene increases, yes.

25 Q. And if you have increases in benzene, does that

1 signify that something may be happening in terms of free  
2 product?

3 A. Well, it signifies that there is a fresh release  
4 of new product coming through, new contamination.

5 Q. Is benzene kind of a precursor --

6 A. Yes, definitely.

7 Q. -- to free product at times?

8 A. It can be. It's certainly at very high  
9 concentrations.

10 Q. Has it been -- In your experience, dealing with  
11 this particular well site, has benzene been a precursor  
12 to -- shifts in benzene upward been a precursor to the  
13 arrival of free product at wells that had been installed at  
14 this site?

15 A. Almost predominantly at this site, that has been  
16 the case.

17 Q. I want to clarify some other questions that were  
18 asked with regard to leaving soil contamination in place.  
19 There seems to be some issue about whether that's  
20 permissible or not permissible. Can you explain to us  
21 whether or not it's -- OCD allows soil contaminations in  
22 excess of the guidelines to remain in place at a particular  
23 site?

24 A. The OCD does allow soil contamination to remain  
25 in place. However, the pit bottom, when it is above

1 guidelines, we have to conduct vertical profiling to  
2 determine where -- at what point we've reached clean under  
3 the pit.

4 So you look for clean soil, and so you've left  
5 some contamination in the actual pit excavation and gone  
6 down below and determined where clean is, where the  
7 contamination essentially starts.

8 Q. And if you reach soil when you're doing your  
9 vertical profiling and can demonstrate to the OCD that it  
10 is below standard, do they allow you to close that pit?

11 A. Yes, they do.

12 Q. Even though at upper levels in the soil there are  
13 soils above guideline?

14 A. Yes.

15 Q. And let's just get back to Exhibit 56 and talk  
16 about that.

17 CHAIRMAN WROTENBERY: Is this PNM's Exhibit 56?

18 MR. ALVIDREZ: I'm sorry, yes, PNM's Exhibit 56.

19 Q. (By Mr. Alvidrez) If back in January of 1997 PNM  
20 had started a soil boring down in the center of its former  
21 pit and had sampled at 15 feet and came back with the  
22 readings that we have here from SB-2 and hadn't gone any  
23 further, would PNM have been able to close this pit and not  
24 take any further action with regard to it, under OCD  
25 guidelines?



1           A.    I believe so, based on all of our submittals  
2 involving vertical profiling to the OCD. They would have  
3 accepted this analytical result.

4           Q.    Is the reason why the OCD -- Is it your  
5 understanding the reason why the OCD allows this to happen  
6 is that if you have such low levels of contamination in the  
7 soil column beneath the pit, the presumption is, you didn't  
8 affect groundwater?

9           A.    Yes.

10           MR. ALVIDREZ: That's all the questions I have.

11           CHAIRMAN WROTENBERY: Mr. Carr, I'm sorry.

12                        RE CROSS-EXAMINATION

13 BY MR. CARR:

14           Q.    Ms. Gannon, is it your testimony that PNM  
15 actually discharged little or no free product in this pit?

16           A.    It would be very small amounts.

17           Q.    You would agree with me that what contamination  
18 there would be in that pit that was excavated back in 1996  
19 did come out of the dehydrator? What was in the pit, the  
20 contamination, that would have been the source of it?

21           A.    Yes.

22           Q.    Now, you stopped discharging back in -- when?  
23 1993?

24           A.    No, we didn't stop discharging until 1996.

25           Q.    And so it was immediately prior to the time that

1 you actually went out and excavated at this site?

2 A. I believe they shut the well in, and then a tank  
3 was set around the time that we excavated.

4 Q. You have been critical of the excavation at --  
5 that was conducted by Burlington in December of 1998  
6 through early 1999. Were you present at the time that that  
7 was conducted?

8 A. I was present either once or twice in the initial  
9 phases.

10 Q. Was Mr. Sikelianos representing your company at  
11 that time?

12 A. Yes, and we had a couple of other technicians as  
13 well.

14 Q. It's my understanding that Mr. Sikelianos was  
15 present during the first week of the excavation and not  
16 thereafter. Were you --

17 A. I --

18 Q. Were you there at other times?

19 A. I don't recall.

20 Q. In making your evaluation of Burlington's effort  
21 as it moved up into its area in the southern end of the  
22 site, what have you looked at? The Philip's report?

23 A. Right, I've looked at the data that was  
24 collected.

25 Q. And did you have other information, other than

1 the Philip's report?

2 A. In talking with our field technicians, including  
3 Mark.

4 Q. Did you have someone at the site the entire time?

5 A. No.

6 Q. Mr. Sikelianos states that he found the Philip's  
7 report very unclear as to the extent and depth and success  
8 of the remediation efforts. Do you think that's an  
9 accurate description?

10 A. I do recall specifically having firsthand  
11 knowledge of how the elevations were taken, which was with  
12 a rod and a sight-glass and someone holding the rod, so I  
13 understand what he was referring to, that there was some  
14 question on how accurate the depths were, and the PID  
15 readings as well.

16 Q. Now, you have explained that if you were out  
17 there conducting an excavation you would have done it  
18 differently than Burlington?

19 A. Uh-huh.

20 Q. That's correct?

21 A. Yes.

22 Q. It doesn't make sense to you that you would start  
23 excavating where you had the highest concentration of  
24 contamination?

25 A. Based on the information and the data we had

1 collected, it was obvious it was coming from some  
2 upgradient source and that we just happened to be on the  
3 down end of things. So I would move upgradient and look  
4 for that new source.

5 Q. Do you understand that Burlington started where  
6 they found the heaviest concentrations of contamination and  
7 then --

8 A. Where PNM had found the heaviest con- -- right.  
9 They started there, using PNM's data.

10 Q. But that's where they started the excavation,  
11 correct?

12 A. Right, in PNM's old -- in the area of our old  
13 pit, yes.

14 Q. And they, then, using PID readings and visual  
15 observations, they chased the contamination?

16 A. Yeah, it appears in a limited way.

17 Q. And they excavated the contamination where they  
18 could find it using these methods, you understand that's  
19 how they did it?

20 A. Uh-huh, uh-huh.

21 Q. And they excavated it whether it was one side or  
22 the other of the imaginary line in the sand?

23 A. Uh-huh.

24 Q. You understand they did that?

25 A. Yeah, I do.

1 Q. And this approach doesn't make sense to you?

2 A. The problem is that that southeastern portion of  
3 the pad is still a big issue. There has not been a  
4 complete investigation and subsequent remediation of that  
5 area, and especially an investigation into what could be  
6 causing these large amounts -- the large amount of free  
7 product present on the site.

8 Q. And you would have done it differently and  
9 focused on that?

10 A. Right, yes.

11 Q. But you didn't do it?

12 A. Well, it wasn't my job to --

13 Q. Burlington did it?

14 A. Well, you know --

15 Q. Isn't that correct?

16 A. They --

17 Q. Burlington was doing this work, not PNM?

18 A. Yes, Burlington was doing it.

19 Q. When you talk about Burlington's demand that PNM  
20 go out and remediate the site, in fact, you thought it was  
21 strange that they weren't talking about going hand in hand.  
22 Was that your expression?

23 A. No, I don't think I said that.

24 Q. You had, in September, gotten a directive from  
25 the OCD to jointly cooperate with one another and go out

1 there and do something to determine the extent of the  
2 contamination?

3 A. Yes.

4 Q. There was a meeting, was there not?

5 A. Yes.

6 Q. And you talked about what you could do to respond  
7 to the directive; isn't that fair to say?

8 A. Yes.

9 Q. And that included installing an additional  
10 monitor well?

11 A. Yes.

12 Q. And you were going to have to involve some  
13 outside contractors. And at that meeting, wasn't it PNM's  
14 position that they weren't going to bear the costs of  
15 drilling that well?

16 A. I think we had said we would like Burlington for  
17 a change to take on that responsibility.

18 Q. And you would not pay half of those costs?

19 A. I can't remember what the allocation was. I  
20 think that's correct.

21 Q. Were you willing to pay any of those costs,  
22 forget the allocation?

23 A. I think we were asking Burlington to put that  
24 well in, and we would certainly cooperate.

25 Q. And you were saying that they should bear the

1 other out-of-pocket costs with outside contracts?

2 A. Right, for data validity and consistency.

3 Q. And you suggested that they even pay PNM  
4 employees for their time out there on the site?

5 A. Right, because we were in essence doing the  
6 technical work on sites.

7 Q. And by the time you got a letter saying you'd  
8 better go remediate it, you'd really had a breakdown in  
9 this cooperative effort; wouldn't that be fair to say?

10 A. Yes.

11 Q. Exhibit 13 is the chronology, and when we look at  
12 that, it sets out, based on your records, the events out at  
13 this site; isn't that correct?

14 A. Correct.

15 Q. You're noting that between April of 1997 and May  
16 11th of 1998, Burlington didn't appear there very often; is  
17 that basically a fair summary?

18 A. Yes, yes.

19 Q. It was in December of 1997 that Burlington  
20 excavated its pit up in the southeast, isn't that true?  
21 The southeast corner of this site?

22 A. I don't recall, it may be.

23 Q. If they did, it's not reflected in this, is it?

24 A. No.

25 Q. But the truth of the matter is, what's shown on

1 this exhibit doesn't have any bearing whatsoever on whether  
2 PNM is responsible for cleaning up contamination at this  
3 site?

4 A. Doesn't have any bearing on whether PNM is  
5 responsible --

6 Q. Does the level, in your opinion, of Burlington  
7 activity have any bearing on whether or not PNM contributed  
8 to the contamination at this site?

9 A. No.

10 Q. You went out and you talked about leaving  
11 contamination in the ground when you finished the  
12 excavation in 1996, and then you went out and you did  
13 vertical profiling. Is it fair to say that when you do  
14 vertical profiling you drill until you hit clean soil?

15 A. Clean soil, bedrock or groundwater.

16 Q. And when you did vertical profiling at this site,  
17 you went all the way to the groundwater?

18 A. Right.

19 Q. You didn't have clean soil above that?

20 A. Not according to the PID.

21 Q. Thank you.

22 A. But the analytical results --

23 Q. Let me ask you --

24 A. -- concluded they were.

25 Q. I've got a couple questions that may be more



1 explaining something to me.

2 I think you stated that, with the example, if you  
3 had ten gallons of free product and it moved down through  
4 the soil, and the soil had a 20-percent absorption, you  
5 would see benzene levels of 5000 to 10,000. What units?  
6 Parts per million, parts per billion?

7 A. Parts per million.

8 Q. Per million?

9 A. Parts per million.

10 MR. CARR: That's all I have. Thank you.

11 CHAIRMAN WROTENBERY: Mr. Carroll?

12 MR. CARROLL: No cross.

13 CHAIRMAN WROTENBERY: Ms. Bailey?

14 COMMISSIONER BAILEY: A couple of questions.

15 EXAMINATION

16 BY COMMISSIONER BAILEY:

17 Q. Are the levels of measured soil contamination  
18 impacted by flushing of the soils by rain, snow, irrigation  
19 or produced water or any of those types of mechanisms?

20 A. Yes, yes.

21 Q. So in a pit where there is a regular discharge of  
22 water from any source, do you eventually see a lowering of  
23 the residual contamination of the soil?

24 A. Yes, you could, right.

25 Q. Is that within the realm of possibility for the

1 condition of the soils as you discovered them after  
2 excavation?

3 A. I think it may have some minimal impact. But,  
4 you know, we don't get a lot of rain up in that area,  
5 except for the last month or two. So I -- you know, given  
6 the amount of water that was discharged through the pit,  
7 you know, I don't think that that would have a great  
8 significance.

9 Q. What type of volume would be typical for  
10 discharge into the pit of water?

11 A. I would defer that to Mr. Heath, who will talk  
12 about the operation of the dehydrator.

13 Q. When were Burlington's Exhibit Number 40 and we  
14 were discussing the levels of the BTEX concentrations under  
15 the Burlington impoundment and the PNM impoundments,  
16 between the two we also have MW-13, which only has 2160  
17 micrograms per liter and MW-4, which has 3486, which are  
18 significantly lower measurements than TPW-7 and MW-8.

19 A. Yes.

20 Q. You have discussed the bell shape of  
21 contamination under any type of source, but does this show  
22 that that bell shape is not consistently homogeneous, or  
23 that it follows permeability pathways on its vertical  
24 migration?

25 A. Well, it depends on the type of lithology that

1 you're encountering. If you should hit a sandstone layer  
2 or something of that nature, you're going to see kind of a  
3 fracturing or offshoots.

4 In the case where you have sand under a pit, it  
5 follows that bell-shaped curve, you know, pretty closely.  
6 It's not completely homogeneous, but I think that's a good  
7 model to use.

8 Q. For a generalized idea?

9 A. Yes.

10 Q. But it will follow these pathways?

11 A. Yes. I might also note that MWS-4 eventually did  
12 have free product. It's not reflected here, but I believe  
13 this was an early -- results from early samples. But over  
14 the course of, I think, three quarters after this well was  
15 installed, free-phase product did show up.

16 Q. What is the diameter of that soil boring that you  
17 did at the bottom of the pit?

18 A. MW-2 is a two-inch -- it was a two-inch well.

19 Q. So that --

20 A. The boring would be a little bigger.

21 Q. -- you've got an idea of what? Two inches?

22 A. Uh-huh.

23 Q. Fifteen feet down?

24 A. Yes.

25 Q. And the areal size, the square footage --

1 A. The actual volume of the --

2 Q. -- of that pit?

3 A. Oh, of the pit itself?

4 Q. Right.

5 A. The pit itself, I believe, was 15 feet by 15 feet  
6 by three feet. That's the impoundment that's dug out to  
7 receive the fluid.

8 Q. So a large square footage of area and a two-inch  
9 boring, which may or may not have hit a pathway for  
10 migration?

11 A. Well, it's in the center of the pit, you know, in  
12 the depression, so that seems to be the most likely place  
13 where we'd encounter contamination.

14 COMMISSIONER BAILEY: That's all.

15 CHAIRMAN WROTENBERY: Commissioner Lee, do you  
16 have any questions?

17 EXAMINATION

18 BY COMMISSIONER LEE:

19 Q. Yeah, both sides you talk about adsorption. I  
20 don't think that's the right word. It's actually not -- No  
21 adsorption happened.

22 I think we should use "retention", because  
23 whatever fluid, they are not adsorbed to the rock; is that  
24 right? Or you talk about adsorption, the physical  
25 adsorption, penetrating to the pore site in your result

1 there?

2 A. No, the soil particles have voids or free spaces  
3 which --

4 Q. That's --

5 A. -- normally are occupied by air. But when you  
6 have a discharge of fluids, you know, they can be sorbed  
7 into those free spaces, so --

8 Q. It's not adsorption. Adsorption is -- they  
9 disappear. So it's not actually adsorption, is it? It's a  
10 capillary pressure to make them retain in the soils, so  
11 please don't use "adsorption" unless you have a new theory.

12 CHAIRMAN WROTENBERY: Are you saying "absorption"  
13 or "adsorption"?

14 COMMISSIONER LEE: They talk about adsorption,  
15 a-d.

16 CHAIRMAN WROTENBERY: A-d.

17 COMMISSIONER LEE: Right?

18 CHAIRMAN WROTENBERY: We might ask Ms. Gannon.

19 Q. (By Commissioner Lee) I don't think adsorption  
20 happens. I think the capillary pressure would keep  
21 whatever the liquid inside of the vadose zone. Is that  
22 true?

23 A. I guess absorption/adsorption -- I know there's a  
24 difference so -- I think you're correct in saying that  
25 would not be adsorption

1 COMMISSIONER LEE: Okay.

2 CHAIRMAN WROTENBERY: I don't have anything else  
3 either.

4 MR. ALVIDREZ: I have a couple of follow-up  
5 questions --

6 CHAIRMAN WROTENBERY: Okay.

7 MR. ALVIDREZ: -- if I may.

8 FURTHER EXAMINATION

9 BY MR. ALVIDREZ:

10 Q. Ms. Gannon, I want to clarify something on the  
11 record because terms have been thrown around, I think,  
12 interchangeably, particularly when Mr. Carr was talking  
13 about your testimony and he said something to the effect  
14 that, didn't Burlington go in where you had the  
15 concentrations, which was PNM's pit, and then do the work?  
16 And I want you to contrast "concentrations", which we've  
17 just talked about with regard to Burlington Exhibit 40 and  
18 41, with product thickness. What's the distinction between  
19 the two?

20 A. Well, it is correct, they went into the area with  
21 the greatest product thickness, which was under our old  
22 pit.

23 Q. Okay, was it the area of the greatest  
24 concentration?

25 A. But that was not the area of the greatest

1 concentration, as reflected by that exhibit.

2 Q. Okay. Let's also -- Let's look once again at  
3 Exhibit 40, Burlington Exhibit 40, and this is a cross-  
4 section, kind of a flat side depiction of the wellpad and  
5 the wells that have been installed there, correct?

6 A. Yes.

7 Q. And if we look at this, it looks like -- if we  
8 look at MW-13, well, the concentrations drop off  
9 significantly from Burlington's impoundment. And if we  
10 look at MW-4 it looks like it drops off, TPW-4.

11 But are those -- do those wells really sit there  
12 in a straight line?

13 A. No.

14 Q. Let's look at PNM Exhibit -- Let's see, the best  
15 one. Let's look at PNM Exhibit 6, might as well.

16 Do we -- Can you look at the location of MW-13?  
17 Is that sort of offset, if you will, from TPW-7? It's not  
18 in a straight line, if we're heading in a northerly  
19 direction, is it?

20 A. No.

21 Q. And likewise, is MW-4 in a straight line in a  
22 northerly direction?

23 A. No.

24 Q. And MW-8, getting a little closer to a straight  
25 line?

1 A. No.

2 Q. Not closer than MW-4?

3 A. Between 7 and 8?

4 Q. Yeah, between 7 and 8.

5 A. Well, there's always a straight line between two  
6 points, so what are you --

7 Q. Well, on this axis from TPW-7 heading north.

8 A. There -- Eight seems to be heading -- is closer,  
9 I guess, to being in a straight line with TPW-7

10 Q. If we draw a straight line between TPW-7 and MW-  
11 2, where does MW-8 fall?

12 A. Right on that line.

13 MR. ALVIDREZ: Okay. That's all the questions I  
14 have.

15 CHAIRMAN WROTENBERY: Anything else, Mr. Carr?

16 MR. CARR: (Shakes head)

17 CHAIRMAN WROTENBERY: Commissioners?

18 COMMISSIONER BAILEY: (Shakes head)

19 COMMISSIONER LEE: (Shakes head)

20 CHAIRMAN WROTENBERY: Thank you very much for  
21 your testimony.

22 MR. ALVIDREZ: If you're ready, we'll call our  
23 next witness.

24 CHAIRMAN WROTENBERY: Please do.

25 MR. ALVIDREZ: We would like to call Rodney Heath



1 to the stand.

2 RODNEY T. HEATH,

3 the witness herein, after having been first duly sworn upon  
4 his oath, was examined and testified as follows:

5 DIRECT EXAMINATION

6 BY MR. ALVIDREZ:

7 Q. Mr. Heath, would you please state your name for  
8 the record?

9 A. Rodney Thomas Heath.

10 Q. And Mr. Heath, where are you employed?

11 A. I'm President of Petro Energy, Incorporated.

12 Q. And Mr. Heath, have you submitted prepared  
13 prefiled direct testimony --

14 A. Yes, I have.

15 Q. -- in the present proceeding on behalf of PNM?

16 A. Yes, I have.

17 Q. And does that testimony consist of a cover page  
18 and 25 pages of testimony and your affidavit, which is part  
19 of PNM Exhibit A?

20 A. Yes, that's correct.

21 Q. And do you have any changes or corrections for  
22 that testimony?

23 A. No, I do not.

24 Q. Have you likewise submitted rebuttal testimony in  
25 this case?

1 A. Yes, I have.

2 Q. And that rebuttal testimony was submitted on  
3 behalf of Public Service Company of New Mexico?

4 A. Yes, it was.

5 Q. And does that consist of a cover page and 13  
6 pages of testimony, plus your affidavit, as part of PNM  
7 Exhibit C?

8 A. Yes, correct.

9 Q. And do you have any changes or corrections to  
10 your rebuttal testimony for the record?

11 A. No, I do not.

12 Q. Mr. Heath, if you were asked under oath the same  
13 questions as are set forth in your direct testimony in this  
14 case and the rebuttal testimony in this case, would your  
15 answers be the same as reflected therein?

16 A. Yes, they would.

17 Q. And Mr. Heath, have you been recognized as an  
18 expert witness on oilfield operations, certain equipment  
19 operations with regard to any proceedings before the Oil  
20 Conservation Division in the past?

21 A. Yes, I have.

22 MR. ALVIDREZ: With that, I would move the  
23 admission of the direct testimony of Rodney Heath and the  
24 rebuttal testimony of Rodney Heath as set forth in PNM  
25 Exhibits A and C.

1 CHAIRMAN WROTENBERY: Mr. Owen?

2 MR. OWEN: As you might expect, Madame Chairman,  
3 we do have an objection to the admission of Mr. Heath's  
4 testimony *in toto*. In fact, we have submitted a written  
5 motion to strike portions of Mr. Heath's testimony.

6 In this Commission proceeding, we're operating  
7 under the Rules of Evidence of New Mexico. Rule 802 of the  
8 Rules of Evidence provides that hearsay is not admissible.  
9 Hearsay is an out-of-court statement made by somebody other  
10 than Mr. Heath in this case, offered for the proof of  
11 the -- the truth of the matter asserted.

12 Now, in this proceeding we also operate under the  
13 assumption that the Rules of Evidence are relaxed when the  
14 interests of justice will be better served. And I'd like  
15 to point out that throughout PNM's testimony, direct and  
16 rebuttal testimony, there are statements or evidence which,  
17 strictly speaking, might be objectionable. And I'm sure  
18 that Mr. Alvidrez can point to numerous instances in  
19 Burlington's testimony in which specific statements might  
20 be, strictly speaking, objectionable. We haven't objected  
21 to virtually all of those minor issues which we find  
22 throughout the testimony, which we might object to in a  
23 more strict forum.

24 However, as we reviewed the testimony of Mr.  
25 Heath and prepared for cross-examination of Mr. Heath, we

1 were struck with the complete lack of competent evidentiary  
2 foundations of some of his conclusions. We were struck by  
3 his assertion as fact of statements made by unidentified  
4 fieldmen or operators.

5 Now, when you issue an order as a result of this  
6 proceeding, that order must be supported by competent  
7 evidence. Hearsay is not competent evidence. It's not  
8 admissible because it's not given under oath. It's  
9 unidentified fieldman or operators who aren't here under  
10 oath subject to cross-examination.

11 We've identified nine discrete portions of  
12 testimony which are expressly hearsay. Mr. Heath is  
13 speculating about the operation of the Hampton 4M well.  
14 When you sit down to consider this case, you need to decide  
15 this case based on the facts. Speculation and hearsay are  
16 not facts or evidence.

17 Now, I have two little girls, I've got a one-  
18 year-old and a four-year-old, and we've got a little rule  
19 in our house that they can't go into the kitchen. We've  
20 got a gas stove, we've got knives, and they can't go into  
21 the kitchen as a general rule. Now, every once in a while  
22 the one-year-old's cars roll into the kitchen and we let  
23 her go get them, and every once in a while my four-year-old  
24 needs to set the table, so she can go in there and get the  
25 silverware, or maybe she's playing in the sink with

1 bubbles, with my wife, or making cookies or something like  
2 that. We don't strictly enforce it all the time.

3 But I can guarantee you that if I wake up in the  
4 middle of the night and I find the one-year old pulling  
5 everything out of the refrigerator and the four-year-old  
6 turning on the gas on the stove, I'm going to enforce that  
7 rule.

8 Now, what we have here is statements that the  
9 fieldmen told me, the operators told me, and those are  
10 establishing the fact that was, in fact, how the Hampton 4M  
11 and the separator and dehydrator were operated.

12 Those are not facts which are before the  
13 Commission. Those are facts which are attempted to be  
14 established through hearsay, and we request that they be  
15 stricken from the record.

16 CHAIRMAN WROTENBERY: Mr. Alvidrez?

17 MR. ALVIDREZ: May it please the Commission, if I  
18 may respond, there is, I think, very often a misapplication  
19 of the hearsay rule in court and perhaps in administrative  
20 proceedings. And the key element about the hearsay rule is  
21 that an out-of-court statement generally -- not always, but  
22 generally, cannot be admitted and -- right out of the  
23 rule -- for the truth of the matter asserted. And I submit  
24 to you, we are not talking about out-of-court statements  
25 for the truth of the matter asserted.

1           What we are doing in this case is, we have an  
2 expert witness who has gone to talk to operators who have  
3 had firsthand involvement with the equipment at this site.  
4 He was provided information and he drew expert opinion  
5 based upon that information, and that is a clear exception.  
6 It doesn't even qualify as hearsay. It's not an exception  
7 to the hearsay rule; it doesn't even qualify as hearsay.

8           It is clear that under the law of New Mexico, an  
9 expert witness is allowed to rely upon statements that are  
10 made out of court by witnesses, fact witnesses, who have  
11 observed things personally. In fact, you have a situation  
12 where many times the experts don't even talk to the  
13 witnesses, they simply read the deposition of what someone  
14 has said in the case and then come to conclusions. And  
15 that's exactly what we have in this case.

16           I know that this Commission can make a  
17 distinction between having the fieldmen sitting here and  
18 testifying and Mr. Heath offering his expert opinion based  
19 upon recognized types of information that an expert relies  
20 upon. I would submit to you that the hearsay rule has no  
21 application in this case.

22           Moreover, there are exceptions to the hearsay  
23 rule, and the hearsay rule does have a catch-all exception,  
24 if you will, found in the rule itself, where this  
25 Commission or any court can decide, if they want to, we're

1 going to let in the hearsay evidence. I don't think we  
2 have to even perform that analysis, because this is not a  
3 situation where the evidence is being offered for the truth  
4 of the matter asserted. It is simply a statement that  
5 supports the opinions that Mr. Heath is providing in this  
6 case, and therefore we think you should deny the motion to  
7 strike and admit the testimony of Mr. Heath in this case.

8           Moreover, as was correctly pointed out by Mr.  
9 Owen, we're not operating here under a strict, strict  
10 evidentiary type of format or rule. The Rules of Evidence  
11 are somewhat relaxed, and we've been proceeding along the  
12 lines here with some fairly relaxed rules about what has  
13 happened and what people have seen and observed, and the  
14 foundation for the exhibits that go in and that type of  
15 thing. There's no purpose to excluding this testimony,  
16 other than Burlington regards it as harmful. You can  
17 accept it for what it's worth, you can understand that it  
18 forms the basis for an expert opinion, but not necessarily  
19 for the truth of the matter asserted.

20           And again, I would submit that this is proper  
21 testimony and should be admitted.

22           CHAIRMAN WROTENBERY: Mr. Carroll?

23           MR. OWEN: If I might respond briefly?

24           If an uninformed observer, a third-year law  
25 student, were to come in here during a regular Division

1 hearing and see Mr. Carr or myself examining a witness,  
2 they might think that the Rules of Evidence don't apply or  
3 that there aren't any rules in this proceeding. The reason  
4 for that is, we generally abide by the rules of evidence,  
5 we generally don't call for hearsay. We generally provide  
6 the testimony of the witnesses firsthand.

7 In this case, what we have instead is Mr. Heath  
8 telling us what fieldmen told him about a separator, about  
9 a dehydrator, and then in turn you are asked to find as  
10 fact those statements made by these fieldmen, these  
11 unidentified fieldmen and operators.

12 We recognize the fact that an expert may rely on  
13 facts otherwise not admissible into evidence. It's a  
14 clearly established rule of evidence. But members of the  
15 Commission, we're not talking about Mr. Heath's opinions,  
16 we're talking about the hearsay statements that are  
17 contained within Mr. Heath's testimony. We haven't moved  
18 to exclude Mr. Heath's opinions, we've moved to exclude the  
19 statements contained in that testimony, which are hearsay.

20 There are rules in this proceeding, we do abide  
21 by the rules under a relaxed standard. And members of the  
22 Commission, this is a flagrant example of a violation of  
23 the rules. We ask that you strike those portions, those  
24 discrete portions of Mr. Heath's testimony.

25 MR. ALVIDREZ: May we look at the testimony? I



1 think it's pretty clear from the record. Let's look at the  
2 testimony that they want stricken.

3 CHAIRMAN WROTENBERY: I don't think we need to, I  
4 mean --

5 MR. ALVIDREZ: Okay.

6 CHAIRMAN WROTENBERY: -- I'm ready to rule on the  
7 motion. And I am going to deny the motion. This is an  
8 administrative proceeding. I think both of you have  
9 alluded to the fact that administrative proceedings tend to  
10 be conducted somewhat more informally than court  
11 proceedings, perhaps, and hearsay is on occasion admitted  
12 in administrative proceedings.

13 I'm not sure, actually, that this is hearsay. I  
14 do think that an expert witness can testify to the facts  
15 upon which the expert witness's opinion is based. But even  
16 if it is, it is something I think that this Commission can  
17 entertain and then give the weight that it deserves.

18 In this case, I think many of Burlington's  
19 concerns relate more to the weight of the evidence, to be  
20 given to the evidence, than to the admissibility of the  
21 evidence, and I am sure Burlington will, in its cross-  
22 examination, address those concerns as well.

23 I do assure you that the Commission is aware of  
24 the legal residual -- residuum rule, and we will take that  
25 rule into account at the point when we get to looking at

1 the record as a whole and drafting up an order in this  
2 particular case.

3 But we'll go ahead and accept this testimony into  
4 the record at this point.

5 Are there any other parts of the testimony about  
6 which you had objection?

7 MR. OWEN: That's all, Madame Chairman.

8 CHAIRMAN WROTENBERY: Mr. Carroll?

9 MR. CARROLL: (Shakes head)

10 CHAIRMAN WROTENBERY: Okay. Then both the direct  
11 and the rebuttal testimony of Mr. Heath will be admitted  
12 into the record.

13 MR. ALVIDREZ: If it please the Commission, we  
14 would tender Mr. Heath for cross-examination.

15 CHAIRMAN WROTENBERY: Mr. Carr?

16 CROSS-EXAMINATION

17 BY MR. CARR:

18 Q. Mr. Heath, if I understand your testimony, you  
19 designed the equipment at the Hampton 4M well site?

20 A. Yes, that's correct.

21 Q. And that includes the combination production unit  
22 operated by Burlington, as well as the dehydrator with the  
23 inlet separator that formerly was operated by PNM?

24 A. The production unit I designed and patented. And  
25 the dehydrator, I was obviously involved in the design of

1 that because it was manufactured by our company, so I did a  
2 hundred percent of the design of the dehydrator. There  
3 could have been some things I didn't design.

4 Q. Okay. If all of this equipment is working as  
5 it's designed and intended to do, both the equipment, the  
6 combination production unit, and then the purchaser's  
7 dehydrator, it can result in certain volumes of  
8 hydrocarbons being discharged into a pit?

9 A. Small volumes.

10 Q. And you would agree that the hydrocarbons found  
11 in the pit beside the PNM dehydrator would have been those  
12 hydrocarbons. They would have come from the well, down the  
13 line and then been discharged at that site?

14 A. I agree that they would have to come from that  
15 separator, correct.

16 Q. Now, this equipment, let's look at the dehydrator  
17 that was formerly operated by PNM. It tolerates the  
18 discharge of a certain amount of liquid?

19 A. What we would call the irreducible carry-over  
20 from a mechanical separator is what it's designed to  
21 handle.

22 Q. Now, you can adjust that piece of equipment, can  
23 you not?

24 A. The level control, the throttling level control,  
25 and so it was really -- once it's set to dump at a certain

1 level, it theoretically holds that level. You could --

2 Q. Okay.

3 A. -- little adjustment there.

4 The valve that was to restrict the amount that  
5 could be dumped was adjustable, yes.

6 Q. Could you adjust the equipment to discharge no  
7 liquid at all?

8 A. Yes, you could have.

9 Q. And then, depending on how you're adjusting that  
10 equipment, it would affect how much actually was released  
11 before this shut-in signal was sent?

12 A. It would -- How the restricting valve is adjusted  
13 would determine how much the unit could dump prior to  
14 shutting the well in.

15 Q. And variations -- We seem to have a debate in the  
16 prefiled testimony over properly functioning. My question  
17 is that if everything is functioning as it was designed to  
18 do, you could have some variation in the amount of liquid  
19 that would be charged [sic], one set of equipment as  
20 opposed to another?

21 A. I'm not sure I completely understand your  
22 question.

23 Q. Properly functioning equipment set one way would  
24 discharge -- could discharge more liquid before sending a  
25 shut-in signal than properly functioning equipment on

1 another site that's got a different adjustment on it?

2 A. I'm not sure I can address that. I mean, if it's  
3 adjusted properly then the --

4 (Loud thunder, laughter)

5 Q. They heard about what's happening here.

6 A. Boy that was a signal from somebody, wasn't it?  
7 If it's adjusted properly on either well, it  
8 would be theoretically adjusted so that the only amount  
9 that that sensing on the separator would dump on a normal  
10 course would be just the irreducible amount of carryover  
11 from the production unit. Now that, in theory, was what we  
12 were trying to accomplish.

13 Q. Okay, and my question only is that it depends on  
14 the adjustment in terms of the exact amount that's  
15 released, that's the whole point of it.

16 A. Once they went to an adjusting screw on the motor  
17 valve instead of a pre-set orifice, that's true.

18 Q. You could go out and just take these valves off  
19 and dismantle it, couldn't you do that if you wanted to?

20 A. Take it off?

21 Q. Yeah.

22 A. No, you couldn't take it off.

23 Q. You can't dismantle it? I mean, you couldn't set  
24 it so just everything flowed through?

25 A. Well, you could turn the spring or reverse the

1 spring off so the valve could dump everything that came  
2 into it, yes.

3 Q. You testified about the control that the  
4 purchaser has over the hydrocarbons that come into the  
5 equipment, and the lack of that control, correct?

6 A. Yes, they don't have any control over what comes  
7 into the unit.

8 Q. You designed a sensing element to be placed on  
9 this equipment that would, in fact, create an automatic  
10 shut-in of the well if too much product came to it; is that  
11 right?

12 A. That's correct, that's correct.

13 Q. And one of the benefits of this is, it did give  
14 the purchaser some control over what was happening out  
15 there; isn't that right?

16 A. That's correct.

17 Q. You start getting too much in the way of liquids  
18 or hydrocarbons or whatever, it shut the well in?

19 A. Yes, it did give them that control.

20 Q. When we -- You say it shuts the well in. I think  
21 in your testimony you called it excessive amounts of  
22 hydrocarbon, or liquids, maybe, would be a better phrase?

23 A. More than what you normally would expect to have  
24 come over if everything is operating properly.

25 Q. Okay. And the shut-in signal is not really

1 related to the quantity that ultimately goes through. It  
2 would be triggered if there is a slug at one point in time.  
3 You could have a small stream over a long period of time  
4 and not shut the well in, but if you got that same volume  
5 in one big slug, it might trigger it; isn't that right?

6 A. No, I don't think you can exactly -- if they --  
7 if you were -- And I'm not sure exactly where you're  
8 leading to on a small stream, but for you to get a small  
9 stream, I'm not exactly sure what type of condition would  
10 exist from the production unit, for example, that would  
11 allow that. Paraffined-up mist extractor or something.

12 I'm not sure what you would come up with that  
13 would create that type of situation so you're, in effect,  
14 saying you would get a steady-state flow so that you had  
15 just enough coming in that it could dump it but not enough  
16 come in to trigger it, that it could be -- you could -- I  
17 don't know what the phenomenon would be that would create  
18 that.

19 But when they're talking about slugs, not  
20 necessarily a slug, we were -- you know, if that production  
21 unit should fail, something happen to it that starts it to  
22 carry over an excessive amount, more than what -- a very  
23 small amount, and that doesn't require a slug, then the  
24 level would begin to build in the separator, and it might  
25 take a period of time, but it would build up and shut the

1 well in.

2 Q. Okay. Now, in terms of discharges onto the  
3 ground, unless there's a malfunction of the dehydrator with  
4 the inlet separator, it should not discharge any more onto  
5 the ground than that equipment is set to allow; isn't that  
6 right?

7 A. Yeah, let's say there was some malfunction that  
8 you had there, that's correct, it shouldn't dump any more  
9 on the ground than what it was set to...

10 Let me back up. It should not dump any more on  
11 the ground than what the normal carryover rate would be, we  
12 would assume, from this production unit would happen. And  
13 that's going to be a really well designed production unit,  
14 and I think it's a well designed production unit, it's  
15 going to be a very low level of carryover under normal  
16 operations.

17 Q. Okay.

18 A. Can I go ahead and elaborate just a little on  
19 that?

20 Q. Well, I want to be sure that I understand what  
21 you just said.

22 A. Well, what I'm trying to say is that once the --  
23 One of the things that the sensing element created in the  
24 industry was a lot of trauma, and it led to the operators  
25 realizing they had to put on reliable equipment to take



1 care of it well, and that the manufacturers had to build  
2 good equipment to prevent the problems that would occur if  
3 it wasn't good equipment. And so both things were  
4 addressed, and there got to be some very, very good  
5 equipment built that an operator could put on a well that  
6 would run 24 hours a day, 365 days a year and have very,  
7 very few problems with it, maybe no problems at all to  
8 speak of.

9 And the equipment was reliable enough that -- For  
10 example, there was dressing or there were dehydrators that  
11 just had separators on them. Well, we've got a lot of  
12 units that had this particular production unit installed  
13 just in conjunction with an absorber. Nothing downstream  
14 to catch any further carryover. And these units operated  
15 fairly well, no problems, didn't get enough carryover from  
16 them to contaminate the glycol, create excessive glycol  
17 loss.

18 What I'm making is that those production units  
19 normally did not carry over any significant amount of  
20 liquid.

21 Q. And you're talking now about the combination  
22 production unit that would be operated or the  
23 responsibility of the operator of the well?

24 A. Yes, the production unit. And not just -- not --  
25 Other production units also --

1 Q. Sure.

2 A. -- did a good job, it's not just an --  
3 exclusively a good production unit.

4 Q. That production unit is the responsibility of the  
5 operator of the well, correct?

6 A. That's correct.

7 Q. And if -- what they send down the line to the  
8 purchaser, that would be their responsibility?

9 A. Yes, I'd say so.

10 Q. And then the dehydrator that the purchaser  
11 operates on that property, if they elect to put one on, is  
12 their responsibility; isn't that correct?

13 A. The -- If that one company has the operator has  
14 the responsibility of operating the dehydrator, yes.

15 Q. And then what they discharge out of that would be  
16 their responsibility?

17 A. That's a legal question.

18 Q. You testified that you examined this equipment in  
19 August of 1998; is that right?

20 A. That's correct.

21 Q. Was that the first time you examined the  
22 equipment, this particular equipment?

23 A. Yes, that's correct.

24 Q. And Mr. Rhodes was out there in May of this year.  
25 You understand these facilities were sold to Williams in

1 June of 1999? I'm sorry, June of --

2 MS. RISTAU: -- -95.

3 Q. (By Mr. Carr) -- -95?

4 A. Yeah, I understood it was in that period of time  
5 there.

6 Q. And you're unaware -- were not present or unaware  
7 of how the equipment might have been set before that time;  
8 isn't that fair to say?

9 A. The only thing I have is the testimony of a  
10 Buster McQuay, which I'll question, who said that he had  
11 observed the well shut in on occasion.

12 Q. And do you know why it would have been shut in?

13 A. I would have to say that what he was saying to us  
14 was that the sensing on the hatch at the well end. That  
15 was -- I interpreted -- In fact, that's what I asked him.

16 Q. There are other ways that a well might be shut  
17 in, correct?

18 A. Well, if the sensing element was tripped, and  
19 that was specifically asked him, and I'm saying that the  
20 sensing element had shut that well in on occasion,  
21 according to Buster McQuay.

22 Q. And that would be indicative of what? It working  
23 at some time prior to the time the equipment was sold to  
24 Williams?

25 A. This was during the period he -- from 19- --

1 September, 1994, through September of 1996, that Buster  
2 McQuay was operating the well?

3 Q. So it would be both before and after --

4 A. Yes.

5 Q. -- the sale?

6 A. Yes.

7 MR. CARR: That's all I have.

8 MR. CARROLL: No cross.

9 EXAMINATION

10 BY COMMISSIONER BAILEY:

11 Q. For most of the life of the well, weren't there  
12 two completions and two sets of facilities for production  
13 and dehy?

14 A. Yes, there was. I believe through 1996 or -- I'm  
15 not sure when they commingled, but up through, I believe  
16 1996. I could be wrong about that, 1997, 1998, somewhere  
17 along there, they commingled.

18 Q. Prior to the commingling of the dual sets of  
19 equipment, were they both exactly the same as the equipment  
20 that you observed in 1998?

21 A. I don't know. I have never been able to find out  
22 what type of a production unit that was on the Mesaverde  
23 side of that well. I've been told -- I don't know this  
24 firsthand -- that it was the same as the ones on the Dakota  
25 side. And I didn't observe the dehydrator that was on the

1 Mesaverde side either at the time I was there, but I was  
2 also told that it was an identical dehydrator.

3 So as far as I know, they were identical set-ups,  
4 you know, on each side. Now, I could be wrong because I  
5 didn't see any of the Mesaverde equipment.

6 Q. So they may have been identical to each other,  
7 and are we sure that they're identical to what's there now,  
8 that you observed in 1998?

9 A. Well, it's my understanding that what they did  
10 was just remove the Mesaverde equipment and left the Dakota  
11 equipment there. And again, this is my understanding of  
12 what I...

13 Q. If you were in charge of making the decisions on  
14 which piece of equipment to keep and which piece of  
15 equipment to take off, would you look at the reliability  
16 and keep the most reliable?

17 A. Yes, I would.

18 Q. Would a prudent operator take away any equipment  
19 that may have malfunctioned in the past that may have  
20 caused excessive shut-in of the well or problems with  
21 dumping or any other myriad problems that go wrong?

22 A. Well, can we separate between the operator and  
23 the pipeline company, so if you're referring --

24 Q. I said prudent operator as a general term of  
25 owner of the piece of equipment.

1           A.    If I were the operator and I had one  
2 sophisticated production unit that does a very, very good  
3 job and one that was not doing a very good job, and I had a  
4 choice of which one to take off of that well, I'd obviously  
5 remove the one that was not doing a good job. I presume  
6 that the pipeline company would do the same thing.

7                   However, if are identical-designed piece of  
8 equipment on both sides, then I'm not sure I could draw any  
9 conclusion as to which one was or was not working the best.

10           Q.   And you don't know the working history of the  
11 equipment that was on the well for the longest period of  
12 time?

13           A.   No, I do not. No, I cannot testify for sure that  
14 the equipment from the Dakota today is the same, but it's  
15 my understanding that it's the same equipment, I have been  
16 told that. And I have been told that the Mesaverde  
17 equipment was also the same type production that was on the  
18 Mesaverde. But I don't know that for a fact.

19                   COMMISSIONER BAILEY: That's all I have, thank  
20 you.

21                   CHAIRMAN WROTENBERY: I just had one follow-up to  
22 Commissioner Bailey's question.

23                                   EXAMINATION

24                   BY CHAIRMAN WROTENBERY:

25           Q.   Do you know from your investigation when the

1 Dakota equipment, the dehydration equipment, was installed?

2 A. I would assume that at the time the well was  
3 hooked up and produced, that it was equipped with the  
4 dehydrator that's on it today. And also the Mesaverde  
5 would have had an identical dehydrator. And that was back  
6 at the time the well was first turned in to the pipeline  
7 system.

8 Q. You didn't find any information that --

9 A. No, I didn't find anything that told me that --  
10 other than, you know, talking to the field people, as far  
11 as none of them mentioned anything had been changed, none  
12 of the people I've talked to at Burlington has indicated  
13 that, you know, any of the equipment had been changed off,  
14 other than tanks had been moved, taken off. And of course  
15 the Mesaverde equipment has been taken off.

16 But I had talked to a couple of Burlington  
17 people, and they told me that the separator on the  
18 Mesaverde was identical to the one that's on the Dakota.

19 CHAIRMAN WROTENBERY: Thank you, Mr. Heath.

20 Mr. Alvidrez?

21 REDIRECT EXAMINATION

22 BY MR. ALVIDREZ:

23 Q. Yes, Mr. Heath, could you look at PNM Exhibit 47?

24 A. Okay.

25 Q. Have you found that photograph?

1 A. Yes, I have.

2 Q. And do you understand that to be a photograph of  
3 Hampton 4M well, looking northwest at PNM's former  
4 dehydrators?

5 A. Yes, that's what I think it --

6 Q. I know that the one on the left of that picture  
7 is somewhat obscured. But I mean, looking -- based on what  
8 you can see, can you make a determination as to whether  
9 those appear to be the same brand of dehydrators?

10 A. They look identical to me, yes.

11 Q. Okay.

12 A. The separator looks like exactly the same  
13 separator.

14 Q. All right. And you were asked a question about  
15 prudent operators, I guess, and if you had one that was on  
16 site, you'd want to keep the best-performing one? Do you  
17 recall that line of questioning?

18 A. Yes, I do.

19 Q. Well, when you talked with the individuals who --  
20 the operators at this particular site responsible for the  
21 dehydrators, did they ever indicate to you that one  
22 dehydrator was better than the other?

23 A. No, in fact, as I stated previously, they both  
24 said they were -- all three of the guys said they were some  
25 of the best dehydrators they had on their route to operate.



1 Q. Okay. With regard to -- So as far as you know,  
2 there was no indication that -- Well, let me strike that.

3 With regard to which dehydrator to retain and  
4 which one not to retain, wouldn't there be other  
5 considerations that you would look at in terms of the  
6 existing piping and that type of thing, for when you switch  
7 from a dual completion to commingle?

8 A. Well, I would -- If the dehydrator was doing a  
9 good job on the Dakota side and you're going to abandon the  
10 Mesaverde, it would just seem logical that there would be  
11 no reason for removing the Dakota dehydrator, you would  
12 just simply remove the Mesaverde dehydrator because of all  
13 the additional cost.

14 Q. Okay. Would there be costs in terms of changing  
15 the piping around and that sort of thing?

16 A. Oh, yes, there's be costs associated with  
17 changing the equipment off.

18 Q. Would a prudent operator who knew of a  
19 malfunction on a unit dehydrator want to fix that unit?

20 A. Oh, yes. I mean, the -- If there were anything  
21 of a major consequence, which is rarely going to happen,  
22 you could -- most of the stuff could be repaired in the  
23 field simply by a dehydrator repairman.

24 Q. You were asked some questions about steady-state  
25 flow, and I want you to expand on that. What do you mean

1 by steady-state flow?

2 A. Well, I sort of interpreted what he was driving  
3 at was, could we get a situation where we just had just  
4 enough carryover coming into the sensing-element unit that  
5 the throttling level control got up to where the motor  
6 valve could dump the maximum it was set for, and it would  
7 just set there and continually dump that amount.

8 And I can't really sort of -- I can't figure out  
9 on a -- I can't visualize a situation exactly where that  
10 would happen.

11 Q. Well, let me ask, in your professional opinion,  
12 how likely would something like that be to occur?

13 A. Well, I can't picture it really happening, and I  
14 can't picture it as a continuing thing either, because it  
15 would have been obvious to the Burlington people that if  
16 that was happening you would have a very, very small  
17 stream.

18 But you would have a stream of condensate  
19 coming -- or product, coming out of that dump pipe on  
20 continuing basis if you had a situation like that. It  
21 wouldn't be shutting off and closing, and I think it would  
22 have been discovered and corrected, I mean if it should  
23 happen.

24 Q. What would happen if something like that -- What  
25 would happen to PNM's pit if something like that were

1 happening?

2 A. Well, if it stayed for a long, long, long period  
3 of time that way, it would collect free product in the pit.

4 Q. Would it overflow?

5 A. Well, it possibly could. You know, you're asking  
6 a real theoretical question. I don't know how long it  
7 would take for that to happen, but it could in time.

8 Q. Is that type of system -- Is that type of  
9 situation something that the producer/operator would be  
10 likely to notice?

11 A. Oh, absolutely. Yes, I would absolutely think  
12 that they would be concerned about that, because they're  
13 losing their product, their recovery.

14 And so yes, I would think they would be very  
15 concerned about that.

16 Q. Did they have any incentive to stop something  
17 like that from happening?

18 A. Well, they've got a couple of incentives. One of  
19 them is, they're running the risk of getting their well  
20 shut in, and they're also going to be losing the product  
21 that they can be selling, and it benefits no one for a  
22 condition like that to exist, and it creates a lot of harm.

23 Q. Likewise, would an operator of a dehydrator more  
24 than likely notice that something like that was happening  
25 at steady-state conditions?

1           A.    Yes, I absolutely think that the PNM people would  
2 have come up and noticed that they were getting this type  
3 of situation, and they would report it to Burlington, hey,  
4 we've got a problem here.

5           Q.    Would they have an incentive, the dehydrator  
6 operator, have an incentive to correct that situation?

7           A.    Well, yes. You know, they don't want their pit  
8 filling up with oil, they don't want it to carry over, they  
9 don't want the potential risk of getting the liquid  
10 hydrocarbons into their tank and into their absorber on the  
11 dehydrator.

12           MR. ALVIDREZ: That's all the questions I have.

13           CHAIRMAN WROTENBERY: Mr. Carr?

14           MR. CARR: Nothing further.

15           CHAIRMAN WROTENBERY: Mr. Carroll?

16           MR. CARROLL: (Shakes head)

17           CHAIRMAN WROTENBERY: Commissioners?

18           Thank you for your testimony, Mr. Heath.

19           I think we'll go ahead and take a break till ten  
20 after four.

21           (Thereupon, a recess was taken at 3:55 p.m.)

22           (The following proceedings had at 4:10 p.m.)

23           CHAIRMAN WROTENBERY: Okay, why don't we get  
24 started again? Back on the record.

25           MR. CARROLL: Mark Sikelianos.

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MARK J. SIKELIANOS,

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

DIRECT EXAMINATION

BY MR. ALVIDREZ:

Q. Mr. Sikelianos, would you please state your name for the record?

A. My name is Mark J. Sikelianos.

Q. And Mr. Sikelianos, have you prepared direct testimony to be filed on behalf of Public Service Company of New Mexico in this proceeding?

A. Yes, I have.

Q. Mr. Sikelianos, is your direct testimony set forth in PNM Exhibit A and made up of a cover page and 19 pages of testimony, plus your affidavit?

A. Yes, that's correct.

Q. And can you tell us, please, if there are any changes or corrections that you would like to make to your direct testimony in this matter?

A. Maybe on page 6, line 17, I would just like to add or enter that that would be Exhibit 21.

Q. Okay, are you talking about the letter of April, 1997?

A. That's correct.

Q. And in parentheses, PNM Exhibit 21 should go in

1 there?

2 A. That's correct.

3 Q. After 1997?

4 A. Yes.

5 Q. Any other changes or corrections to your  
6 testimony?

7 A. No, not that I'm aware of.

8 Q. And Mr. Sikelianos, have you also prepared  
9 written rebuttal testimony to be submitted on behalf of  
10 Public Service Company of New Mexico --

11 A. Yes, I have.

12 Q. -- in this proceeding? And does that rebuttal  
13 testimony consist of a cover page and 11 pages of text with  
14 your affidavit?

15 A. That is correct.

16 Q. And that is part of PNM Exhibit C for the record?

17 A. Yes.

18 Q. And do you have any changes or corrections to  
19 your rebuttal testimony, for the record?

20 A. No, I do not, not aware of any.

21 Q. Mr. Sikelianos, with regard to your rebuttal --  
22 With regard to your direct testimony and rebuttal testimony  
23 in this case that we've marked as exhibits, if you were  
24 asked today under oath the same questions that appear in  
25 those sets of testimony, would your answers be the same as

1 stated in that testimony?

2 A. Yes, they would.

3 Q. And Mr. Sikelianos, have you previously testified  
4 before the Oil Conservation Division Hearing Examiner  
5 previously?

6 A. Yes, I have.

7 Q. And in that proceeding were you recognized as an  
8 expert with regard to soil and groundwater investigation  
9 and remediation issues?

10 A. Yes, I was.

11 MR. ALVIDREZ: With that, I would move the  
12 admission of the direct and rebuttal testimony of Mr.  
13 Sikelianos found in PNM Exhibits A and C.

14 CHAIRMAN WROTENBERY: Any objection?

15 MR. CARR: No objection.

16 MR. CARROLL: No objection.

17 CHAIRMAN WROTENBERY: It's admitted.

18 MR. ALVIDREZ: We would tender Mr. Sikelianos for  
19 cross-examination.

20 CHAIRMAN WROTENBERY: Mr. Carr?

21 MR. CARR: Thank you.

22 CROSS-EXAMINATION

23 BY MR. CARR:

24 Q. Mr. Sikelianos, you would agree that the Hampton  
25 4M well site is an unusual well site in terms of this

1 particular problem we're talking about?

2 A. Yes, I would.

3 Q. And you have worked on this site since December  
4 of 1996?

5 A. That's correct.

6 Q. In the course of that work, have you been  
7 involved with the monitoring and the sampling that has gone  
8 on?

9 A. Yes, directly.

10 Q. And you've witnessed part of the excavation at  
11 the end of 1999 conducted by Burlington; is that fair to  
12 say?

13 A. That's correct.

14 Q. Would you agree with me that there has been a  
15 substantial amount of investigation and monitoring -- a  
16 substantial amount of investigation and monitoring has been  
17 done at this site?

18 A. Yes, I would. But I would also like to add that  
19 I still believe that there needs to be more investigation  
20 done.

21 Q. With all that's been done, it's fair to say that  
22 we still don't know the precise sources of the  
23 contamination, they're not identified?

24 A. No, we don't.

25 Q. We can identify that there was some contamination



1 at the base of the PNM -- in the PNM pit that was  
2 excavated?

3 A. Yes, we can.

4 Q. There's some at the pit base, I think is the  
5 term, there was some contaminated soil at that level;  
6 that's correct?

7 A. I mean, you've defined three different bases, so  
8 the base of the original pit, the base of the 15 feet or --

9 Q. -- at 12 feet --

10 A. -- 12 feet --

11 Q. -- is there contamination in all of those?

12 A. Yes.

13 Q. And we have free-phase on the groundwater; is  
14 that correct?

15 A. That's --

16 Q. We have dissolved-phase in the plume?

17 A. That's undisputed.

18 Q. And after all of this work, we don't even know  
19 for sure how many discharge points or sources there are;  
20 isn't that fair to say?

21 A. That's fair to say.

22 Q. We don't know exactly how much was discharged?

23 A. No.

24 Q. And we don't know at what locations?

25 A. No, we don't.

1 Q. When you went to work on this site, Burlington  
2 had already excavated an area around its former tanks at  
3 the southern end of the site, had they not?

4 A. I'm aware of that, yes.

5 Q. And that was before your time, though, the actual  
6 excavation was before you were working on this site?

7 A. No.

8 Q. That occurred while you were there?

9 A. That -- Yes.

10 Q. The excavation on the south end?

11 A. I think I've been involved at this site since day  
12 one, yeah.

13 Q. Were you involved at the time of the excavation  
14 of the Burlington -- or I mean, I'm sorry, the PNM pit?

15 A. No, I -- Just through correspondence with other  
16 technicians, and not actually physically going to it until  
17 December of 1996.

18 Q. The excavation at the southern end of the site,  
19 the Burlington excavation, resulted in a large pit being  
20 left open for some period of time; isn't that right?

21 A. Yes, that's true. I don't know about defining  
22 "large".

23 Q. Okay.

24 A. There was an excavation there, yes.

25 Q. And is it your testimony that that excavation

1     went to groundwater?

2             A.     Yes, it is.

3             Q.     There was water at the base and in this pit;  
4     isn't that right?

5             A.     That's true.

6             Q.     You sampled the water in this pit in the fall of  
7     1998; is that correct?

8             A.     I need to refer to my testimony or look in my  
9     notes directly. I believe I sampled it on three different  
10    occasions.

11            Q.     You got a sample at one time that had results  
12    that were actually below Water Quality Control Commission  
13    standards, did you not?

14            A.     That is true.

15            Q.     And in your testimony you expressed concern that  
16    even though it was below the standards at that time, that,  
17    if I understood it, one reading might not be enough because  
18    there was a potential for contamination to move back in  
19    from other sources; is that fair?

20            A.     Would you repeat the question? I'm sorry.

21            Q.     I understood your testimony to be that even  
22    though you had a sample that was below the Water Quality  
23    Control standards --

24            A.     Uh-huh.

25            Q.     -- that you had some concern that the water had

1 been in the pit for some time and there was a potential for  
2 additional contamination to move into that pit?

3 A. No, my concern was that it probably wasn't a  
4 representative -- that the sample wasn't representative of  
5 what was in the aquifer that had possibly been stagnant,  
6 aerated, exposed to UV sunlight. And I also stated that I  
7 had direct observation and sampling of contamination left  
8 in place within the same area.

9 Q. Is it your testimony that there is simply risk  
10 associated with relying on only one sample like that?

11 A. I also stated I sampled on three occasions.

12 Q. Yeah.

13 A. And I would also say that a more representative  
14 sample would have been taken from a monitor well, had there  
15 been one in that area.

16 Q. Would you agree with me that relying on just that  
17 one sample where you came in with the results below the  
18 Water Quality Control Commission standard might not be  
19 enough to make a final determination on what had actually  
20 happened there?

21 A. I'm not sure what you're getting at, but I think  
22 that is true. The question was that in the cross-  
23 examination in the last hearing you had asked me if I  
24 thought that was an indication that cleanup had been  
25 achieved in that area on along the groundwater table, and I

1 said no, I don't believe that's true.

2 Q. So you wouldn't rely on just that one sample?

3 A. No, I would not.

4 Q. You talked about the free product in the  
5 Burlington excavation. You used certain photographs, three  
6 of them, in fact, Exhibits 52, 53 and 54. They were just  
7 photographs that showed free product in the excavation,  
8 correct?

9 A. Yes.

10 Q. And all of those were taken before the most  
11 recent Burlington --

12 A. Can we refer to those?

13 Q. If you'd like to look at them, but the question  
14 is --

15 A. I would like to.

16 Q. The question is, were the taken before the more  
17 recent Burlington excavation?

18 A. They were taken during the course of the recent  
19 Burlington remediation.

20 Q. Let's look at 52. It's dated 11-29-98. Was that  
21 during the excavation, or was that before?

22 A. During what I would say the remediation. I don't  
23 know how you would qualify "excavation", because this  
24 proceeded over months of time.

25 Q. When did the excavation start? Do you know that?

1 A. The beginning of November, the exact date --

2 Q. These were taken during one of these -- These  
3 were taken during your week when you were out monitoring?

4 A. No, they were not.

5 Q. They were taken before that?

6 A. After that.

7 Q. After that?

8 A. Yes.

9 Q. And so on November the 29th, excavation had  
10 begun, you had been present for a week, you were absent for  
11 a time, and then you came back and took these pictures?

12 A. I did not actually take these pictures, but I did  
13 go back to the site on two different occasions.

14 Q. Do these pictures reflect the site as it is  
15 today?

16 A. No, they do not.

17 Q. You understand that the excavation of this site  
18 in 1999, at the end of 1998 and early 1999, these  
19 activities were overseen by the Oil Conservation Division?

20 A. I was -- During the initial remediation, when the  
21 field activities kicked off, there were a lot of people  
22 there that were aware Bill Olson was there. We were all  
23 aware of it, yes.

24 Q. Okay.

25 A. And the same -- I don't know, as far as Bill's

1 involvement, how many times he went out there, you know,  
2 what he was updated on it as well. This is just -- This is  
3 a picture depicting free product, which is on the eastern  
4 wall, and it's clearly isolated from where our pit would  
5 have been.

6 Q. Okay. Aside from these exhibits now, going on  
7 generally, the question relates to the work that was done  
8 by Burlington in December last year and extended into the  
9 first few months -- November-December of last year and the  
10 first few months of this year. You are aware that the OCD  
11 was involved and aware of what was going on?

12 A. I would believe that they would be, yes.

13 Q. You testified that you witnessed the installation  
14 of MW-11; is that right?

15 A. That is correct.

16 Q. It was installed by Burlington --

17 A. That is correct.

18 Q. -- is that correct?

19 A. That's correct.

20 Q. You weren't paying the costs, I think you  
21 testified, but you were involved and you did make comments  
22 about the depth to which the well should be drilled; is  
23 that right?

24 A. That is correct.

25 Q. And I believe your testimony stated that it was

1 only as a result of your insistence that the well was  
2 actually drilled down to groundwater. Is that accurate?

3 A. I can describe what happened there. We were  
4 drilling, we had achieved a depth of what I believe was 50  
5 feet. There was some concern from Johnny Ellis that he was  
6 saying, Hey, there's no water here, I don't think so. And  
7 I'm not necessarily saying that Ed Hasely said, We're going  
8 to quit right now. But there was some concern that, I  
9 don't even think we're even in groundwater. Let's pull --  
10 get this rig out of here, and we'll show that there's no  
11 groundwater.

12 And I went to the nearby Burton well and said,  
13 You know, groundwater nearby is 70 feet. I think we need  
14 to go a little deeper.

15 I went ahead and called Valda because I knew she  
16 was available, our hydrogeologist, and said, You know,  
17 everything we've seen looks like it should track right  
18 along here and we should hit it about 70 feet.

19 And she said, That's everything that I've seen.

20 And I believe Ed tried to call and contact Mr.  
21 Rosasco, and I don't think he was --

22 Q. Do you know that?

23 A. I believe I recollect that, that he tried to make  
24 a phone call to him.

25 Q. Do you know when the decision was made to drill



1 to groundwater?

2 A. I think that Ed Hasely was in charge, and he was  
3 pretty insistent as well.

4 Q. And do you know that he reached that decision  
5 after a conversation with Bill Olson?

6 A. I don't know that he made that decision after a  
7 conversation with Bill Olson. We went separate ways trying  
8 to discuss and talk about it. But I think there was some  
9 concern that until you hit groundwater you haven't proved  
10 anything. And so at least we've got to hit water. That's  
11 what we --

12 Q. And it was drilled to groundwater; isn't that  
13 right?

14 A. That's correct.

15 MR. CARR: That's all I have.

16 CHAIRMAN WROTENBERY: Mr. Carroll?

17 MR. CARROLL: No cross.

18 EXAMINATION

19 BY CHAIRMAN WROTENBERY:

20 Q. I might just ask, Mr. Sikelianos, if you could  
21 help me a little bit, make sure I understand the site  
22 layout --

23 A. Okay.

24 Q. -- because you've been out there a number of  
25 times.

1           There are references in various parts of the  
2 testimony to pit locations and tank battery locations in  
3 the Burlington portion of the site --

4           A.    Okay.

5           Q.    -- and it may be that I need to ask some of the  
6 Burlington witnesses, but I was hoping maybe since you did  
7 in your testimony talk about some pits and tank-battery  
8 areas --

9           A.    Maybe we could refer to PNM Exhibit 4?

10          Q.    Okay, I'm looking at that. There has been in the  
11 testimony references to a tank battery area. Do you know  
12 what those references are --

13          A.    On the right side, you note there are three  
14 purple dots, and one says "Amber Drip" and one says "Clear  
15 Drip". There are two tank batteries, a 300-barrel  
16 associated with the Mesaverde production and a 210-barrel  
17 associated with the Dakota production. And there was a  
18 tank battery set up there, an impoundment -- and I'm not  
19 sure -- What was your question?

20                They resided in that area prior to any of this  
21 remediation, and there was concern that initially what  
22 happened here, after we discovered groundwater  
23 contamination we met at the site, and I believe there was  
24 an issue raised that one of these tanks had a slow-leaking  
25 drip in there. And so there was a letter written to

1 address the contamination in these areas, and as a result  
2 of that later on, the tanks were actually moved, one tank  
3 was removed, one was kept, and that's what caused the  
4 action of this -- that brown spot there is groundwater  
5 exposed in that excavation, that was exposed looking for  
6 contamination under the former tank battery area.

7 Q. Okay, and that is the area that you're referring  
8 to when you talk about the tank battery?

9 A. Yes.

10 Q. I don't know if you used the term or not, but in  
11 some of the correspondence there's reference to a tank  
12 drain pit.

13 A. There was a tank drain pit. It would be the  
14 third purple -- closest to the top. It says "500 Produced  
15 Liquid Tank (Stock Tank)". Now, that was the impoundment  
16 that I observed, and there was a very small agricultural-  
17 type tank there.

18 You know, the normal procedure to get condensate  
19 or drip -- When somebody comes to recover and get the  
20 product out of these tank batteries, it's normal procedure  
21 to remove the water, because they don't want the water,  
22 they're only interested in the drip or the condensate.  
23 They will crack a valve, open it up, and allow the water to  
24 bleed out of the bottom of the tanks. As soon as the water  
25 has stopped coming out they shut it in, and they pump all

1 the product off and haul it off for resale. And that's  
2 what that tank would have been used for in the past. And  
3 prior to this cease-discharge order, you know, normal  
4 probably would have been to drain it to the ground.

5 Q. Okay, so now there's a 500-gallon produced liquid  
6 tank that --

7 A. The whole -- The setup is completely different  
8 now --

9 Q. Okay.

10 A. -- and we would have to refer to other diagrams.

11 Q. Okay. That purple dot that is there, that's  
12 labeled "500-Gallon Produced Liquid Tank", when would that  
13 have been there?

14 A. Let's see. Oh, I don't know if I could look at a  
15 chronology. I'm not sure exactly when they were moved.  
16 Let's try and look at the chronology, Maureen Gannon's  
17 chronology. I'm not sure if I can go right to it, but it  
18 was right prior to when Burlington did some investigative  
19 work out there.

20 MS. RISTAU: PNM Exhibit 13?

21 THE WITNESS: PNM Exhibit 13, yes. "Tank  
22 Discharge Pit Excavation, April 30th, 1997". So I believe  
23 prior to that date, that would have been an accurate site  
24 diagram.

25 Q. (By Chairman Wrotenbery) And then there are

1 references to separator pits?

2 A. Okay, the separator pits, go back to PNM Exhibit  
3 4 and you see a black arrow, and it says "500-Gallon  
4 Produced Liquid Tank (Stock Tank)", and there were two  
5 production separators as have been described. It would  
6 have been Burlington's equipment. There was a tank in that  
7 area. The tank was somewhat smaller than that prior to all  
8 of this, and when they blow down, they blow down they blow  
9 down with some force, air pressure, and so some of the  
10 fluids had sprayed on the outside of the surface of the  
11 soil, and so that was the other area that was addressed in  
12 the letter.

13 There's a letter addressed in my testimony, and I  
14 think I corrected Exhibit -- PNM Exhibit 21, was it?

15 Q. Yes.

16 A. And apparently the groundwater impacts on the  
17 southeast corner of this location as related to  
18 Burlington's activities at the tank drain pit, which would  
19 be the purple dot that I described, and the production pit,  
20 which would be this one here, which I just described,  
21 associated with the separators.

22 Q. And that production pit has also been called the  
23 separator pit?

24 A. Yes, yes. Yes.

25 Q. And that tank that's shown as a 500-gallon

1 produced liquid tank, on PNM 4, or PNM 5, it's shown as a  
2 2000-gallon produced liquid tank?

3 A. Right, PNM 5. The original one was an estimate  
4 only. It was a small agricultural-type stock feed tank,  
5 galvanized metal. And now the standard protocol for the  
6 oilfield industry is approximately a 45-barrel tank, so  
7 that's probably pretty accurate.

8 Q. 2000 gallons?

9 A. Yeah.

10 CHAIRMAN WROTENBERY: Okay. I think that's all I  
11 have.

12 Mr. Alvidrez?

13 MR. ALVIDREZ: If it please the Commission, I do  
14 have some follow-up questions.

15 REDIRECT EXAMINATION

16 BY MR. ALVIDREZ:

17 Q. Mr. Sikelianos, could you look at PNM Exhibit 46?

18 A. Okay.

19 Q. In terms of depicting what happened out there  
20 before this was a dual completion setup, is that an  
21 accurate representation of where the tank battery was  
22 located, just so we can get an idea of where the tank  
23 battery was?

24 A. This is an accurate picture of what it was prior  
25 to commingling and prior to the investigation as it was set

1 up as a dual-completion well, yes.

2 Q. And the tanks are over there to the right --

3 A. Yes.

4 Q. -- of the photograph, looking at a landscape  
5 setup? And the two separators are over to the left, those  
6 green pieces of equipment?

7 A. That is correct.

8 Q. And in the background is where PNM's two  
9 dehydrators are -- or were, I should say?

10 A. That is correct.

11 Q. Okay. With regard to the amount of -- numbers of  
12 pits that were out there, I think you alluded to it already  
13 a little bit, but you referred to PNM Exhibit 21.

14 A. Okay.

15 Q. Do you have an understanding as to whether there  
16 were actually two unlined pits operated by Burlington, or  
17 two pits operated by Burlington?

18 A. What I visually saw, the pit -- Okay, referring  
19 back to PNM 46, where the two combination separators are,  
20 the closest two in the picture, there's a tank there. That  
21 would be the tank that -- that would have been the --

22 Q. That's in the foreground?

23 A. Yes. That would refer to the production pit.

24 Q. Okay.

25 A. And the other pit, the tank drain pit, is not --

1 You can't visually see it in this picture. It would be  
2 just on the north side of the second tank battery.

3 Q. So it's behind the tanks?

4 A. Behind your tanks, exactly, on the northern side.

5 Q. All right. Has there been vertical drilling to  
6 groundwater in the area of what you called the production  
7 pit?

8 A. No.

9 Q. Let me also have you refer, when we're talking  
10 about tankages and things out at this site, to PNM Exhibit  
11 49. Can you tell us what this document is?

12 A. This looks like a schematic provided by Meridian  
13 Oil of what the Hampton 4M well site -- the configuration  
14 of the equipment on this site and the different pits  
15 associated with it.

16 It appears that -- Typically north is up, and in  
17 this case the north is down. If you're looking at it from  
18 the bottom, the pit with the -- There are two pieces of  
19 equipment noted as dehydrators.

20 Q. Okay, would those be PNM dehydrators?

21 A. Those would have been, yes. And the two gas  
22 meter houses.

23 Q. Well, let's -- Okay, that's GM?

24 A. GM, that's correct.

25 Q. And what is the S, that line that says S?



1           A.    Those would have been the two separators,  
2           production units.

3           Q.    Okay.  And the circles with the S are the  
4           separators?

5           A.    The separators, that's correct.  And that would  
6           have been the pit associated with the two separators.

7           Q.    Okay.

8           A.    Then the two tank batteries would have been one  
9           from the Mesaverde, one from the Dakota.  The S/T, Stock  
10          Tank 1, Stock Tank 2 --

11          Q.    Except they're both S/T 1 on this one.

12          A.    Oh, I'm sorry, yeah, they're both S/T 1, I'm  
13          sorry.

14          Q.    And then there's another depiction of a pit in  
15          the very southernmost portion?

16          A.    That's true.

17          Q.    Are you aware of whether there's been any  
18          installation of permanent wells to groundwater in the area  
19          of that pit?

20          A.    No, I have not.

21          Q.    In fact, when you came on the site, was that pit  
22          even open?

23          A.    I've never observed this pit open.

24          Q.    In the middle of the page or this diagram,  
25          there's a circle with little beams radiating from it.  What

1 is that?

2 A. That would be the wellhead.

3 Q. Okay. And where is PNM's former unlined pit?

4 A. It would be on the bottom, underneath the two  
5 dehydrators on the bottom of the box that looks like it  
6 says "Pit". It says "Pit", and it shows it.

7 Q. Okay, it's a little square that's to the --

8 A. Yes.

9 Q. -- bottom of the dehy? Okay.

10 You were asked by Mr. Carr, or you responded to a  
11 question by Mr. Carr that you thought more investigation  
12 was needed at this site?

13 A. Yes.

14 Q. And as an expert in groundwater investigation or  
15 remediation, where would you focus your efforts, if you  
16 wanted to perform an adequate investigation or remediation  
17 at this site?

18 A. I would like a few more wells on the southeastern  
19 edge of the wellpad to try and determine if there are, in  
20 fact, sources that are ongoing to that area, or at least to  
21 try and monitor some trends. And all of this, we've got so  
22 many different groundwater sites, it's very difficult to  
23 take one snapshot and determine what's going on. I mean,  
24 that's why we're trying to put wells in. A lot of times we  
25 say, Is that all we're doing, is monitoring? Well, we're

1 monitoring trends and trying to evaluate what's going on,  
2 and without the tools to do that, it's very hard to come to  
3 conclusions on what's happening.

4 Q. If you were going to install some wells on the  
5 southern portion of the site, the wellpad, where would you  
6 put those wells if you had your druthers?

7 A. Maybe I could refer to PNM Exhibit 5?

8 Q. Okay.

9 A. Is that the right one? No, that's not the right  
10 one. I'm looking for the one that shows the temporary  
11 monitor wells. That would be --

12 Q. It may be 6.

13 A. Okay, PNM Exhibit 6. I would also like to refer  
14 to this summary of analytical table that was updated, the  
15 one that was provided to everyone this morning. I don't  
16 know if everyone has a copy.

17 Q. That's Exhibit 48-A?

18 A. Exhibit 48-A, okay.

19 Q. Okay.

20 A. Look at the temporary wells, TPW-5 and TPW-7. I  
21 think we already -- Maureen Gannon addressed in her  
22 testimony, or as you crossed her, that TPW-7 has exhibited  
23 the highest dissolved-phase concentration of any well that  
24 we have seen to date.

25 And also TPW-5, I would have to look on page 2 of

1 this table, Exhibit 48; is that correct? 48-A. TPW-5,  
2 concentrations of benzene were 4000, total BTEX -- Oh,  
3 that's soil, I'm sorry. Water were 5800 benzene, 29,260  
4 total BTEX.

5 So I think there's a very good chance, a very  
6 good possibility, that there is an ongoing source or  
7 contamination still in place here that has never been  
8 addressed.

9 As far as the combination separator units,  
10 nothing has ever been done. Superficially, we kind of  
11 scraped around the soil and looked at that, but it's very  
12 hard to determine what's going on at the groundwater level  
13 than what's happening at the surface, so -- I mean, there  
14 is a possibility that contamination is there.

15 MW-3 has been historically clean, or it was prior  
16 to its removal, but that still doesn't mean that there  
17 couldn't be contamination coming from that area as well.

18 Q. Now, as an expert in groundwater investigation  
19 and remediation, before you would undertake a remediation  
20 effort at a site, would you want to know the source of the  
21 contamination?

22 A. Yes, I would. I would want to know what I was up  
23 against before I went out there.

24 Q. And why would you want to know the source of the  
25 contamination?

1           A.     Because I think that's the first place to start,  
2     for remediating. If that was the source, that's where I  
3     would want to start.

4           Q.     What happens if you commence remediation without  
5     first identifying the source?

6           A.     You could be waiting a long time to get the  
7     results that you wanted to achieve. I mean, you're not  
8     going to achieve clean groundwater or closure -- That's  
9     basically it.

10          Q.     Okay, is it a fair characterization, if you're  
11     remediating without first identifying the source, that  
12     you're up against an unknown enemy?

13          A.     That would be true, especially given the  
14     characteristics that we have at this site. I mean, we do  
15     know that there's a fairly steep slope. The slope on the  
16     wellpad is not as great, but I don't think that the  
17     gradient is disputed. It has been disputed somewhat to the  
18     northwest. I still believe it is more north than  
19     northwest. And we are on the low side of that.

20                 There's contamination up above, and so although  
21     it appears that we've been dragging our heels all along, I  
22     do not believe that everything has been characterized up  
23     above, that -- You know, if you could prove to me and at  
24     least put a line of wells to show me that nothing is coming  
25     down the pipe towards me, then maybe I would be in

1 agreement to go ahead and do something more. But until  
2 that point, it doesn't make a lot of sense.

3 Q. If you were a regulator overseeing this site, you  
4 were asked about the OCD overseeing what Burlington is  
5 doing, what would you order or what would recommend that be  
6 done with regard to further investigation at this site?

7 A. Permanent monitor wells with some consistent data  
8 over time. I think Ms. Gannon -- that her testimony was  
9 that a source well was needed in the area where TPW-7 is  
10 located. It wouldn't be a bad idea to put one where TPW-5  
11 is, or TPW-6, or another one near the separation unit.

12 These -- Again, I don't know if we stressed it.  
13 These were temporary wells, and I don't understand the  
14 reason or the rationale to go out and bring a drilling rig,  
15 drill to groundwater, put a well in and remove them three  
16 or four days later. To me that makes absolutely no sense.  
17 You -- the biggest costs and all they needed to be was  
18 completed.

19 Q. Well, if the temporary well showed up clean,  
20 would it make more sense to perhaps pull them out at that  
21 point?

22 A. You need consistent long-term data. Even if it  
23 was clean at that point, that doesn't mean it's going to be  
24 clean a quarter from now or two quarters from now.

25 Q. You've got to leave it in for a while?

1 A. That's right.

2 Q. But what about a situation we have here, where  
3 you put in those wells and you had, in many cases, very  
4 high readings?

5 A. My best guess or best judgment would be that's  
6 probably where you want to put some wells and try and  
7 determine what's going on.

8 Q. You were asked by Mr. Carr about the groundwater  
9 in Burlington's first pit that they did out in the general  
10 vicinity of the tank battery. Do you recall that?

11 A. Yes.

12 Q. And he asked you about the efficacy of just  
13 taking one sample or using that one sample that you had  
14 taken at some point in time that came back below  
15 groundwater standards?

16 A. Yes.

17 Q. Were there particular reasons why you thought  
18 that that one groundwater sample was not sound?

19 A. The water levels were higher than normal. A lot  
20 of this stuff has to do with seasonal water levels, and  
21 we've been doing a lot of remediation in the San Juan  
22 Basin, and the last two years we've had pretty decent rain,  
23 more precipitation -- You know, we could look at  
24 precipitation records, but when the water table is lower in  
25 the past, the contamination will seek a level and stay at

1 that level. As the water levels rise, the contaminant can  
2 be masked.

3 So it's hard to say exactly what's going -- It's  
4 hard to say if it's in a representative sample. I mean, I  
5 did sample it on three different occasions. And you know,  
6 it's just a tool, it's another data set. And there could  
7 be another -- could be one quarter of sampling from one  
8 well, and when we look at all of these -- We take all of  
9 these things into consideration. I don't go and sample a  
10 well one time and say, you know, I'm going to make a basis.

11 Q. Let's talk about that. When you were talking  
12 about that sample, you're talking about a groundwater  
13 sample at the surface, correct?

14 A. Yes.

15 Q. Is that different than a soil sample underneath  
16 the ground?

17 A. I'm not sure what you mean.

18 Q. What I mean is, would you expect to have a higher  
19 degree of reliability with a soil sample underneath --

20 A. Well, the soil sample has been exposed to air,  
21 it's been exposed to UV sunlight, it's exposed to a lot of  
22 things that could break them down. I mean --

23 Q. Well, I'm talking about an analytical sample,  
24 such as Soil Boring 2.

25 A. Soil Boring 2?



1 Q. Right.

2 A. I believe that that's a much more representative  
3 sample. For one thing, we can tell exactly what depth  
4 interval it came from. Would you like me to elaborate on  
5 that? I think we've been there before.

6 Q. Well, what I'd like to know is, for purposes of  
7 OCD closure, is one sample showing that you're within  
8 regulatory guidelines sufficient for pit closure?

9 A. Now are we talking water or are we talking soil?

10 Q. I'm talking soil.

11 A. For soil. I think that it is a good  
12 representation if we're going in the middle of the pit for  
13 a vertical profile. You're not completely off the hook,  
14 there's some risk associated with that. And we take that  
15 into account with everything. Is it a risk to groundwater?  
16 That's the main thing when we talk about that. And if it  
17 was below, I think there was -- the whole reason -- the way  
18 that this whole program was set up, it was to protect  
19 groundwater. And if your soil contamination is within this  
20 limit, there's probably a good chance that it's not going  
21 to contaminate groundwater.

22 Q. Is that kind of like --

23 A. That's the rationale --

24 Q. -- you're below -- if you're below a certain  
25 guideline, the presumption is that your pit didn't impact

1 groundwater?

2 A. The threat to groundwater is significantly  
3 decreased.

4 Q. And let me ask this: Is that threat just free-  
5 phase? In terms of that presumption, does it just apply to  
6 free product, or does it also apply to dissolved-phase?

7 A. It applies to both. I mean, you're concerned  
8 with both. I mean, we talking about two different things  
9 when we talk about dissolved- and free-phase.

10 Q. Right. But in terms of the way the OCD deals  
11 with vertical drilling or drilling to clean soil, the  
12 contamination that they're worried about includes both free  
13 product and dissolved-phase?

14 A. I'm trying to think of an analogy. I guess if I  
15 could show that I had free product and it was immobile and  
16 it wasn't going anywhere, and depth to groundwater was 500  
17 feet, and it wasn't a risk to health or to impacting  
18 groundwater, there is a possibility.

19 Q. That was a confusingly worded question. What I'm  
20 really talking about is what we've described as kind of a  
21 regulatory presumption where if your soils are below  
22 certain guidelines, the presumption is that your pit has  
23 not impacted groundwater in the area underneath your pit.

24 A. Yes, and it could do no damage to future  
25 groundwater, assuming that the cease discharge has occurred

1 and all of that.

2 Q. Okay, and I guess what I'm saying is, the  
3 presumption against, you know, any contamination from that  
4 pit impacting groundwater, does that presumption apply to  
5 both free-phase contamination as well as dissolved-phase  
6 contamination in the groundwater?

7 A. I'm not sure that I am understanding you or  
8 following you, because when we talk about that SB-2, there  
9 was not any free-phase at the interval that we were talking  
10 about at 15 feet, so when you say free-phase or dissolved-  
11 phase, I'm not sure --

12 Q. Well, I'm talking about free-phase or dissolved-  
13 phase in the water, below that point.

14 A. I would -- Based on the results that I see, I do  
15 not believe that free product could have come down,  
16 migrated from our pit and made it to groundwater.

17 Q. Again, talking about OCD oversight, have you had  
18 conversations with representatives of the OCD about the  
19 extent of their oversight over Burlington's mass-excavation  
20 activities?

21 A. I don't think we sat down and discussed it and  
22 said, Hey, what do you think? I mean, we just kind of --  
23 We both witnessed it.

24 Q. Well, PNM has expressed some concerns about the  
25 methodology utilized by Burlington in its mass excavation

1 at this site. What has been the OCD's response, to your  
2 knowledge?

3 A. To my knowledge, they'd like to see some action.  
4 Other than that, I think they believe that some action is  
5 good action and -- I can't speak for the State, I don't  
6 know.

7 MR. ALVIDREZ: Okay, fair enough. I have no  
8 other questions.

9 CHAIRMAN WROTENBERY: Mr. Carr?

10 MR. CARR: No other questions.

11 MR. CARROLL: No further questions.

12 CHAIRMAN WROTENBERY: Thank you, Mr. Sikelianos.

13 THE WITNESS: All done?

14 CHAIRMAN WROTENBERY: Appreciate your testimony,  
15 yes.

16 Next witness?

17 MR. ALVIDREZ: Yes, we would call Ms. Valda  
18 Terauds to the stand.

19 May it please the Commission.

20 VALDA I. TERAUDS,

21 the witness herein, after having been first duly sworn upon  
22 her oath, was examined and testified as follows:

23 DIRECT EXAMINATION

24 BY MR. ALVIDREZ:

25 Q. Ms. Terauds, would you state your name for the

1 record, please?

2 A. Valda I. Terauds.

3 Q. Ms. Terauds, where are you employed?

4 A. Mission Research Corporation in Albuquerque, New  
5 Mexico.

6 Q. And have you submitted prefiled direct testimony  
7 on behalf of Public Service Company of New Mexico in the  
8 present proceeding?

9 A. Yes, I have.

10 Q. And was that testimony prepared by you?

11 A. Yes, it was.

12 Q. And is that testimony what we have included in  
13 PNM Exhibit A, consisting of a cover page and 47 pages of  
14 testimony plus your affidavit?

15 A. Yes, it is.

16 Q. And do you have any changes or corrections to  
17 your testimony?

18 A. No, I do not.

19 Q. Let me ask also, have you submitted prefiled  
20 rebuttal testimony on behalf of PNM in this case?

21 A. Yes, I have.

22 Q. And does that prefiled rebuttal testimony consist  
23 of 37 pages of text, along with a cover page and an  
24 affidavit, as part of PNM Exhibit C to this proceeding?

25 A. Yes.

1 Q. And do you have any changes or corrections to  
2 your rebuttal testimony?

3 A. No, I do not.

4 Q. Ms. Terauds, if you were asked under oath the  
5 same questions which appear in your direct testimony and  
6 rebuttal testimony in this matter, would your answers be  
7 the same as stated --

8 A. Yes, they would.

9 Q. -- in those pieces of testimony?

10 And have you previously testified before the Oil  
11 Conservation Division Hearing Examiner previously?

12 A. Yes.

13 Q. And were you recognized and accepted as an expert  
14 on groundwater investigation and remediation in that  
15 proceeding?

16 A. Yes, I was.

17 MR. ALVIDREZ: We would move the admission of  
18 PNM's Exhibit A and C, the portions relating to Ms.  
19 Terauds' testimony.

20 CHAIRMAN WROTENBERY: Any objection?

21 MR. CARR: No objection.

22 MR. CARROLL: No objection.

23 CHAIRMAN WROTENBERY: It's admitted.

24 MR. ALVIDREZ: We would tender the witness for  
25 cross-examination.

## CROSS-EXAMINATION

BY MR. CARR:

Q. Ms. Terauds at page 5, line 11, of your testimony, you testify that, "...there is no evidence of any free phase hydrocarbon residual between the base of PNM's former...pit and the water table." Correct?

A. That is correct.

Q. In that interval, between the base of PNM's former pit -- and I sound like a broken record -- when we talk about the base of the pit, are we talking about the base of the excavation or the pit base, that layer at 14 feet?

A. I was referring to the 14-foot layer.

Q. Okay. If we go from that -- If we look at the interval from that level down to the water, it is true, is it not, that there in the soil borings that have been done that you have PID readings, older, and visual observations that suggest there's some contamination in that interval?

A. I'm aware that there PID readings that are over OCD guidelines, but visual observations from the hearsay of others that have been out at the site have suggested that the soils actually were not discolored, did not show evidence of hydrocarbon stains until the water table.

Q. Does this testimony that we've just looked at -- does it mean that PNM, in your opinion, did not contribute

1 to dissolved-phase hydrocarbons in the area?

2 A. No, I would say that PNM did contribute some  
3 increment of dissolved-phase contamination.

4 Q. You testified on page 6, line 1 -- and you  
5 probably don't have to look at this -- just that,  
6 "...boring logs...substantiate that there is no  
7 hydrocarbon-saturated soil beneath the base of the former  
8 PNM pit extending to groundwater."

9 My question is, what do you mean by "saturated"?

10 A. The highly contaminated soils that OCD refers to  
11 in its guidelines were, if you were to take a soil sample,  
12 you would have dripping soils, free product oozing and/or  
13 high levels of contamination as measured, for example, by  
14 TPD readings in the tens of thousands, and we don't have  
15 that type of data.

16 Q. Does it mean that the sample is wet? Is that  
17 what it would be, or could it be something that didn't have  
18 -- just wasn't filled with a liquid? Does "saturated" mean  
19 it is filled with liquid, either water or hydrocarbon or  
20 both?

21 MR. ALVIDREZ: Let me object to the question as  
22 being unclear, because we're not talking about what the  
23 substance of saturation is. That is, what's saturating the  
24 soil.

25 Q. (By Mr. Carr) I'm just trying to find out what



1 that term means. I don't understand. And there were some  
2 questions by Dr. Lee, and I just am trying to find out,  
3 when you say "saturated", does that mean it is filled with  
4 a liquid?

5 A. "Saturation" can be used in a number of ways, and  
6 that does lead to confusion. You can have residual  
7 saturation, which means that all your pores are not  
8 necessarily filled with the liquid or liquids of interest,  
9 and you've got some air-filled porosity there. And then  
10 you've got varying degrees of that. So you can go from  
11 being completely air-filled, very little moisture and  
12 water, all the way to completely water- or liquid-filled.

13 Q. And would that all be within --

14 A. That would all be --

15 Q. -- be "saturated"?

16 A. -- encompassed within the term of "saturation" in  
17 general.

18 Q. You looked at certain boring logs to substantiate  
19 that there were none of these saturated soils beneath the  
20 pit and down to the groundwater?

21 A. That's correct.

22 Q. And you identified certain of those logs. MW-2  
23 was the first one of those. If you would turn to that  
24 behind your Exhibit Tab 15, please, it's about the fourth  
25 page back.

1           If I understand this -- and correct me if I'm  
2 wrong -- what this shows is, you bored and you did a sample  
3 of the soil on the way down; is that correct?

4           A.    That's correct.

5           Q.    And then if we look at this and we go -- There's  
6 one at the surface that says it's light brown, and it  
7 describes it at that level. And then we can go down to 10  
8 feet, and at these various levels it gives you a read on  
9 what the soil looks like at that depth; isn't that correct?

10          A.    That's correct.

11          Q.    If we go to -- on this one, to ten feet, it's the  
12 same as the above but it has a strong hydrocarbon odor;  
13 isn't that what it says?

14          A.    That is what it says.

15          Q.    And that at 12 feet there is a dark brown streak  
16 that appears?

17          A.    That's --

18          Q.    Doesn't that suggest to you that at that level  
19 there is some contamination left?

20          A.    That's correct.

21          Q.    Okay. We drop down to 16, this is below the pit  
22 base. And it says, another streak, dark brown, strong  
23 hydrocarbon odor. Again, some evidence of some  
24 contamination?

25          A.    That there's odors present, yes.

1 Q. Isn't odor, though, one of the things that would  
2 suggest there's contamination?

3 A. Odor does not necessarily tell you the location  
4 of contamination, it --

5 Q. It just tells you something's there?

6 A. -- merely confirms that there is a presence.

7 Q. Again, we go down to 20, we've got the odor and  
8 visual. Do you have any idea what "visual" means?

9 A. No, I do not, in the --

10 Q. I thought you might help me, but okay. If we go  
11 down below that, again we have a hydrocarbon odor.

12 When we look at this one, are there any -- You  
13 drilled all the way. Is this what you'd be doing, trying  
14 to determine the vertical extent of the contamination in  
15 this area?

16 A. This boring was installed as a source well, so  
17 they were looking at contamination emanating from the  
18 ground surface down to groundwater.

19 Q. And if you had not found these signs of  
20 contamination, would you have taken it all the way down to  
21 groundwater?

22 A. This is meant to be a source monitoring well,  
23 yes, the intent was to go to water and install a well.

24 Q. If we go to the next of the borings, the MW-6, is  
25 this one in the middle of the pit? Is that the location?

1 And I'm sorry, I'm backing up. And MW-2 was in the middle  
2 of the pit, right?

3 A. Yes, it was.

4 Q. Okay. MW-6 is east of the pit?

5 A. No, MW-6 is located fairly close to MW-2, still  
6 within --

7 Q. Is it --

8 A. -- a few feet of the pit.

9 Q. Is it east of it?

10 A. You mean physically located east of it?

11 Q. Yeah.

12 A. I believe so. I'd have to double-check and see.

13 Q. And again, what we've got here, it's a different  
14 format, but we've got samples or reports of what was  
15 observed at various depths, correct?

16 A. That's correct.

17 Q. And in the -- It indicates that, in fact, there  
18 have been PID readings by PNM in this area; isn't that  
19 true? Isn't that what this shows?

20 A. That's the notation on the log, yes.

21 Q. If we go into the column, it's "Air Monitoring  
22 Units, PPM". It's the second column over from the right,  
23 and we go down, there are numbers like 235 over -- well, I  
24 think it's 237 or 227. Are those PID readings?

25 A. I don't know, I wasn't there taking the

1 measurements, so it's not clear to me that they are, in  
2 fact, PID readings.

3 Q. If those are PID readings, those would, in fact,  
4 be over the limits set for pit closure by the --

5 A. I wouldn't even confirm that those are  
6 necessarily PID readings at this point.

7 Q. Okay.

8 A. There's no label.

9 Q. You don't know?

10 A. I don't know.

11 Q. If we go to MW-12, what did this show you, if you  
12 were looking at this soil boring and you said that it would  
13 substantiate there was no hydrocarbon-contaminated -- or  
14 -saturated, I'm sorry, soils beneath the base of the former  
15 pit? Wouldn't you want to know if those were PID readings?

16 A. We tried to confirm whether or not they were, and  
17 we couldn't find any indications that their drillers had a  
18 PID out, and the fact that you had notations on the upper  
19 samples that PID readings were taken by PNM but not  
20 recorded --

21 Q. Did you have access to what they might be?

22 A. The recordings by PNM?

23 Q. Yeah.

24 A. I looked at the log books to try and ascertain  
25 whether or not there were PID readings. But again, looking

1 at simply PID readings, odor is a nonspecific measure, and  
2 it does not necessarily mean that you have contamination  
3 above guidelines at the location which you are measuring.

4 Q. It's just a sign --

5 A. It's just an indicator.

6 Q. -- that there's odor, and there's something  
7 somewhere?

8 A. Right.

9 Q. Let's go to MW-12, it's the next one. I'm going  
10 a little bit out of order on there. I think the order you  
11 listed them, it's the order they're in the book.

12 What is -- Well, let's skip that one and come  
13 back to it, because I think there was a reason you took  
14 them in the order you did.

15 Let's go to SB-2, Soil Boring Number 2. And it's  
16 toward the back of this material.

17 We had the first page, which is an Envirotech  
18 field boring log. Do you see that?

19 A. Yes.

20 Q. This is just the notations that are taken in the  
21 field, and that's all this is; isn't that right?

22 A. That's correct.

23 Q. And again, we have -- to the extent it's  
24 readable, we have a number of notations of odor. Is there  
25 any correlation between odor and the PID reading.

1 A. Odor is somebody's indication that they smell  
2 something.

3 Q. That's just a human --

4 A. Yes, it's the human indicator.

5 Q. If we go to the next page, we have again some  
6 field notes, OVM. Is that for organic vapors?

7 A. Organic vapor meter, I believe.

8 Q. Would that be a PID reading?

9 A. That could be a PID, yes.

10 Q. And then, I don't know which I should call it, a  
11 PID or Pid. Are they both --

12 A. I'm used to hearing PID.

13 Q. We're down to 15 feet, we've got a notation under  
14 that of 2000.

15 A. That's correct.

16 Q. Is that a 2000 PID reading? Is that what you  
17 would understand that to be?

18 A. I would assume that was 2000 parts per million by  
19 an OVM, and I'm assuming a PID was used.

20 Q. Okay. It says "Lab" by it. Does that indicate  
21 that's where a sample was taken?

22 A. That would be my --

23 Q. If we look at these --

24 A. -- conclusion.

25 Q. -- these numbers in that column are all above the

1 OCD guideline; isn't that correct?

2 A. The PID readings are all above 100 ppm, yes.

3 Q. If we go to the next page, this is the report of  
4 the sample that was shown on the preceding page; is that  
5 correct?

6 A. The result of the sample taken at 15 feet where  
7 the PID reading was over 2000.

8 Q. And what we have here is a benzene reading of  
9 approximately 2 ppm?

10 A. That's correct.

11 Q. And then we get the total BTEX that is  
12 approximately 37 parts per million?

13 A. Correct.

14 Q. If we go to the next page, we have the total  
15 petroleum hydrocarbon TPH number of 194.

16 A. Correct.

17 Q. Above that we have just the diesel range?

18 A. Yes.

19 Q. Can you explain to me why in subsequent exhibits  
20 you have only -- that you have referred to the diesel range  
21 and ignored the total petroleum hydrocarbon number?

22 A. Because, according to Ms. Gannon and her  
23 conversations with Bill Olson of the OCD, the diesel range  
24 is really the range of organics of concern in the TPH  
25 number. The benzene and BTEX guidelines are really what's



1 of focus for the OCD in terms of regulating the gasoline  
2 range constituents. So the benzene concentrations and the  
3 BTEX concentrations are more reliable indicators of that  
4 fraction of hydrocarbons.

5 Q. Does your pit-closure plan allow for the use of a  
6 diesel-range number, as opposed to TPH?

7 A. I'm not aware of whether or not that's  
8 specifically called out in the plan. Ms. Gannon would  
9 probably be the better person to ask.

10 Q. And did you understand that this is just  
11 practice? I mean, that you can use the diesel number?

12 A. It's my understanding that that has been allowed  
13 by OCD.

14 Q. We could ask Mr. Olson about that?

15 A. Yes.

16 Q. Do you think it would be fair to evaluate the  
17 contamination that exists in this area by looking,  
18 comparing the PID readings, say in the middle of your pit,  
19 with what there would be up at the -- in the area  
20 surrounding the Burlington excavation to the north?

21 A. Not necessarily.

22 Q. Why not?

23 A. Because we don't have any indication of what  
24 different pieces of equipment may have been used by the  
25 people taking the measurements, how those pieces of

1 equipment were calibrated, whether or not they were taken  
2 on similar dates, whether they had similar moisture  
3 conditions in the soil.

4 Q. Okay.

5 A. There is a lot of uncertainty in the use of PID  
6 readings.

7 Q. If we look at the PID readings in SB-2 on, say,  
8 the second page of the four pages that relate to that well,  
9 you would agree with me that we have, you know, readings  
10 that range generally over -- with one exception, over 1000,  
11 and that they're all above the 100 guideline --

12 A. Yes, I would agree.

13 Q. -- going as high as 2000? If we go back to the  
14 SB-1, this would be directly north or downgradient from the  
15 Burlington excavation. The first sheet, the field notes  
16 from Envirotech, they show very low readings, do they not?

17 A. For SB-1?

18 Q. Yes.

19 A. The readings at approximately 15, 16 feet, are  
20 definitely above 1000.

21 Q. Wouldn't you think, though, that you ought to --  
22 wouldn't that be at the water table at that part of the  
23 site?

24 A. No, those look to be above the water table for  
25 that particular boring, because there's a notation at 18

1 feet that indicates groundwater was encountered, question  
2 mark.

3 Q. Don't the readings, until you get right down to  
4 the groundwater, show that there's almost no contamination  
5 on a PID reading?

6 A. I would say that down to a level of approximately  
7 14 feet, yes.

8 Q. And the groundwater is at what depth?

9 A. Groundwater was noted as roughly 18 feet in this  
10 case.

11 Q. You don't think it would be valid to make a  
12 comparison with these that, in fact, there's a lot more  
13 contamination down in the area of the PNM pit?

14 A. No, because we have an actual laboratory sample  
15 that corresponds to a PID reading of over 2000 that shows  
16 that contamination is below OCD guidelines.

17 Q. Except for TPH?

18 A. TPH, diesel range organics are below guidelines.

19 Q. And just TPH total --

20 A. TPH is 194 against a guideline of 100.

21 Q. Okay.

22 A. Therefore, PID readings are not necessarily an  
23 indicator that contamination is present above guidelines.

24 Q. Reading your testimony, I got the impression you  
25 didn't like PID readings real well; isn't that fair to say?

1           A.    Not for making definitive decisions on what is  
2 really contaminated, no. It's merely a screening tool.

3           Q.    They're valid tools if you're out trying to chase  
4 or see how far you need to extend an excavation, something  
5 of that nature, but you're better off with an actual  
6 sample?

7           A.    You want to confirm with an actual sample if  
8 you're going to base a decision of when to stop, how to  
9 remediate, et cetera.

10          Q.    You agree, do you not, that PNM contributed to  
11 the dissolved-phase hydrocarbon at this site? That's your  
12 testimony, is it not?

13          A.    PNM contributed some increment of dissolved-phase  
14 hydrocarbons to groundwater, yes.

15          Q.    And that you acknowledge that PNM is a potential  
16 source of the dissolved-phase contaminant in the plume that  
17 goes down the hill; is that true or not?

18          A.    Again, for a small increment, yes, PNM  
19 contributed contaminants to groundwater, groundwater moves  
20 downgradient, so yes.

21          Q.    And if we look at the dissolved-phase  
22 contamination in that plume, it's in excess of Water  
23 Quality Control Commission Standards, is it not?

24          A.    Yes, it is.

25          Q.    At this site, PNM instituted certain remediation

1 efforts, a free-product recovery well? That's correct?

2 A. That's correct.

3 Q. And there have been estimates of the volume that  
4 could have been released, based on Mr. Heath's calculations  
5 and estimates, how much could have been released from the  
6 PNM pit?

7 A. Of free-phase hydrocarbons to the pit, yes.

8 Q. And you have also, then, indicated that through  
9 this free-product recovery well, you've recovered far more  
10 than could have been released from the pit?

11 A. We've recovered more free-phase hydrocarbons than  
12 could have reached groundwater, yes.

13 Q. If there is more than one source of free-phase  
14 discharge here, isn't it fair to say that it is easiest to  
15 go out there first and be the first one to recover free  
16 phase? I mean, isn't it easier to get the first part of it  
17 back out, than as you get farther down, trying to recover  
18 all that's been discharged?

19 A. I guess I'm not sure what you mean by "easier".

20 Q. Don't you create a situation if you have two  
21 sources, and one person says, Hey, I estimate I did this  
22 and I have recovered it, that what you're really doing is  
23 walking away and leaving the harder part of the project for  
24 the other guy?

25 A. I don't believe PNM is trying to walk away from a

1 project and leave it to the other guy. I believe that PNM  
2 took a pretty detailed look at what it was that they  
3 released to the subsurface, and PNM then proceeded in  
4 accordance with its groundwater management plan to clean up  
5 that contamination.

6 PNM, by being the first one on the site doing  
7 investigations that led to the identification of  
8 groundwater, was the first to identify the product plume  
9 out here. Just because you're the first to identify a  
10 plume does not necessarily mean that you should be  
11 responsible for cleaning it up.

12 Q. My question is just a hypothetical, you're an  
13 expert: There are two of us, we both pour 1000 gallons in  
14 the ground, and I go out and I recover 1000. Doesn't that  
15 just leave you with the hardest part of the cleanup?

16 A. I guess again by "hard" I'm not sure what  
17 you're --

18 Q. Okay.

19 A. -- what you mean.

20 Q. Do you think it would be -- If we were both  
21 responsible for cleaning it up, we had both put 1000 in the  
22 ground, that if I took my 1000 out because I could pump it  
23 out and leave other things in the soil that, in fact, I  
24 wouldn't be leaving you with the harder part of the  
25 remediation effort?

1           A.     That depends on the situation. For example, if  
2     you've got one party that's upgradient and another party  
3     that's downgradient like we have here, if the situations  
4     were reversed and, let's say, Burlington were cleaning up  
5     and had pulled 1000 gallons of hydrocarbons and had said,  
6     We're done, their contamination has the potential to move  
7     downgradient and continue to move downgradient. Unless you  
8     are addressing the downgradient portion of the plume, you  
9     are not really addressing all of the contamination that you  
10    have caused.

11                PNM is in the reverse situation here. PNM is the  
12    recipient on the downgradient side of this wellpad of  
13    contamination that is shown to occur in an areally  
14    extensive area on this wellpad.

15                PNM's pit was a small pit. It was -- dimensions,  
16    20 by 20. There's an exhibit that we have -- and let me  
17    see if I can find the number -- that gives you an  
18    approximate sense of scale out here. And PNM, by  
19    installing its recovery well, could not hope to address the  
20    full areal extent, and it wasn't intended to -- that one  
21    well was not intended to do that. It was a start at free-  
22    product recovery in an area where free-phase hydrocarbons  
23    were identified.

24                Do we have an index?

25                MR. ALVIDREZ: Nine.

1 THE WITNESS: Sorry, I'm trying to find the free-  
2 phase and dissolved-phase plume maps that's buried in this  
3 volume.

4 At any rate, by recovering on the downgradient  
5 portion of the site where you have continuing releases that  
6 are upgradient or areally extensive are going to keep  
7 moving downgradient as you're recovering, you have no hope  
8 of recovering. Sure, it might be easier to pull a certain  
9 amount of gallons out, but it's not easier to remediate  
10 that problem. You have to identify the release points and  
11 then go after those release points to even have a hope of  
12 rationally addressing remediation here.

13 And that's what we've been saying that Burlington  
14 needs to do, is go in their upgradient locations, not only  
15 in the tank-drain area, but also the production pit area,  
16 which has not even been addressed by anything. There are  
17 no borings within that production pit area. We don't know  
18 where the release points are. PNM can't cut those off.

19 So it's not -- Saying hard or easy is not a good  
20 question.

21 Q. (By Mr. Carr) Well, let me try easy one more  
22 time, and tell me if I'm completely wrong, but isn't it  
23 easier to pump free product from a well when it contains  
24 four feet in it than, say, .4 of a foot?

25 A. As far as physically recovering product, you're



1     liable to get more recovery from a well that has  
2     significant accumulation of product.

3           Q.     And that was a good answer without using the word  
4     "easy".

5                     Can you say that the free-phase recovery well  
6     that PNM operated recovered the free-phase that was  
7     discharged by PNM?

8           A.     PNM did not discharge free-phase hydrocarbons to  
9     groundwater, therefore the hydrocarbons that we recovered  
10    were not placed there by PNM.

11          Q.     And so you're just recovering what?

12          A.     We're recovering --

13          Q.     Somebody else's --

14          A.     -- the free-phase -- that's correct.

15          Q.     -- free-phase?

16          A.     That is correct.

17          Q.     And your contribution was to dissolved-phase?

18          A.     That is correct.

19          Q.     And so because you did something with free-phase,  
20    you should be excused from helping with dissolved-phase?

21          A.     By removing free-phase hydrocarbons, every gallon  
22    of free-phase that we have removed has probably saved a  
23    million gallons of groundwater from becoming contaminated,  
24    so there is a lot of merit to doing some free-phase  
25    recovery. And if you start looking at what is being

1 protective of dissolved-phase, that is certainly a  
2 component.

3 Q. I'm just trying to -- It strikes me that you're  
4 saying you recovered free phase, you contaminated  
5 dissolved-phase. Because you do one, you should be excused  
6 from the other; is that what you're saying?

7 A. The increment of dissolved-phase contamination  
8 that PNM would have contributed at this site is dwarfed by  
9 the presence of this areally extensive free-phase  
10 hydrocarbons that are continually leaching near-saturation  
11 levels of benzene and other constituents into the  
12 groundwater. PNM did not contribute nearly that magnitude  
13 of concentration.

14 So trying to say, Okay, we've got this 200 parts  
15 per billion dissolved-phase plume inside this 10,000 part  
16 per billion dissolved-phase plume, how do you separate  
17 that? It's impossible.

18 Q. And --

19 A. So instead --

20 Q. And when you say, We've recovered more than we  
21 put into the ground, you're relying on the calculations and  
22 estimates of Mr. Heath? And in part those calculations  
23 that I've performed as well, yes.

24 Q. Talking now about MW-11, some recent information  
25 on that, you testified that a free-phase hydrocarbon sheen

1 has been observed on top of the water sampled from that  
2 well. Is that --

3 A. I believe that's incorrect. Monitoring Well 11  
4 is the furthest downgradient well. It is below standards  
5 at all times.

6 Q. Maybe I mean MW-12.

7 A. That could be.

8 Q. Okay. My question is, is it your testimony that  
9 because there is a sheen, free product is not far behind?  
10 Is that the testimony? Is that what I understand?

11 A. That, in fact, has been the history at some of  
12 the wells at this site.

13 Q. Does that necessarily occur?

14 A. It may or may not. The situation at Monitoring  
15 Well 12 is very different right now. Monitoring Well 12  
16 was installed as a new monitoring well after Burlington had  
17 come in and done the excavation in the area of PNM's pit.  
18 That well was emplaced in an area of clean backfill. That  
19 water is now moving through again as it re-equilibrates.

20 And that well, just by the fact that it's been  
21 increasing over time, shows that we have a continuing  
22 source of hydrocarbons that was not removed during the  
23 excavation process.

24 And it's also got sheen. You've got clean fill,  
25 contaminated water flowing in, you've got product in a seep

1 area from this excavation that we saw being backfilled. It  
2 was an active seep, there were no other activities taken to  
3 control that seep while the excavation was open, to do  
4 anything to stop the inflow of these fresh hydrocarbons.

5 So history is repeating itself. Monitoring Well  
6 12 is getting progressively more contaminated just like  
7 PNM's -- the area beneath PNM's pit was to begin with.  
8 It's the same mechanisms that are causing that inflow.  
9 It's not any different.

10 Q. When you say "we saw", you're looking at the  
11 analyses and the reports from other people?

12 A. The analyses, reports, photographs, video.

13 Q. And wouldn't you agree that just because there is  
14 a hydrocarbon sheen there, it doesn't necessarily mean, in  
15 fact, we're going to be having free-phase right behind it?

16 A. Right now I would say that free-phase may, in  
17 fact, come on the heels of that product. It just may take  
18 a while because of the new fresh soil that's been emplaced.

19 Q. Did you read Ms. Gannon's testimony, and when she  
20 talked about visible sheen on the groundwater sites that  
21 she was familiar with?

22 A. Yes, but in those cases source control had been  
23 performed -- which is not the case at the Hampton; we had  
24 continuing sources here -- and sheen did not develop into  
25 measurable free-phase product.

1 Q. In fact, she did say that PNM, in excavating over  
2 1100 pits, has encountered visible sheen at several  
3 groundwater sites, and in most instances these sites have  
4 not evolved into sites with free product?

5 A. That is because source control was performed.

6 Q. And you know that on each of those sites?

7 A. You would have to ask Ms. Gannon herself, but I'm  
8 pretty sure that most of the sites have had source control,  
9 and no product has occurred.

10 Q. When we look at your Exhibit 1, the comparison,  
11 was this prepared by you?

12 A. Yes, it was.

13 Q. If we go down toward the bottom, we get  
14 "Downgradient Dissolved Phase Migration".

15 A. Yes.

16 Q. This isn't actually a comparison, this is showing  
17 under Burlington's column, 1000 feet at the Hampton 4M,  
18 right?

19 A. That is correct.

20 Q. And it's just being compared to a typical  
21 migration at the PNM site?

22 A. That's correct.

23 Q. If we go down to the -- two down -- Well, let's  
24 go to the next one, "Excavated All Soils Beneath  
25 Equipment", we say no for Burlington and we say yes for

1 PNM.

2 Now, that yes is because Burlington has, in fact,  
3 removed the soils all the way down to the groundwater under  
4 that pit; isn't that right?

5 A. It's the combination of PNM's remediation  
6 activities, as well as Burlington's recent excavation.

7 Q. And if Burlington hadn't done that, we couldn't  
8 say that PNM had excavated all soils beneath the equipment?

9 A. Not in that phrasing, no.

10 Q. Prior to their excavation, have all soils beneath  
11 the equipment been excavated?

12 A. No.

13 Q. Okay. Then we have "Former Pit Excavated to  
14 Depths Below Groundwater", and we say no on Burlington,  
15 although Mr. Sikelianos said that pit went to groundwater,  
16 right?

17 A. Which pit are you referring to?

18 Q. Well, we've got under your column "Burlington",  
19 and when you say "Former Pit Excavated to Depths Below  
20 Groundwater", what pit are you talking about?

21 A. I'm referring to the tank drain pit and then the  
22 production pit, which has seen no excavation whatsoever.

23 Q. The pit that Mr. Sikelianos was talking about,  
24 the one -- the tank drain, I guess --

25 A. Yes.

1 Q. -- but that went to groundwater, did it not?

2 A. That went to groundwater in a limited area.

3 Q. Okay, all right. And, you know, the area of the  
4 size of the pit really doesn't directly correlate how much  
5 could have gone through that, does it? You were saying the  
6 pit is a very small part of the surface of this site. You  
7 could put an awful lot of contamination through a small  
8 spot in the surface, can't you?

9 A. Theoretically, yes, but you expect to see traces  
10 of that contamination through the soil column, and you  
11 would not expect to see significant migration of that  
12 material upgradient.

13 Q. But when you talk about the surface of the pit  
14 being one percent of the location, that just says that's  
15 the spot, and it was small but you could run a lot through  
16 that. I mean, the size of the pit doesn't really tell us  
17 how much could have gone through it, does it?

18 A. The size of the pit relative to all of the other  
19 sources at this site, including above-ground storage tanks,  
20 the tank-battery area, the tank drain pit, the production  
21 units, gives a lot more potential for release points on  
22 Burlington's side of the wellpad than the small pit area  
23 that's on PNM's side of the wellpad.

24 Q. The type soil would have a bearing on how much  
25 could go through it, isn't that right? If it were fill

1 dirt? I'm not saying anything except, isn't this just one  
2 indication of how much could go through it, the size of the  
3 actual surface involved in the pit?

4 A. That's one indicator, yes.

5 Q. If we look at the item on Exhibit 1 that says  
6 "Former Pit Excavated to Depths Below Groundwater", again  
7 for PNM you say yes, and that's, again, because it was  
8 finished off by Burlington last winter?

9 A. That is correct.

10 Q. "Former Pit Fully Removed", you say no for  
11 Burlington, but you say yes for PNM. What do you mean by  
12 fully removed?

13 A. All of the soils that comprise the berms of the  
14 pit, the base of the pit, extending down to below the water  
15 table, are physically gone --

16 Q. Okay.

17 A. -- in terms of PNM's pit.

18 Q. And so that's because Burlington finished again  
19 last winter?

20 A. It's a combination of PNM's remediation work and  
21 Burlington's remediation work.

22 Q. When you talk about the free product recovery,  
23 you say, 1000 gallons for PNM and approximately 50 gallons  
24 for Burlington, correct?

25 A. That's correct.



1 Q. And that's the 50 gallons they removed this last  
2 winter during the excavation?

3 A. That is correct.

4 Q. They also removed some saturated soils, did they  
5 not?

6 A. Yes, I believe so.

7 Q. And there would be some free-phase in that too,  
8 wouldn't there be?

9 A. That's correct.

10 Q. The last column says "Remediation Complete". It  
11 says no for Burlington. We're in agreement on that.

12 A. Okay.

13 Q. It then says yes for PNM. Isn't that really what  
14 you're asking the OCD to rule on here today?

15 A. Yes, we are. We're saying PNM has removed its  
16 increment of contamination and that we should be allowed to  
17 say we're finished and hand it over to Burlington.

18 Q. This is your decision, but we're waiting on  
19 confirmation from the OCD?

20 (Laughter)

21 THE WITNESS: That's my opinion.

22 MR. CARR: All right. That's all I have.

23 CHAIRMAN WROTENBERY: Mr. Carroll?

24 MR. CARROLL: Thank you. Ms. Terauds, I just  
25 have a few questions of clarification.

## EXAMINATION

BY MR. CARROLL:

Q. On pages 21 and 22 of your direct testimony, you make a calculation of the total volume of free product?

A. Yes.

Q. And then the assumption you have on lines 2 and 3, page 22, it says "free phase hydrocarbon thickness measured in monitoring wells is three times the aquifer thickness".

A. Yes.

Q. Is that correct?

So was your calculation of total product volume based upon the measured product thickness in the monitor wells or on the actual product thickness on the aquifer?

A. The measurements we had at the time were based on monitoring wells. PNM had not performed any excavations down to the water table and actually measured smear-zone thicknesses, et cetera.

Q. Aren't there adjustments you need to make to the measured volume in the monitor wells?

A. That's what we did, we assumed that the thickness in the monitoring wells was three times greater than what was in the aquifer, and we accounted for that difference.

Q. Don't adjustments have to be made to the measured thickness in the monitor wells, some factors like specific

1 gravity in order to convert it to the actual thickness on  
2 the aquifer?

3 A. The thickness of the free product? We had direct  
4 measurements of the thickness of free product from  
5 interface probes.

6 Q. In the wells?

7 A. In the wells, yes.

8 Q. So isn't that just an apparent thickness of the  
9 free product, rather than the true thickness?

10 A. Yes, and that's why we applied that factor-of-  
11 three correction. That's a common industry standard for  
12 correlating what the thickness of the product is in the  
13 aquifer, versus the greater thickness that you typically  
14 see in a monitoring well. There's been a lot of empirical  
15 data collected to show that that's a factor of about three.

16 Q. And I believe -- I could be mistaken, but I think  
17 your testimony conflicted with Ms. Gannon's earlier. I  
18 believe you said the MW-2 well was intended to reach  
19 groundwater? If I'm not mistaken, Ms. Gannon testified  
20 that the MW-2 originally was drilled to determine the  
21 vertical extent of the contamination, and then they reached  
22 groundwater unexpectedly.

23 A. I was asked about the monitoring well completion,  
24 I guess, so monitoring wells are usually installed when  
25 you're hoping to sample groundwater.

1 Q. But it did start out as a soil bore?

2 A. Yes, you usually start out drilling a well by  
3 putting a soil boring in.

4 MR. CARROLL: That's all I have.

5 CHAIRMAN WROTENBERY: Commissioner Bailey?

6 COMMISSIONER BAILEY: (Shakes head)

7 CHAIRMAN WROTENBERY: Commissioner Lee?

8 EXAMINATION

9 BY COMMISSIONER LEE:

10 Q. Yes, your Exhibit 1, you say you estimated  
11 Burlington's free-phase release to groundwater is 7500 to  
12 13,000 gallons. When? When did that happen?

13 A. That's the total free-phase hydrocarbons  
14 estimated to be floating on the groundwater. That must  
15 have happened anytime from the time the well was put into  
16 production back in 1984 up until the time that we began  
17 investigation.

18 Q. So in your testimony you also say -- Your  
19 statement is something like, the gas production is  
20 constant, so you expect the condensate is going to be  
21 constant, right?

22 A. I believe that was addressed more in Mr. Heath's  
23 testimony. It may have been in my first-hearing  
24 transcript, but Mr. Heath is the better expert on oil and  
25 gas ratios and such.

1 Q. But it's in your testimony, right?

2 A. Yes, I prepared some of the graphs and looked at  
3 whether or not anomalies existed.

4 Q. So on what base do you talk about this, the gas  
5 production is constant, therefore the condensate is  
6 constant? Is that an expert statement, expert-witness  
7 statement?

8 A. Again, I would defer that question to Mr. Heath.  
9 He's the true expert on this matter for PNM.

10 Q. No answer?

11 A. I'm sorry, we just saw the anomaly, and Mr. Heath  
12 can probably address why he thinks that occurred.

13 MR. ALVIDREZ: We can recall Mr. Heath. We have  
14 no objection if you have questions of Mr. Heath.

15 CHAIRMAN WROTENBERY: Would you like to do that?

16 COMMISSIONER LEE: Yes.

17 CHAIRMAN WROTENBERY: Okay, we might call him  
18 back up after we finish hearing Ms. Terauds.

19 I don't have any questions at this time.

20 Do you have any redirect?

21 MR. ALVIDREZ: I do have a bit of redirect.

22 REDIRECT EXAMINATION

23 BY MR. ALVIDREZ:

24 Q. Ms. Terauds, I believe Mr. Carr was trying to get  
25 you to try and compare the results that we saw in SB-1

1 versus SB-2 and kind of contrast whether or not we could  
2 make some sort of judgment about the relative contributions  
3 of contamination based on readings that were performed in  
4 connection with boring those -- those soil borings. Do you  
5 recall that --

6 A. Yes.

7 Q. -- line of questioning?

8 I want to talk a little bit about where SB-2 was  
9 installed in relationship to PNM's suspected site of  
10 release.

11 A. SB-2 was installed between monitoring wells 2 and  
12 6, as noted on the Envirotech boring log in PNM Exhibit 15,  
13 so it was between the PNM recovery well and the PNM source  
14 monitoring well, so through the center of PNM's pit.

15 Q. That's right smack dab in the center of PNM's  
16 former pit?

17 A. Yes, it is.

18 Q. Let's contrast that with where SB-1 was bored.

19 A. The notation on the boring log by Envirotech for  
20 SB-1 indicates that this well was installed north of  
21 Burlington's excavation.

22 Q. Okay. Is that the -- are we -- Would we be  
23 comparing apples and apples under these circumstances in  
24 terms of the location of those two borings?

25 A. No, the location of SB-1 is neither in the center

1 of the tank drain pit, nor is it in the center of the  
2 production pit.

3 Q. Okay. You were asked some questions about PNM  
4 Exhibit 1 with regard to excavation, and I'm really talking  
5 about the fourth item or entry from the bottom about  
6 "Former Pit Excavated to Depths Below Groundwater". If I  
7 understood Mr. Sikelianos' testimony, he said that  
8 Burlington's excavation went to groundwater.

9 Is there a difference in your mind and when you  
10 prepared this, of excavations that go just to go  
11 groundwater versus excavations that go below groundwater?

12 A. Yes, I think when you're looking to remove source  
13 material, you have to look at trying to address the  
14 hydrocarbon smear zone, so going to water and just pegging  
15 the top of the water table, which is largely what  
16 Burlington did in the general area of the tank battery  
17 doesn't necessarily give you a complete indication of where  
18 the smear zone is.

19 If you're in a high water table condition, you  
20 might reach water, and because the water has come up above  
21 the level of the smear zone, you may not actually see the  
22 hydrocarbons.

23 And that's what we are alluding to when we're  
24 saying that based on the data presented in temporary wells  
25 5 and 7, is that the dissolved-phase concentrations there

1 clearly show a significant hydrocarbon source remains, and  
2 the depths at which those temporary borings were sampled  
3 are deeper than any excavations performed by Burlington.

4 So there's a source remaining in the area of  
5 their former tank battery, and that's been pointed out to  
6 OCD early on, and that's been our ongoing concern, is, we  
7 have upgradient sources, they're contributing this free  
8 phase, and whatever we try to do to remediate or pit, we're  
9 going to be hopeless in addressing it unless those  
10 upgradient release points are identified, cut off and  
11 remediated, and that has yet to happen.

12 Q. You were also asked some questions about free-  
13 phase versus dissolved-phase, and free product versus  
14 dissolved-phase product and how PNM can possibly ask why it  
15 should be let off the hook when it hasn't really addressed  
16 dissolved-phase product, it's only addressed free-phase  
17 product.

18 And what I want to ask you is, what typically  
19 happens at a site where you just have dissolved-phase  
20 product? How is that remediated?

21 A. Dissolved-phase product or dissolved-phase  
22 contamination?

23 Q. Well, dissolved-phase contamination --

24 A. Thank you.

25 Q. -- groundwater.



1           A.    Yes.  PNM has addressed most of their groundwater  
2 sites where there's no free-phase identified, where they've  
3 done the pit closures and source-removal actions by natural  
4 attenuation.

5                   That means that they monitor the plume and they  
6 establish that the concentration trends over time, based on  
7 quarterly monitoring, are decreasing and that it's expected  
8 that processes like volatilization, biodegradation and  
9 dilution and sorption will reduce the concentrations in  
10 groundwater to levels below OCD guidelines and Water  
11 Quality Control Commission Standards.

12                   And we've been able to close many of our sites in  
13 -- I believe it's eight to twelve quarters of monitoring  
14 through that process.  And that's typical where PNM  
15 dehydrators have been operating, and that's why this site  
16 is so atypical.

17           Q.    So if this were the -- If the Hampton 4M were the  
18 typical groundwater site where you just had dissolved-phase  
19 in the groundwater, what remediation activities would PNM  
20 likely employ at the Hampton 4M under those circumstances?

21           A.    With just dissolved-phase in the groundwater --

22           Q.    Right?

23           A.    -- at a typical site?  We would use our  
24 monitoring network to establish that natural attenuation  
25 was occurring.  We would report those findings to OCD, and

1 once the water levels dropped below standards, we would  
2 seek closure.

3 Q. Are you familiar with any sites where you've got  
4 dissolved-phase that has left the wellpad? I'm talking  
5 about groundwater sites that don't have free product, but  
6 where you've got some dissolved phase which, because the  
7 groundwater flow has left the wellpad, are those handled  
8 the same way?

9 A. I believe they are. Ms. Gannon would be the best  
10 one to answer that, but I believe that's the case.

11 Q. There's been a lot of discussion about PIDs  
12 versus lab analyses, and I think SB-2 may illustrate -- the  
13 result of SB-2 may illustrate just what a wide disparity  
14 there can be with regard to those results. I mean, Mr.  
15 Carr was asking you about the PID readings.

16 We had the PID readings, they were in excess of  
17 2000?

18 A. Yes, for the sample obtained at 15 feet for SB-2.  
19 That's in PNM Exhibit 15.

20 Q. Right, PNM Exhibit 15 on the SB-2. And when they  
21 have the "greater" sign, does that suggest to you that  
22 they've pegged the meter --

23 A. Yes, it does.

24 Q. -- that that's as high as that PID would go?

25 A. Yes, it does.

1 Q. But yet when you did -- the actual lab analyses  
2 were done, what did we find in terms of the levels of  
3 hydrocarbons that were in the soil there at that very same  
4 level?

5 A. In the soil column at 15 feet we're below OCD  
6 guidelines for benzene, BTEX and diesel-range organics.

7 Q. So can you really use PIDs for comparison -- PID  
8 readings for comparison purposes of making decisions about  
9 the level of contamination and the soil at a given site?

10 A. PIDs should really be used as a presence or  
11 absence indicator, and then you should follow up for any  
12 real decisions with laboratory analytical sampling, because  
13 that's how you can distinguish whether or not there's  
14 really something going on at the soil interval that you're  
15 sampling or whether or not you're getting vapors emanating  
16 from other nearby sources, such as free-phase hydrocarbons  
17 floating on the groundwater.

18 Q. There was also a discussion about a sheen having  
19 appeared in Monitoring Well 12, and when you're talking  
20 about sheen, what are we talking about? Can you tell us  
21 what that means?

22 A. It's a rainbowing on the water so that you can  
23 see that there's the beginnings of an oil stage on the  
24 water surface, but it's not yet accumulated to the point  
25 where you could measure it. So it would be probably

1 typically less than a tenth of a foot in thickness. But  
2 you can clearly see a rainbow sheen.

3 You've probably seen oil slicks on your driveway.  
4 It's that type of a sheen that we're talking about.

5 Q. And again with regard to MW-12, was that  
6 installed before or after Burlington's major excavation?

7 A. Monitoring Well was installed after the  
8 excavation was performed.

9 Q. And where was it installed? In what location?

10 A. It was installed almost directly on top of  
11 Monitoring Well 6, or in the former location area of  
12 Monitoring Well 6, through the clean backfill that  
13 Burlington had brought in.

14 Q. Had there been any -- Have we seen any sheen  
15 appear in any other wells since Burlington's mass  
16 excavation?

17 A. Yes, we have.

18 Q. And where have we seen that sheen?

19 A. Monitoring Well 5, which is our first offsite  
20 monitoring well, has shown the recent appearance of sheen  
21 just in this August sampling event.

22 Q. What does that suggest to you about the impacts  
23 of Burlington's mass excavation on the wellpad site?

24 A. To me it suggests that the limited excavations  
25 performed in the area of PNM's pit did not address ongoing

1 sources of contamination and that we're seeing that  
2 contamination continue to move through the site and move on  
3 downgradient.

4 The problem is clearly not getting better.

5 Q. We talked about sheens in other contexts, where a  
6 sheen has been noted at other PNM groundwater sites. Once  
7 you have addressed the source of contamination at the  
8 typical PNM site, what happens to that sheen on the  
9 groundwater?

10 A. That sheen disappears, and usually we're able to  
11 go through the natural attenuation monitoring process and  
12 demonstrate that we don't have a further risk to the  
13 groundwater.

14 Q. You might look at PNM Exhibit 17. Can you tell  
15 us what that is?

16 A. That's a hydrocarbon seep on the northwest of the  
17 wellpad, and it indicates there's a rainbow sheen on top of  
18 the water.

19 The photograph was taken in March, 1999, after  
20 Burlington's excavation in the area of PNM's former pit.

21 Q. Yeah, my question to you, is this what you mean  
22 when you're talking about sheen on the water?

23 A. That is an example, yes. And I believe this  
24 photograph was sent to Mr. Olson, and it may have prompted  
25 his April, 1999, visit and sampling of the seep, which

1 indicated that benzene was now above groundwater standards  
2 at this hydrocarbon seep.

3 MR. ALVIDREZ: I have no further redirect at this  
4 time.

5 CHAIRMAN WROTENBERY: Mr. Carr?

6 MR. CARR: No.

7 CHAIRMAN WROTENBERY: Mr. Carroll?

8 MR. CARROLL: (Shakes head)

9 CHAIRMAN WROTENBERY: Thank you very much for  
10 your testimony --

11 THE WITNESS: Thank you.

12 CHAIRMAN WROTENBERY: -- Ms. Terauds.

13 And I believe Commissioner Lee has decided that  
14 he does not need to ask questions of Mr. Heath at this  
15 time.

16 COMMISSIONER LEE: I will ask Burlington.

17 CHAIRMAN WROTENBERY: Okay, you'll ask Burlington  
18 on that. And I believe that concludes --

19 MR. ALVIDREZ: That concludes our witnesses --

20 CHAIRMAN WROTENBERY: -- your witnesses.

21 MR. ALVIDREZ: -- Madame Chairman.

22 CHAIRMAN WROTENBERY: I think this might be a  
23 good time, then, to call it an evening.

24 Do you still want to go?

25 MR. CARR: No, I don't.

1 (Laughter)

2 CHAIRMAN WROTENBERY: Okay. We will meet back  
3 here at 8:30 tomorrow morning and start up again with  
4 Burlington's case.

5 (Thereupon, evening recess was taken at 5:40  
6 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 Division 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 October 13th, 1999.



STEVEN T. BRENNER  
CCR No. 7

My commission expires: October 14, 2002