STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR REVIEW OF OIL CONSERVATION DIVISION DIRECTIVE DATED MARCH 13, 1998, DIRECTING APPLICANT TO PERFORM ADDITIONAL REMEDIATION FOR HYDROCARBON CONTAMINATION, SAN JUAN COUNTY, NEW MEXICO

CASE NO. 12,033

ORIGINAL

98 DEC -7 PM 2:18
OIL CONSERVATION DIV.

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING (Volume I)

BEFORE: MARK ASHLEY, Hearing Examiner

November 19th, 1998

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MARK ASHLEY, Hearing Examiner, on Thursday, November 19th, 1998 (Volume I), 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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I N D E X

November 19th, 1998
Examiner Hearing
CASE NO. 12,033 (Volume I)

* * *

E X H I B I T S

(Additional information at prehearing conference, pp. 5-29)

Applicant's	Identified	Admitted
Exhibit 1	64	68, 71
Exhibit 2	171	-
Exhibit 3	177	71
Exhibit 4	57, 63, 172	71
Exhibit 5	59, 169	71
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Exhibit 10	129	-
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Exhibit 39	31, 46	71
Exhibit 40	196	-
Exhibit 41	196	-
Exhibit 42	198	-
Exhibit 46	199	-
Exhibit 47	200	-
Exhibit 49	187	-

* * *

Burlington	Identified	Admitted
Exhibit 1	-	73
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* * *

A P P E A R A N C E S

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and
PAUL R. OWEN

* * *

WHEREUPON, the following proceedings were had at 11:10 a.m.:

EXAMINER ASHLEY: The hearing will come back to order now.

PNM has requested a prehearing conference, so at this time we will recess and take that prehearing conference and meet back here at one o'clock to start the next case. And I guess we need the members -- The lawyers for the parties can accompany us to another room for the conference.

This hearing is dismissed until one o'clock.

(Thereupon, a recess was taken at 11:10 a.m.)

(The following proceedings had at 11:15 a.m.)

EXAMINER ASHLEY: Okay, I guess we're going to go back on the record now.

MR. CARROLL: Are you going to put the prehearing conference on the record?

EXAMINER ASHLEY: Yes.

Mr. Alvidrez?

MR. ALVIDREZ: Mr. Hearing Examiner, the reason we requested a prehearing conference is, as you know, we've got a number of witnesses. I have planned on a fairly lengthy presentation, and I think that we might be able to streamline very much if we can agree to the admissibility of a number of exhibits beforehand, and that way we won't

have to lay the strict foundation for each and every exhibit. And I thought this might be a useful tool to expedite things. I believe everyone is amenable to at least discussing it.

MR. CARROLL: The Division agrees.

MR. ALVIDREZ: We can just take them one at a time.

EXAMINER ASHLEY: Do you have a copy I can look at?

MR. ALVIDREZ: Absolutely, and there is an exhibit list that's attached to the beginning, and we can kind of keep score here on exhibits.

And of course, we're not asking for a ruling in advance; we'll lay the foundation if there are disputed exhibits.

Exhibit 1, as I understand it, there will be an objection to. We won't even talk about it at this point.

Exhibit 2 is a summary or chronology of basically the investigatory activities that have taken place out there. I don't know if here's been sufficient time to review it, but basically the backup documents for the matters that are contained in here are contained in the exhibit volume that we've got before you right now.

MR. CARROLL: Three through 14 are the --

MR. ALVIDREZ: There are some --

MR. CARROLL: -- blow-ups?

MR. ALVIDREZ: -- large-format exhibits, right. Let's stick with the book right now. I think there should be some, but let's move on to the ones that I don't think there will be any controversy surrounding. And in fact, I think perhaps the Division may have many of the same exhibits in mind.

Let's skip to 26, which is the copy of the PNM Unlined Surface Impoundment Assessment Form and remediation -- Pit Remediation and Closure Report, I guess is part of the record. It's been produced. It basically shows the initial activities out at the site.

MR. CARR: I don't know how you'd like to go through these, Mr. Examiner, but on behalf of Burlington I can state that pursuant to a subpoena Mr. Alvidrez did provide copies of exhibits to Burlington. We have reviewed them, and I have looked through this exhibit book, and we will not be objecting to any of these exhibits, with the exception of the Exhibit Number 1; we'll state an objection when that comes up.

But they have been provided, we have looked them and we do not object to their admission.

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: I guess it's up to you, Mr. Carroll. I can just briefly describe what we've got.

Exhibit 27 is the notification that was sent to the Division of groundwater contamination, a true and correct copy.

MR. CARROLL: Mr. Alvidrez, how much of this is contained in the OCD files?

MR. ALVIDREZ: Well, I suspect that much of it is contained in the OCD files, if not all, from --

MR. CARROLL: I'll stipulate to anything that's in the OCD files. In fact, I was going to introduce as exhibits copies of the Environmental Bureau files, and I was going to actually ask the Examiner to take administrative notice, unless you need somebody to authenticate.

MR. ALVIDREZ: I don't. I think -- As you can see, the top page on 28 is exactly the page you've got there -- No, it's not, it's a different report. Oh, you've got a later report than I do.

MR. CARROLL: Yeah, I think this is the closure report.

MR. ALVIDREZ: Ah, okay. I haven't gotten that. But I think much of this will be the same.

MR. CARROLL: And I can get copies to you and Mr. Carr.

MR. ALVIDREZ: Okay. Well, I can't tell you what's in your file. I can tell you what I believe is in

your file, and that's 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48 -- I believe that is all.

You may actually have -- I'm not sure that you've got some of the latest information that's been developed out there, which begins at 49.

MR. CARROLL: Okay, well, Willie will know that from --

EXAMINER ASHLEY: Do you have any way of knowing if these are part of the OCD files?

MR. CARROLL: I'll have Willie look at them. I think we'll just go through and stipulate to them unless Willie says we don't have that.

MR. ALVIDREZ: Okay. Now, do you want to come back at the beginning of the hearing and we can just sort of check off which ones you agree to, or do you want have Willie look at them right now and just get it on the record?

MR. CARROLL: Yeah, let me get Willie.

EXAMINER ASHLEY: I don't understand how come you're wanting to -- What actually are you trying to accomplish here?

MR. ALVIDREZ: Getting in these exhibits so we can start talking about, you know, without laying foundation --

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: -- taking the time, you know, is this a true and correct copy, and all --

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: -- all that sort of stuff.

MR. CARROLL: Mr. Alvidrez, I believe I've got copies of a motion to quash to your subpoena.

MR. ALVIDREZ: Yeah, I think it ought to be granted, probably.

EXAMINER ASHLEY: I'll think about it.

MR. ALVIDREZ: Okay.

MR. CARROLL: So since we're on the record, I guess we can take care of that preliminary matter.

EXAMINER ASHLEY: Okay, yeah, I don't have any problem.

MR. CARROLL: And do we have any -- This will be your copy.

MR. ALVIDREZ: Okay.

MR. CARROLL: That will be OCD Exhibit Number 1, is the PNM file regarding the site.

Exhibit Number 2 will be the Burlington file regarding the site.

MR. ALVIDREZ: Are there two sets here?

MR. CARROLL: No.

MR. ALVIDREZ: Oh, this is one, that's the other.

MR. CARROLL: That's PNM, this is Burlington, and that is the file kept by the OCD in its ordinary course of business, available to the public.

Willie, can you look? We've got all these exhibits. I think most of it is in our PNM file.

MR. OLSON: Okay.

MR. CARROLL: Mr. Alvidrez thought --

MR. OLSON: Some of that stuff might not be. Do you want me to check which ones are in and which ones aren't?

MR. ALVIDREZ: Right. Page 2- -- I mean Exhibit 26 through 48, I believe, are all going to be --

MR. CARROLL: -- part of our file.

MR. ALVIDREZ: -- very familiar.

MR. CARROLL: You can start with 49 and look through this and see if that --

MR. ALVIDREZ: In fact, I --

MR. OLSON: That doesn't look familiar already.

MR. ALVIDREZ: No, that one doesn't. Well, I think we've got a lot of the same --

EXAMINER ASHLEY: Mr. Alvidrez, you said Exhibits 3 through 14 were the large exhibits over here?

MR. ALVIDREZ: Large format, yes.

EXAMINER ASHLEY: Okay. Mr. Carr, did you have any questions about those exhibits --

MR. ALVIDREZ: Might run through --

EXAMINER ASHLEY: -- the ones that are the large exhibits?

MR. CARR: I haven't really seen them, but what I -- There are some, I think, that have been enlarged or modified, but...

MR. ALVIDREZ: This one has been modified to reflect free product.

MR. CARR: MW-4.

EXAMINER ASHLEY: Which one did you just refer to, Mr. Alvidrez?

MR. ALVIDREZ: This is Exhibit 8.

EXAMINER ASHLEY: Exhibit 8.

MR. ALVIDREZ: We can just take the next one out of order, we've seen --

EXAMINER ASHLEY: That's Exhibit --

MR. CARR: Burlington has no objection to PNM Exhibits 14 --

EXAMINER ASHLEY: Are you going to go through those in order?

MR. ALVIDREZ: They're not in any order, they're really by size, how we had to carry them in.

MR. CARR: We have no objection to PNM Exhibits 10, 11 and 14.

EXAMINER ASHLEY: Mr. Alvidrez, could you remove

the ones that were okayed?

MR. CARROLL: Rick, who's going to be sponsoring the last exhibits here, 48 through --

MR. ALVIDREZ: Valda Terauds will be talking about --

MR. OLSON: This is all new work, a lot of these --

MR. ALVIDREZ: Exactly, this is --

MR. OLSON: This I don't think is.

MR. ALVIDREZ: -- work that's been done out there.

MR. OLSON: This is 1997. That might be in a prior document, which would be --

MR. ALVIDREZ: Actually, some of the wellboring logs from the earlier wells are attached to some of the reports.

MR. OLSON: Right, that's one -- Because this is all 1997 well logs here.

EXAMINER ASHLEY: Mr. Carroll, have you had a chance to look at these exhibits and --

MR. CARROLL: No, and I want Willie to look at them.

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: There are some transparencies as well, that are rolled up, that go over the aerial

photograph. These put the things in context, these are overlays that just kind of put them in context.

MR. OLSON: Yeah, everything from -- after this, I can't find.

MR. CARROLL: Okay.

MR. OLSON: And this stuff he said he thought we had.

MR. CARROLL: Forty-eight?

MR. OLSON: Yeah, this is my letter.

MR. CARROLL: Well, we have that.

MR. OLSON: I thought he said 26 through 48 we did have.

MR. CARROLL: Yeah, from 49 on back.

EXAMINER ASHLEY: Rand, are you done?

MR. CARROLL: Not yet.

I don't think we have any objection. I mean, these are all PNM's depiction of what's going on at the site.

MR. ALVIDREZ: Well, the photographs are primarily just to kind of set the scene. These explain how the various pieces of surface equipment we're going to discuss work.

This is a -- Exhibit 16 is a flow chart, if you will, of gas coming in from the wellhead and where it goes from there.

EXAMINER ASHLEY: Mr. Carr, have you seen these exhibits?

MR. CARR: Yes.

MR. ALVIDREZ: It's also a small format in the book.

EXAMINER ASHLEY: Okay, the large exhibits start with Number 3?

MR. ALVIDREZ: I believe that's correct.

EXAMINER ASHLEY: Could we just kind of go down the list and -- numerically here, and make sure that there's no problem with that?

MR. ALVIDREZ: Sure. These would be -- This will be 3, this aerial. And then the other aerials here are 4 and 5.

EXAMINER ASHLEY: Mr. Carr? I'm sorry. You've already looked at some of these exhibits?

MR. CARR: Yes, I have.

EXAMINER ASHLEY: We're up to Number 3, 4 and 5.

MR. CARR: We have no objection to 3, 4 and 5.

MR. ALVIDREZ: Six is the groundwater elevation chart transparency.

MR. CARR: No objection.

MR. ALVIDREZ: Seven, I believe, is the plume diagram, plume contours, also an overlay.

MR. CARR: We have no objection to Exhibit 7.

EXAMINER ASHLEY: No objection?

MR. ALVIDREZ: So are we okay, 2 through 7 so far?

MR. CARROLL: Uh-huh.

MR. ALVIDREZ: All right. What is the next exhibit number?

EXAMINER ASHLEY: Eight.

MR. ALVIDREZ: Eight is the cross-section.

MR. CARR: No objection.

MR. ALVIDREZ: Refresh my recollection as to what 9 is.

EXAMINER ASHLEY: Graph showing free-product recovery compared to thickness of free-phase product.

MR. ALVIDREZ: Okay. That would be this over here.

EXAMINER ASHLEY: Exhibit Number 9?

MR. ALVIDREZ: Product recovery.

MR. CARR: We have no objection to Number 9.

MR. CARROLL: We don't either.

MR. ALVIDREZ: Ten and 11 are photographs and a diagram of certain pieces of surface equipment, the combination production unit and gas dehydrator.

MR. CARR: Burlington has no objection to Exhibits 10 nor to Exhibit 11.

MR. CARROLL: Neither does the Division.

MR. ALVIDREZ: I don't believe we'll be offering Exhibit 12, but that's the well completion -- We're not going to offer that.

So the next exhibit will be 13, which is the production history.

MR. CARR: No objection.

MR. CARROLL: No objection.

MR. ALVIDREZ: What is 14?

EXAMINER ASHLEY: Hampton 4M well oil and gas production ratio comparison.

MR. ALVIDREZ: That's another -- Okay, 14 is actually in the book. It's not a large format. And that's taken from the production records.

Not in there? Maybe it's not. Oh, I'm sorry, here it is, this is 14. I apologize, we do have another one.

MR. CARROLL: No objection.

MR. CARR: Burlington has no objection to 14.

MR. ALVIDREZ: I believe 15 and 16 are smaller format.

MR. CARROLL: They're in the book.

MR. ALVIDREZ: Right. And we also have 16, a large format, which I believe was not objected to, at least by Burlington.

EXAMINER ASHLEY: That's Number 16, you said?

MR. ALVIDREZ: Right. I think we even have it in a mounted format. This one is brand-new.

EXAMINER ASHLEY: That's Exhibit 16?

MR. CARROLL: No objection.

MR. ALVIDREZ: Seventeen through 24, I believe, are these photographs.

MR. CARROLL: They're all fine.

EXAMINER ASHLEY: Has Burlington seen these?

MR. ALVIDREZ: They have been produced to Burlington.

MR. CARR: Yes, and we have no objection to the photographs.

MR. ALVIDREZ: So that's 17 -- Skip 24 and 25, photographs.

EXAMINER ASHLEY: You don't have 24 and 25?

MR. ALVIDREZ: We do have 25. Twenty-four is a videotape --

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: -- and I don't think we're going to use that --

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: -- unless there's a question about something there.

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: Then we started with Exhibits 26

through 48, which I --

MR. CARROLL: No objection.

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: I understood Mr. Carr had no objection.

What about the summary beginning on page 49? I'll tell you basically, this is just a summary page of each date that a given well or boring was sampled, with the results compiled from all of the reports that have been submitted.

MR. CARR: We have no objection.

MR. CARROLL: No objection.

MR. ALVIDREZ: So 49 is no objection.

MR. OLSON: That was older data, but I couldn't find it in anything that was submitted to us, at least.

MR. ALVIDREZ: This, I believe, is brand-new, which we received from Burlington, SB drillings. I'm talking about Exhibit 51.

MR. CARROLL: You received this from Burlington?

MR. ALVIDREZ: I believe so.

MR. CARROLL: It was done by Envirotech.

We have no objection.

MR. CARR: We have no objection.

EXAMINER ASHLEY: What exhibit is that? 51?

MR. ALVIDREZ: 51.

MR. OLSON: Forty-nine, 50, 51.

MR. CARROLL: Okay.

MR. ALVIDREZ: We didn't cover 50 with Burlington anyway, and I don't know if we did with the OCD. What 50 is, is an estimate of the volume of free product underlying the well pad site, as well as an estimate of how much could have possibly originated, if at all, from PNM's pit.

MR. CARROLL: This is prepared by PNM?

MR. ALVIDREZ: This is prepared by Valda Terauds, one of PNM's witnesses.

MR. CARROLL: No objection.

EXAMINER ASHLEY: Has Burlington seen that?

MR. ALVIDREZ: They have not.

MR. CARROLL: I think Bill is looking at it now.

MR. ALVIDREZ: It's something brand-new, and I can explain what that is.

MR. CARR: I don't think I have an objection to -- No objection to Exhibit 50.

MR. CARROLL: Fifty-two --

MR. OLSON: That's old data, but we don't have it.

MR. ALVIDREZ: Fifty-two is data -- I thought it should be in the record, anyway. At least some of it I believe is attached to reports.

MR. OLSON: I looked through the reports, I

didn't see that many in the reports.

MR. ALVIDREZ: Okay, what this is, as you can see, are basically the well-completion and boring logs for various of the wells that were drilled out there.

MR. CARROLL: All prepared by Philip?

MR. ALVIDREZ: I think there are some Envirotech --

MR. CARROLL: We have no objection.

MR. ALVIDREZ: It was all done in connection with the work that's contained in the reports.

Fifty-three is information provided by Burlington.

MR. CARROLL: By or to Burlington?

MR. ALVIDREZ: It was provided by Burlington to us. I don't know the exact --

MR. CARROLL: Oh, okay, this consultant sent it to Bill, and Bill produced it?

MR. ALVIDREZ: I'm not sure the consultant sent it to Bill or whether -- Because it's on Meridian paper. But it obviously was a Burlington document.

MR. CARR: Yes, this is -- I have seen this, I don't know where it comes from, but I don't have an objection.

MR. CARROLL: We don't have any objection.

EXAMINER ASHLEY: Which exhibit is that?

MR. ALVIDREZ: This is PNM Exhibit Number 53.

EXAMINER ASHLEY: What about 52?

MR. CARROLL: No objection.

MR. CARR: No objection.

MR. CARROLL: Fifty-four was provided by Burlington?

MR. ALVIDREZ: -- by Burlington as well.

MR. CARROLL: No objection to that.

MR. CARR: No objection.

MR. ALVIDREZ: Perhaps we can recap where we're at in terms of the exhibits.

My understanding is, Exhibits 3 through 11 are admitted; is that --

EXAMINER ASHLEY: Yeah. What about Exhibit 2?

MR. ALVIDREZ: Two is the summary, and we haven't -- We've talked about it briefly. I'm not sure that everybody's had a chance to really look at it in detail.

Likewise Exhibits --

MR. CARROLL: No objection to 2. It's just a summary of what their position is and what they did, their version, so...

For what purpose is Exhibit 1 being offered?

MR. ALVIDREZ: Basically, it's the contract between Burlington and PNM, a contract that existed for a while between Burlington and PNM. I understand there's an

objection to it.

MR. CARROLL: Okay.

MR. ALVIDREZ: So we can talk about that later on.

MR. CARROLL: Do you have any objection to OCD Exhibits 1 and 2, which are just copies of Environmental Bureau files?

MR. ALVIDREZ: No objection.

MR. CARR: No objection.

MR. ALVIDREZ: I had gotten to 11 --

MR. CARROLL: Two through 11.

MR. OLSON: Two through 11, okay.

MR. ALVIDREZ: -- and then 13 through 23 --

MR. OLSON: Wait a second.

MR. ALVIDREZ: We'll get this all summarized. Thirteen through 23, 25, I believe, to 54, to the very end.

EXAMINER ASHLEY: Everybody agree to Exhibit Number 49?

MR. ALVIDREZ: Oh, I'm sorry, you're right, I'm not sure -- I thought we had it, actually.

EXAMINER ASHLEY: Mr. Carr, we're questioning 49.

MR. CARR: And I have no objection to 49.

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: And what about 50?

MR. CARR: And I have no objection to 50.

MR. CARROLL: No objection.

MR. ALVIDREZ: I think everything's in but 1 and 2, and we haven't offered 12 or 24.

MR. CARROLL: And you're not going to?

MR. ALVIDREZ: Perhaps only as rebuttal.

Number 2 we will offer; 12 and 24 we probably won't.

EXAMINER ASHLEY: And there were objections to Exhibit 2?

MR. CARROLL: One.

MR. CARR: No, 1.

EXAMINER ASHLEY: Exhibit 1.

MR. ALVIDREZ: Any objections to 2?

MR. CARR: No.

MR. ALVIDREZ: No objections to 2.

MR. CARROLL: We're just going to pass out the OCD exhibits.

MR. ALVIDREZ: I've got my copies.

MR. CARROLL: Bill, those are just copies.

Do you already have one?

MR. ALVIDREZ: You handed me some copies, I believe --

MR. CARROLL: Okay.

MR. ALVIDREZ: -- and I've got them over here.

EXAMINER ASHLEY: One thing I wanted to say about

the exhibits is, we'll -- they will be admissible, but I will take official notice of being admitted as evidence once they're presented to the case.

MR. CARR: Rand, do you have recent correspondence between counsel in this file?

MR. CARROLL: We should. Anything that was copied to the OCD is in that.

MR. CARR: What I'm looking for is that letter, which is a letter that stated the objections to the remediation.

MR. CARROLL: That is in the case file, rather than the Environmental Bureau file.

MR. CARR: And so that is not --

MR. CARROLL: This isn't chronological, then --

EXAMINER ASHLEY: Let's not forget we're on the record. Go slow and speak loudly.

MR. CARROLL: No, that's not in the OCD exhibit. It's in the case file.

MR. CARR: There are three exhibits that I believe we'll want to introduce, and they are the document entitled "Hampton 4M Synopsis", which will be marked as Exhibit 1, and it is a document that was produced to us by PNM, and it is a document that was transmitted to experts when they were retained, and it's just a background statement. And we would want to admit that as Burlington

Exhibit 1, and I will mark copies during the noon hour.

MR. ALVIDREZ: We have no objection.

MR. CARR: There is also a letter that I'm having copied right now that I can provide in a moment, but it is a letter from Ed Hasely of Burlington to Ms. Gannon of PNM, and it is a letter that was a rejection by PNM of a settlement discussion concerning how they would jointly undertake some recent investigation pursuant to the directive of the OCD.

Again, it's being copied. As soon as it's back in I'll give you a copy. But it is a letter from Burlington to PNM.

And attached to that fax sheet and a draft of an agreement as to how this remediation will be undertaken between the parties.

So it's a draft of an agreement, a fax from PNM to Burlington, and Burlington's rejection. And I'll have copies of those just as soon as we get them back.

MR. ALVIDREZ: I'll need to see that.

MR. CARR: Sure, sure.

MR. ALVIDREZ: And we will object.

MR. CARR: And then the last thing that I understand is in the case file but not in the environmental file is a letter dated November 4 from Mr. Alvidrez to Mr. Carroll, and this is the letter that summarizes the

objections that PNM has to remediation that's ongoing out at the site. I'm not certain I'm going to use it, but I would like to admit it, because it may be important if that becomes part of this case, that we have that.

So that's -- Burlington -- I would mark that one Burlington Exhibit Number 2, which will be the November 4 letter.

The Burlington Exhibit Number 3 is a letter dated October 2nd from Ed Hasely to Mrs. Gannon -- Ms. Gannon. And attached --

EXAMINER ASHLEY: Could we stick to the exhibit numbers?

MR. CARR: I'm sorry --

EXAMINER ASHLEY: Okay.

MR. CARR: -- Burlington 3 will be the October 2nd, 1998, letter from Mr. Hasely to Ms. Gannon.

Behind that is a fax to her from Mr. Hasely. Behind that is a fax to Mr. Hasely from Ms. Gannon. And a proposal is attached to that, that was faxed to Burlington. It is a draft. It was never finalized because it was rejected

MR. ALVIDREZ: I would object to Exhibit 3.

MR. CARR: On what basis?

MR. ALVIDREZ: On the basis that it reflects discussions of attorney settlement.

MR. CARR: Well, then, we will move its admission at a later date.

MR. ALVIDREZ: Okay.

EXAMINER ASHLEY: Mr. Carr?

MR. CARR: Yes, sir?

EXAMINER ASHLEY: Did you switch the exhibit numbers on here?

MR. CARR: I may have, because I was working with our copies. Exhibit Number 1 would be the Hampton 4M synopsis.

EXAMINER ASHLEY: Okay.

MR. CARR: Burlington Exhibit Number 2 is the November 4, 1998, letter to Mr. Carroll.

And Exhibit Number 3, if we need it we will offer it this afternoon. It's the letter.

EXAMINER ASHLEY: Okay.

MR. CARR: That's it.

EXAMINER ASHLEY: Exhibit 2 is being copied, and you will have that?

MR. ALVIDREZ: Yes, I have a copy here he's welcome to --

EXAMINER ASHLEY: Okay.

MR. ALVIDREZ: -- copy, in my file.

EXAMINER ASHLEY: Okay.

MR. CARR: And we have no objection to Burlington

Exhibit 2.

EXAMINER ASHLEY: Okay.

MR. CARR: So 1 and 2 will be admitted, 3 will be reserved for later, and we will mark these Exhibits 1 and 2 during the noon hour and have copies for everyone.

EXAMINER ASHLEY: Okay. Do either one of you have objections to the OCD exhibits?

MR. CARR: No --

MR. ALVIDREZ: No.

MR. CARR: -- I do not.

EXAMINER ASHLEY: Okay. Any other --

MR. CARR: No.

EXAMINER ASHLEY: -- business?

MR. ALVIDREZ: I believe that's all.

EXAMINER ASHLEY: Okay, then I guess we'll go off the record and be back here at one o'clock.

MR. CARR: Yes, sir.

MR. ALVIDREZ: Thanks very much for your cooperation.

(Thereupon, a recess was taken at 11: 25 a.m.)

(The following proceedings had at 1:02 p.m.)

EXAMINER ASHLEY: Okay, this hearing will now come to order, and the Division calls Case 12,033.

MS. HUNTZINGER: Application of Public Service Company of New Mexico for review of Oil Conservation

Division directive dated March 13, 1998, directing Applicant to perform additional remediation for hydrocarbon contamination, San Juan County, New Mexico.

EXAMINER ASHLEY: And before we get started, I want both parties to have an opening statement, and limit it to about 15 minutes, if you can. And in that statement I would like you to summarize what the issues really are and why you're here.

And with that, I want to call --

(Off the record)

EXAMINER ASHLEY: Okay, so at this time let's call for appearances.

MR. ALVIDREZ: Richard Alvidrez on behalf of Public Service Company of New Mexico.

EXAMINER ASHLEY: Okay. And how many witnesses do you have?

MR. ALVIDREZ: We have five witnesses. And their order will be: Toni Ristau, Maureen Gannon, Mark Sikelianos, Valda Terauds -- I know these are all very easy names to spell -- and Rodney Heath.

EXAMINER ASHLEY: Any additional appearances?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan. Appearing with me today is Paul R. Owen of our office. We represent Burlington Resources Oil

and Gas Company, and we have two witnesses, Mr. Ed Hasely and Mr. Paul Rosasco, R-o-s-a-s-c-o.

EXAMINER ASHLEY: Any other appearances?

MR. CARROLL: May it please the Examiner, my name is Rand Carroll, appearing on behalf of the New Mexico Oil Conservation Division, and I have two possible witnesses that I ask to be sworn at this time, Mr. Bill Olson and Mr. Roger Anderson.

EXAMINER ASHLEY: Okay. Mr. Alvidrez?

MR. ALVIDREZ: Yes, thank you very much, Mr. Hearing Examiner.

We're here today on an Application of appeal by Public Service Company of New Mexico in connection with a letter ruling and final determination issued by the OCD, which is Exhibit 39 in the exhibits provided by PNM -- it's a letter dated March 13, 1998 -- basically directing Public Service Company of New Mexico to undertake certain remediation action out at the Hampton 4M well site.

And PNM is appealing this determination on a number of grounds, which are set forth in our Application.

But very briefly, we believe that the data that's been developed at this particular site from the extensive investigatory work that's been done to date clearly demonstrates that the free product, which is the issue -- or the constituents primarily at issue in this case, did

not originate under PNM's former equipment.

PNM had on this site a couple of dehydrators, which it used for purposes of purging moisture, water content, from the gas that was being purchased from Burlington and its predecessors, and there was an unlined pit which was previously located at this site, where the dehydrators made -- to which the dehydrators made discharge.

And the data suggest and clearly show that the free product which underlies this equipment in a former pit actually originated upstream. And upstream we have fairly significant operations by Burlington Resources. And what we have are a former unlined pit, at least one up there. There are two separator units. There were some tanks, and continues to remain, tanks on location for product, and quite a lot of activity which occurred on the upgradient slope of this particular well pad.

We think that the data clearly show that the surface area or the ground -- the soil under our former pit location, clearly indicates that the free product could not have originated at that location.

Basically what we have is a situation where because of groundwater gradient flow and because of the subsurface strata, that free product has flowed from upgradient, from the area where Burlington's operations

are, to under our site. There is not a clear trail, if you will, between the former PNM pit, which is the only possible source with regard to PNM's operations, and the free product that's located there.

We think there are also legal issues which are before the Division with respect to the ownership of the product. Product -- The purchase that PNM has arranged for, and its predecessor when it was called Gas Company of New Mexico, arranged for, was for the purchase of natural gas. It did not purchase free product or gasoline. And clearly this is material -- This is a substance that PNM does not own, had -- claims no ownership interest in, and has no control over. It is the property of the producer.

And we think by clear implication the responsibility for any contamination resulting from the free product underneath the site is also the responsibility of the producer.

With regard to issues of apportionment, the OCD has been reluctant, we're informed, to apportion liability, if you will, at sites. But we think the evidence is clear that if there was any contribution by PNM to free product -- and we clearly think there was not -- but if there was, the maximum amount that could have been contributed by PNM is very, very small. And that PNM through its recovery activities that have been conducted to

date have remediated any of the free product that it could possibly be responsible for, and therefore it should be relieved of all further obligations with respect to the cleanup of free product at this site.

What we are asking the Division to do is to relieve PNM from the final order requiring PNM to take further remedial action at this site, to make a determination as to the responsible party at this site, or at least make a determination that PNM is not the responsible party at this site.

Alternatively, if the Division finds that PNM contributed in any way to the contamination, then we would request an allocation, or a partition, if you will, with regard to the relative amounts that PNM could have possibly contributed.

But clearly our primary position is that this product did not originate at our site. We don't own it, never have owned it, didn't have any control over its production, and therefore should not be held responsible at all for its presence at this site.

EXAMINER ASHLEY: Mr. Carr?

MR. CARR: I'd like to move this back just a couple of inches.

May it please the Examiner, Burlington Resources Oil and Gas Company appears here today in opposition to the

Application of PNM.

As Mr. Alvidrez has indicated, PNM seeks a determination that it is not responsible for contamination or for further cleanup at the Hampton 4M well site. And in so doing, they seek a precedent which they can use in other circumstances to relieve themselves of remediation at other sites and other locations where free product has been discharged into open pits and discharged onto the ground.

The evidence in this case will show that the Hampton 4M well was drilled in the mid-1980s and that since that time, gas from the well has been sold to PNM and its predecessors, at least initially, until 1995, when the PNM facilities were sold to Williams.

PNM owned and operated a dehydrator and an unlined surface pit on the site, and for over ten years the gas stream ran through the dehydrator, liquids were extracted, liquids which included water and hydrocarbons, and these substances were discharged into an unlined earthen pit.

In 1996, contamination was discovered at the site.

I'd like to make it very clear at this point that Burlington is here, Burlington recognizes it is a responsible party, and it is not here in an effort to avoid any of its responsibilities for the remediation of this

site.

But the evidence will show that PNM is also a responsible person. And after the hydrocarbon contamination was discovered, remediation was initiated by PNM, by Burlington, and it was a cooperative effort, as it had been in other similar situations in the Basin. And it involved excavation into pits, monitoring, sampling, free-product recovery. But the bottom line was, remediation was simply getting nowhere.

And there was a residence 1000 feet from this site.

So in March of this year the OCD wrote to PNM and said additional remedial action is required. And as we know, PNM's response was this appeal, a request for a stay, and instead of removing any of the source they continue to sample and recover free product.

While we've been waiting to get to you, there have been simply delays in getting necessary remediation underway, and we submit that PNM did not comply with OCD directives, that they have ignored requests from Burlington to remediate the site, and they now have been complaining at the methods to remediate the site employed by Burlington.

And now they come before you, and they're asking for what is, in essence, a home-free card. They're asking

you to say they have to do no more.

You asked a few minutes ago for us to define for you what the issues are that you are going to be asked to decide, and I submit to you the issues are narrow. It's very simple. You look at the definition of "responsible person" in the OCD Rules, and you need to determine if PNM owned the dehydrator and the pit, and I submit to you there will be no dispute on that.

And the second part of that definition is whether or not PNM should complete the Division-approved corrective action for pollution from discharges into this pit. Should they do what they've been told to do?

And we believe when the evidence is in, you will see that they at this point in time, must 'fess up to the fact that they are partially responsible, that they are, in fact, a responsible person.

When you look at the evidence, it's also going to show that this is not a situation that will result in precedents being set. They have atypical contamination issues at this site, and the remediation which is now ongoing and which has been required is specific to this site. It requires source removal and a cleanup that addresses the plume that's been moving down the canyon toward the offset private property owners and their water well.

And so at the end of the hearing we will ask you to deny the Application of PNM, to find, in fact, that they are a responsible party, and to note that it is the responsibility of those parties who have contaminated a site to go forward and remediate the contamination based on site-specific conditions.

This is not a case about whether or not Burlington is a responsible party. It is *a* responsible party, one of the responsible parties.

This is not a question about the contractual relationships between the parties.

This is not a -- does not raise a question for you about the apportionment of damages between the parties.

You are asked to do one thing: Decide if, on these facts and at this site, PNM can be excused from the consequences of disposing and placing in an unlined pit hydrocarbons.

And we will submit that it is not a question of ownership, it's a question of control and management of contaminants, potential contaminants, by the parties.

EXAMINER ASHLEY: Mr. Carroll?

MR. CARROLL: May it please the Examiner, the Division in this case has but one goal, and that goal is to get this site cleaned up. We have an expert in house. Mr. Bill Olson is a hydrologist who became aware of this

situation in early 1997. At that time his preliminary investigation showed to him that two parties were responsible for the contamination of this site: Burlington, the operator of the well at this site, and PNM that formerly operated a dehydrator at this site.

Mr. Olson has been continually monitoring the cleanup at the site, and in August, 1997, directed PNM to perform work, and followed up with a March, 1998, letter directing PNM to perform additional work.

PNM has balked at performing the work that Mr. Olson directed them to, and filed this Application to have the Examiner review Mr. Olson's directive.

The Division believes that Burlington is definitely a responsible party, which they admit, and also believes that PNM is another responsible party.

For that reason, the Division will ask the Examiner to deny PNM's Application and issue an order holding that PNM is a responsible party, because PNM was the operator of the dehydrator from which contamination spread onto this site.

And if the Examiner finds that the contamination resulted from PNM's operators of that dehydrator, that the Examiner hold PNM as a responsible party.

This apportionment of liability between the parties, we think, is not for the Division to decide or for

the Examiner to decide.

Since the site is being cleaned up, we believe it would bog down the Division to apportion liability, and the Division, we believe, is without jurisdiction to order one party to pay costs to another party. The Division's only goal is to get this site cleaned up, and that is being done by one of the responsible parties, and we ask that the other responsible party not be, so to speak, let off the hook.

EXAMINER ASHLEY: Okay, thank you.

(Thereupon, the witnesses were sworn.)

EXAMINER ASHLEY: Mr. Alvidrez?

MR. ALVIDREZ: Mr. Hearing Officer, I'd like to call my first witness, Toni Ristau.

TONI K. RISTAU,

the witness herein, after having been first duly sworn upon her oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ALVIDREZ:

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

A. My name is Toni K. Ristau.

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

A. I'm employed by PNM in Albuquerque, New Mexico.

Q. And what is your position with PNM?

A. I'm Director of Environmental Services.

Q. And as Director of Environmental Services, can you tell us what your duties are?

A. Basically, I supervise the work of our environmental group on a broader basis, but I also participate in the strategies, really, on our environmental issues. PNM is very active on both the remediation and compliance front, and I basically work with our people -- we're a team -- on putting together our strategies and making sure that we meet all requirements and have the best possible approach from an environmental and compliance point of view.

Q. I'd like to talk a little bit about your education. Tell us, beginning with college, what your education is.

A. Yes, I have a bachelor of arts from the University of Minnesota in architecture, with an emphasis in historic preservation, granted in 1971. I have a master's of science in environmental health engineering from Northwestern University, granted in 1979. I have a juris doctorate degree from University of Denver Law School, granted in 1984.

Q. I'd like to talk a little bit about your background in the environmental area. Can you please tell us what experience you've had with respect to environmental

investigation and remediation?

A. I have at this point about 13 years of experience specifically in remediation and environmental-contamination issues. Beginning, I suppose, with my tour of duty, I was director of the CERCLA Bureau for the Utah Department of Health, a state agency, and we worked mainly with Superfund sites, usually with groundwater issues.

Following that, I worked for an architectural engineering consulting firm doing remediation, again and emphasizing groundwater remediation at Department of Defense sites, including Rocky Mountain Arsenal in Denver, Colorado, Dugway Proving Ground in Utah, and several Army depots located across the country. Also have RCRA permitting experience.

Following that, I worked for a consulting company in Albuquerque, New Mexico. I was the southwest regional director, GCL, again emphasizing remediation particularly related to groundwater issues.

I worked for a small consulting company in Denver, Aegis Environmental, again working mainly Rocky Mountain Arsenal and Dugway Proving Ground, groundwater remediation issues.

Then I, about five years ago, accepted employment with PNM as their Director of Environmental Services, basically managing their environmental programs overall,

including remediation.

Q. Have you had any experience with regard to remediation activities, oil-related endeavors?

A. Yes, I have, both as a consultant and since I've worked at PNM. My main involvement since PNM has been with the OCD-related pit remediation, a little underground-storage-tank-related stuff, which is still petroleum substances.

The PNM pit remediation program has been ongoing since OCD Order R-7940-C was issued. I believe it was early in 1993, was it? I came to PNM late in 1993, and my involvement in those particular issues started then.

Q. Can you tell me what involvement, if any, you've had with regard to WQCC abatement regulations?

A. Yes, I provided testimony and worked on some of the regulatory drafting comments to the regulations and so forth. This is the WQCC groundwater abatement regulations.

Q. And what about your involvement with OCC abatement regulations?

A. I was on the OCC rulemaking committee, again helping draft and formulate the OCC abatement regulations, which are modeled on the WQCC abatement regulations.

Q. Have you testified before the OCC previously?

A. Yes, I have.

Q. And in what capacity?

A. I have provided informal testimony or comments on hearings on a couple of occasions, and I believe it was formal testimony related to the OCC abatement regs, when those were enacted.

MR. ALVIDREZ: I'd like to tender Ms. Ristau as an expert on groundwater remediation issues.

EXAMINER ASHLEY: Ms. Ristau is so qualified.

Q. (By Mr. Alvidrez) Ms. Ristau, can you tell me what your responsibilities have been with respect to the Hampton 4M site?

A. Yes, the Hampton 4M site is one of our groundwater sites. Let me interject that thus far we've remediated about 1000 pits in the San Juan Basin. We have about 30 groundwater sites.

The Hampton 4M is atypical in that it's the only -- And all of our sites are related to discharges from dehydrators. The Hampton 4M is the only one where we've seen the free-product situation that we have, that's the subject of this hearing today.

Q. You talked about 30 other groundwater sites. And when you say "groundwater sites", what are we talking about?

A. These are sites that have been impacted by hydrocarbon discharges into pits, dehydrator pits, and in a couple of instances they also include line drips.

Q. All right, but what is the impact at those sites with regard to groundwater?

A. It has been dissolved hydrocarbons only.

Q. And what situation do we have at the Hampton 4M site?

A. At the Hampton 4M site, I won't go into all of the particulars because there are other technical witnesses who will provide that, but we had between four and five feet of free product detected on the groundwater when we remediated our pit.

We did not discover any groundwater contamination that we remediated our pit. But under a directive from OCD when we did vertical profiling following remediation, the free product and the groundwater contamination was discovered.

Q. Can you tell me what the difference between free product, as you've described it, and dissolved phase hydrocarbons are?

A. Well, the free product basically is not immersed with or mixed in with the groundwater. It's, in effect, floating as the layer on top of the groundwater. The dissolved phase is relatively small concentrations of hydrocarbons that are actually a part of and moving with the groundwater.

Q. You talked about PNM having remediated

approximately 1000 unlined pits at this point. What do you typically encounter at the vast majority of those sites, in terms of contamination?

A. Well, you can see by the ratios we've remediated 1000 or so pits, and we've detected some sort of groundwater contamination or involvement at 30 pits. That turns out to be what? About three-tenths of a percent, do we see any groundwater impacts at all.

And of those, this magnitude of free product, the Hampton 4M, is the only.

Q. PNM is here as a result of an appeal of a directive, which is contained in PNM Exhibit 39, and I'd like you just to refer to that if you would.

A. Bear with me a minute while I get to it. Yes, sir.

Q. Okay, do you recognize that exhibit?

A. Yes, it's the letter dated March 13th, 1998, that's previously been referred to.

Q. And can you tell me why PNM decided to appeal this determination?

A. Well, we have a very strong policy of complying with OCD orders and, in fact, doing what we think is best to achieve a maximum result for the environment as quickly as possible.

With the situation here at the Hampton 4M, as we

got into this it became increasingly apparent to us that there was an upgradient source of free product, and we, according to our remediation plan, were removing free product. We had, in fact, until our remediation well was removed by Burlington a week or so ago, removed over 1000 gallons of free product at this site.

It became apparent to us that the only way to effectively deal with this site was to deal with the release point for this hydrocarbon contamination. And since our equipment and our pit was not the release point, we were not going to be able to continue or effectively address remediation unless and until that source of free product, that release point for free product, could be determined and cut off.

Q. During the opening statement, it was said that PNM balked at performing remediation at this site. Would you agree with that characterization?

A. No, I wouldn't. I would consider working on the site for over two years and removing over 1000 gallons of free product, in addition to vertical profiling, installing several downgradient wells and continuing to puzzle on this to see if we could come up with a solution for this site does not constitute "balking" at complying with the OCD's directives.

Q. With regard to this appeal, was there any

guidance or suggestion offered by the OCD about whether -- if PNM was dissatisfied with this particular ruling, whether PNM should take some action with regard to that ruling?

A. Yes, we did have some discussions with the OCD, and it was suggested, not mandated, that we could consider the letter of March 13th a final order from which an appeal could be taken. And since we were not getting any cooperation from Burlington in determining where the release point for the free product could be, and since we were ordered by OCD to proceed, we figured we were basically at a point where we couldn't proceed until we got some sort of determination on how to proceed. We had basically done all we could do at that point.

Q. At this March 13th time frame, as I understand it, PNM was actually performing remediation, active remediation; is that correct?

A. Yes, that active remediation continued until about a week and a half ago when Burlington removed our recovery well.

Q. That's the point I wanted to get to.

A. Yes.

Q. Even after PNM filed its appeal, did PNM continue active remediation at this site?

A. Yes, we did.

Q. And why is it that PNM has stopped performing active remediation at this site?

A. Well, as we've just mentioned, Burlington removed our free-product recovery well. The pump was pulled and taken away without our knowledge, and so basically we're out of business. The well has now been completely removed, and the site has been scraped to a level below where the well was.

Q. I wanted to ask, by way of background, how is it that PNM came to be at this site?

A. Well, as a result of the sale of the gas assets to Williams Field Services, now just Williams, which closed June 30th, 1995, as a part of the deal we agreed to retain liability for certain environmental aspects. One of those was, indeed, the remediation of the pits.

Q. I really wanted to step back to even before that time --

A. Okay.

Q. -- really. How did PNM come to have any equipment placed at this site in the first place --

A. Oh, you --

Q. -- that type --

A. The well field, as opposed to the remediation equipment?

Q. Exactly.

A. Okay. Again, I am not the expert on oilfield operations, and we will have another witness that will speak to that in more detail, but PNM has been, and its predecessors have been, as near as we can determine, the buyers of the gas at this site, essentially since this well was completed and put on line.

Since PNM has a duty to serve as a public utility, we have to have gas that is free of deleterious liquids so that we won't have operational difficulties. We have an absolute obligation to serve. Therefore, in order to protect our system and to make sure that operations would continue during the time of year when gas was most crucial to our customers, PNM installed dehydration equipment ahead of the meter at this site.

Q. Okay. Do you know how long PNM has been in the gas-utility business?

A. PNM itself?

Q. Yes.

A. Since 1985, I believe, when they purchased what is now gas services operations from Southern Union Company.

Q. You talked about PNM's purchases. What is the product that PNM, the gas utility, purchases at this site, or purchased at this site?

A. We purchased natural gas free of deleterious liquids or commercially free of liquids, or sometimes

there's a gas-quality spec. But the point is that we purchased the natural gas, not the liquids.

Q. Was PNM in the business of purchasing free product?

A. Not to my knowledge, no.

Q. Do you know at what point title to the natural gas passes to PNM?

A. My understanding is that's at the meter orifice, downstream of the dehydrator, upstream of the gathering system.

Q. Okay. Do you have an understanding as to who it is that claims ownership of free-product hydrocarbons with regard to production facilities where a gas company is purchasing natural gas?

A. Yes, my understanding is that the producer on the site is the one who claims ownership of those fluids.

Q. Has PNM ever claimed any ownership in the free product at the Hampton 4M site?

A. Not to my knowledge, no. In fact, the free product that we were recovering through our recovery well was piped back to Burlington, and they took it, or given back to Burlington, and they took it.

Q. You talked very briefly about a sale of certain assets to Williams, and I wanted to get a little bit more detail on the record about that sale.

A. Sure.

Q. Can you tell me when that occurred and --

A. Do you want a brief synopsis --

Q. Exactly.

A. -- of what occurred?

Q. Right.

A. Gas Company of New Mexico and Sun Terra Gas Gathering and Processing sold their gas-gathering and processing assets to Williams. The offer for sale occurred, I believe, sometime in 1993. It was about the time that I started working at PNM. And the sale was closed June 30th, 1995.

PNM did not retain any of the wellhead or gathering assets at all. Those were all sold to Williams.

Q. You talked about a contractual arrangement with regard to remediation or cleanup of contamination. Can you tell us a bit about that?

A. Yes, as between us and Williams, as a part of the sale of the gas assets, there was considerable negotiation during that sale process, and PNM agreed to retain or indemnify, one or the other, Williams against certain environmental problems.

One of the problems, potential problems, that was identified before the sale, since the OCD Order R-7940-C had gone into effect before the sale, was the potential for

remediation of the wellhead pits. And PNM, as part of the contractual arrangement with Williams, agreed to retain remediation of any contamination to the pits that occurred before June 30th, 1995.

Q. Was this agreement to provide indemnification without regard to whether PNM was responsible in some way for the contamination in the first place?

A. As between us and Williams, it was without regard to who caused the contamination except for the time cutoff. Basically what PNM agreed to do was to take care of anything that occurred on PNM's watch, and then Williams would be responsible for anything that occurred after June 30th, 1995.

In other words, we did not indemnify them for continuing compliance, just anything that might allegedly have been related to our past operations.

Q. What I was trying to get at, though, if there were an unrelated third party that caused the contamination, if PNM agreed to provide indemnity under those circumstances?

A. No, we did not. We agreed only to be responsible for problems that we may have caused through our prior operations.

Q. You talked about PNM having remediated some thousand pits or closed some thousand pits. Is this

pursuant to some sort of plan or order?

A. Yes, actually there's more than one, depending on the geographic location.

Q. Can you tell us about those orders or plans?

A. Yes, the portion of the pit soils remediation only, in this case, that are located in geographic areas where they're under OCD jurisdiction, is done pursuant to a work plan we submitted under the provisions of R-7940-C, the OCD order.

For other pits, the big push this year has been to remediate pits on Jicarilla lands, because they have an absolute regulatory deadline. Those are done under a similar work plan, but it was submitted to the Jicarilla Tribal Environmental Protection Office for approval, rather than OCD.

In the case of groundwater on both Jicarilla and OCD areas, we are proceeding under a groundwater management plan that has been approved by the OCD.

Q. Is there any type of relative priority given to particular sites?

A. Under the OCD order, it set up a three-tier -- Well, actually, the OCD order explicitly addresses cessation of discharge to unlined surface impoundments only. But the guidance under the order also establishes that one should submit a remediation or a cleanup closure

plan.

The OCD had a three-tiered cessation of discharge approach: vulnerable, expanded vulnerable and extended vulnerable areas. And the requirements for cessation of discharge the time frame triggers were different, depending on which vulnerable area.

Also, the cleanup guidelines differ, depending on the geographic location as well, for soils cleanup.

Otherwise, the work plan itself is really indifferent to which vulnerable area that pit might lie in.

Q. Do you know where the Hampton 4M site falls?

A. Well, our friends at the OCD have told us that once you discover groundwater, it's in the vulnerable area. But it was actually borderline whether it was even within a vulnerable area at all. If it was within a vulnerable area, it would have been the extended vulnerable area.

Q. With regard to -- We talked about cessation of discharge, we talked about pit closure a bit. Can you distinguish the two?

A. Well, as a practical matter, until you cease discharging to a pit, you cannot effectively remediate it, because you may remediate and then immediately recontaminate the pit.

Depending on the vulnerable area time-frame trigger, sometimes cessation of discharge was accomplished

some distance in time before the actual remediation, depending on the vulnerable-area designation, and sometimes cease-discharge occurred just shortly before actual remediation was initiated. My understanding is, that was the case at the Hampton 4M.

Q. Is there any requirement under PNM's pit-closure plan that PNM proceed with cleanup, regardless of the source of that cleanup -- I'm sorry, the source of the contamination?

A. If we find contamination in a pit, soil contamination, at that point we do not split hairs. We clean up the pit.

Groundwater contamination is generally the same, unless we have come to the conclusion that we cannot effectively address or control the source of groundwater contamination because we are not the source in the sense that it's not our material or our discharge that has caused the problem.

This is particularly true where you have sites where there's more than one potential release point for contamination. And it's also true if you have the potential for a continuing release at this site, which we think is the situation at the Hampton 4M.

Q. With regards to the Hampton 4M well site, do you have an understanding as to the current ownership of the

well?

A. Again, without getting into the intricacies of working interests and so forth, we understand that Burlington is the operator, and then I suppose in that sense the owner of the well. And prior to that it was owned by -- or operated -- and/or operated by Burlington's predecessors.

Q. What equipment at this site, if any, has PNM ever owned or operated?

A. Wellhead equipment, you mean?

Q. Surface equipment.

A. Surface equipment? The dehydrators. There was previously two dehydrators at the site, because it was previously a dual-completion well. It was commingled sometime within the last year and a half or so, and there is only one dehydrator remaining at the site.

Q. Okay. What I'd like you to do next, Ms. Ristau, is kind of set the stage for us in terms of the Hampton 4M site. Have you been out there and viewed the site yourself?

A. Yes, I have.

Q. Okay, we have some exhibits that we've brought, and with the Hearing Examiner's permission, perhaps you can go over and describe the site layout in the exhibits we're talking about, and let's start with Exhibit 4, which is the

aerial photograph.

A. The aerial photograph?

(Off the record)

THE WITNESS: Okay now, can everybody who needs to see, see?

MR. ALVIDREZ: I think so. The important people are the Hearing Examiner.

THE WITNESS: This is an aerial photograph, or basically a blow-up of an aerial photograph, taken at the Hampton 4M site.

This is north, as you might expect.

The Hampton 4M well pad is cut and fill in a fairly significant arroyo wash area. This is seriously downhill towards the north and the northwest.

Groundwater flow, from what we've been able to determine, pretty much follows the surface geology.

Burlington's operations are in this area on the site.

EXAMINER ASHLEY: Excuse me, Ms. Ristau, could you go into a little more detail about what you're actually pointing at, like where Burlington's area is to the south, or the directions?

THE WITNESS: Right, Burlington's area is to the south, I'm sorry.

EXAMINER ASHLEY: Okay.

THE WITNESS: And the gas well is a little south of the central portion of the well pad. PNM's former operations and Williams' current operations are on the northern end of the pad. Therefore, Burlington's operations tankage and gas well itself are upgradient of the former PNM and current Williams operations on this site.

Q. (By Mr. Alvidrez) So this exhibit places things in context. I think we have some other exhibits which are a little more detailed with regard to the well pad site. Perhaps we can go on to Exhibit 5.

A. All right.

Q. Let's go to Exhibit --

A. This is one is 4.

Q. Okay, I'm sorry, let's go to Exhibit 5.

A. This is a blowup from the aerial that you just saw. Again, this is north. Groundwater flow and surface water flow is north northwest, essentially, off the well pad.

Q. Okay. So we can place this in context, can you tell us what this exhibit is supposed to represent in terms of the timing, when the --

A. Yes.

Q. -- the layout of this property --

A. Excuse me. Yes, this is before the well was

commingled, when it was still a dual completion well. That's important because there is more equipment and more tankage on the site prior to commingling, and more potential sources.

And Burlington's operations in the southern part of the site, the gas well itself is in the central -- south central portion of the well pad. PNM's former operations and Williams' current operations are up in this northern portion of the site.

On the specific items here, would it be better to let the technical witnesses do that?

Q. I think so.

A. They have more familiarity.

Q. I think so. I think it would be helpful to show the area where PNM's former unlined pit was.

A. All right. PNM's former unlined pit is off over in this area. The cease-discharge tank is over -- off over to the north of the dehydrators that are located on the northern end of the well pad. The pit was here, furthest north on the well pad, furthest downgradient.

The current discharge -- cease-discharge tank, is located here on the northern end of the pad, to the west of the dehydrator that's currently located there. And the dehydrator does discharge -- Williams' dehydrator does discharge into this tank.

On Burlington's end, their cease-discharge tank is located to the north of their separators -- or excuse me, to the south of their separators, furthest upgradient. Their product tank is to the west of their separators, again on the southern end of the well pad.

Their excavation, which has remained open now for several months, is on the southern portion, southeastern portion of the well pad. Their former tankage, when it was a dual-completion well, was located somewhere over in this vicinity. There's no surface indication of where exactly it was. Burlington had another old pit somewhere up in this vicinity, near as we can tell from looking at the old diagrams and information about this site.

Q. There's a reference to a hydrocarbon seep. Can you tell us what that is?

A. Yes, the hydrocarbon seep is off the toe of the well pad up in this area. Again, we've got initially about five feet of free product up in this portion of the well pad, underneath the well pad.

Q. And for the record, that's in the area of what's depicted as MW-6 and MW-2?

A. Right. MW-6 was our former recovery, and the hydrocarbon seep is to the north and west of the toe of the well pad, above where the highest level of free product on the groundwater was discovered.

Q. When you talk about a recovery well, what are you talking about?

A. We have a -- had a small well that was a four-inch well, I believe, where we had a product-recovery pump. It was a nitrogen-charged pump, and it would cycle and pump free product to a barrel, which was then recovered by Burlington and taken to wherever they take free product.

Q. Was that part of the remediation process?

A. Yes, this was, again, a recovery well for the free product.

MW-2, which is quite close, was a monitoring well, a two-inch monitoring well.

Q. Now, what is your understanding of how the OCD allocated responsibility at this site as between PNM and Burlington?

A. OCD drew a line in the sand somewhere upgradient of our equipment and said everything downgradient of that line or north of that line was ours, and everything upgradient of that was Burlington's.

Q. What's your understanding of the basis for that determination?

A. My understanding of the basis was, it was basically arbitrary, trying to sort out who did what, when, because this was a determination that was made fairly early on when we weren't sure what was happening at this site.

Q. Can we bring up the other --

A. This one?

Q. -- photograph? I believe that's Exhibit 5 -- or 4.

A. This one is indeed Exhibit 4, I believe.

Q. Exhibit 4. Can you tell us what Exhibit 4 depicts?

A. Again, the main differences here are the piping and so forth that's shown as really an overlay on this, is after the well has been commingled, so this is basically the current flow of piping and so forth that carries either fluids or natural gas.

Natural gas well is here, again near the center of the well pad. The gas and liquids come from the well and go south to Burlington's separator. The separator separates, and the recoverable product then goes west to Burlington's product tank, and their separator discharges go, again, south into their cease-discharge tank.

Then once the gas comes through the separator, it goes north to PNM's former dehydrator, now Williams' dehydrator, where any additional dehydration to take any additional water out of the gas is accomplished. Again, the water with trace amounts of hydrocarbons go to the cease-discharge tank. The dehydrator is on the northern end of the well pad, and the cease -- current cease-

discharge tank is slightly to the west of the dehydrator.

Then the gas goes from -- The dehydrated gas goes to the east, out of the dehydrator into the meter. The meter house is slightly to the east and south of where the dehydrator is. At that point, Williams accepts ownership, and that's also where PNM previously accepted ownership of the gas into the gathering system where it's taken and further processed and transmitted or distributed to customers.

Q. Okay, if you'll take your seat I think I'm done with those exhibits.

I want to ask you to identify for us what we've marked as Exhibit 1.

A. Exhibit 1, just a moment. Yes, Exhibit 1 is entitled "Gas Purchase Agreement between Southland Royalty and Gas Company of New Mexico".

Q. And what relationship is Gas Company of New Mexico to PNM Gas Services, what is now PNM Gas Services?

A. It would be a predecessor to PNM Gas Services.

Q. Was there actually any type of change in terms of corporate structure, or is it simply a name change?

A. It's simply a name change.

Q. Is this a true and correct copy of the gas purchase agreement between Southland Royalty and Gas Company of New Mexico?

A. I believe so, yes.

Q. And is this the contract which relates to gas purchases, or which related to gas purchases by PNM from the Hampton 4M well?

A. Yes, it is.

MR. ALVIDREZ: I'd like to move the admission of Exhibit 1.

MR. CARR: May it please the Examiner, we would object to the admission of Exhibit on the grounds that it's irrelevant. The question here is whether or not there was a facility that was owned by PNM, whether or not they should be required to comply with the OCD's orders concerning additional remediation. The contract is an agreement between the parties, it is irrelevant to the determination before you.

EXAMINER ASHLEY: Mr. Carroll?

MR. CARROLL: Mr. Examiner, I have one question to ask of Mr. Alvidrez. For what purpose is this contract being offered?

MR. ALVIDREZ: Basically, this contract addresses the specifications of the gas with regard to purchases made by PNM and what condition or standards that gas was supposed to meet, including the fact that the gas is to be free of objectionable liquids.

MR. CARROLL: And is this -- I can ask this of

Ms. Ristau, I guess. Does this contract deal with who owns and operates the dehydrator unit?

THE WITNESS: Yes, it does.

MR. CARROLL: And what does it say as to who owns the dehydrator unit and who operates it?

THE WITNESS: Basically it's a two-part question, Mr. Carroll. There are at least a couple of sections -- Mr. Alvidrez, could you help me --

MR. ALVIDREZ: Sure.

THE WITNESS: -- get to those that deal with the delivery, the quality and who owns what --

MR. ALVIDREZ: Basically page 20, Ms. Ristau, that deals with quality and also dehydration equipment.

THE WITNESS: All right, page 20 has Section XI, which is entitled "Quality", and the specifications deal specifically with liquids. It says, "The gas shall be free of objectionable liquids."

"Gas from New Subject Wells..." which is irrelevant in this case because there is, to my knowledge, no new subject well on the site "...shall contain not more than seven pounds of water vapor per million cubic feet."

And then it also contains a provision that says, "If in Buyer's sole judgment the gas deliverable from any Subject Well other than a New Subject Well contains sufficient moisture to require installation of dehydration

equipment, such equipment shall be installed, maintained and operated by Buyer..." which would have been Gas Company of New Mexico at this point "...at Buyer's sole expense, except that all gas required as fuel for such equipment shall be taken upstream at Buyer's meter, shall not be metered to Buyer hereunder and shall be free of cost to Buyer."

MR. ALVIDREZ: I think, Mr. Hearing Examiner, it's clearly relevant on the issue of ownership and also on the issue of the specifications of the gas.

MS. HUNTZINGER: I guess we have a question up here, trying to determine whether this is relevant responsibility for the contamination or to apportionment of the responsibility. Maybe if you could speak a little more to the relevance of this document.

MR. ALVIDREZ: Certainly. Its responsibility as to the contamination -- that is, who owned the contaminating product? -- is really where this contract comes into play, and what the specifications were -- what was it that PNM was purchasing? And that's what this contract indicates. PNM was purchasing gas; it was not purchasing free product, which is the problem that we have at this site.

MR. CARROLL: Mr. Examiner?

EXAMINER ASHLEY: Yes, Mr. Carroll?

MR. CARROLL: As to the question of liability, the term used is "owner or operator". A processing plant can process gas and never own the gas, but if it causes contamination the OCD holds it liable as the operator of the plant.

Just like here in this contract, it is admitted by PNM that the dehydrator is owned and operated by PNM. Regardless of who owns the product passing through the dehydrator, the operator of the dehydrator, if it results in contamination, is responsible.

We have no objection to the admission of the exhibit.

EXAMINER ASHLEY: Mr. Carr, could you please restate your objection?

MR. CARR: Our objection was that it's irrelevant, that it is an agreement between the parties as to how they might apportion responsibility at a later date, and it is not relevant to the issue of who actually is responsible for placing the contaminant in the ground.

Mr. Examiner?

EXAMINER ASHLEY: Yes, sir?

MR. CARR: I'll withdraw my objection.

EXAMINER ASHLEY: Okay. Exhibit 1 will be admitted as evidence at this time.

Q. (By Mr. Alvidrez) I think we've basically

covered the parts that we wanted to cover at this point.

But Ms. Ristau, I'd like for you to turn to Exhibit 26 and --

A. Just a moment, please. Okay.

Q. -- can you identify this exhibit for us?

A. Yes, it's entitled "Unlined Surface Impoundment Assessment Form", and it has PNM's logo on it. It is the assessment form that we used to determine which pits may potentially need remediation.

Q. All right. And does this particular -- Well, there's actually a second part of this called "Pit Remediation and Closure Report". Can you identify that for us?

A. Yes, this is one that is entitled "Pit Remediation and Closure Report", and it's a State of New Mexico, Oil Conservation Division, form.

Q. And can you tell me whether these two documents relate to the Hampton 4M site?

A. Yes, they do.

Q. Okay. What I wanted to ask is, what is the purpose of the Unlined Surface Impoundment Assessment Form?

A. This was PNM's mechanism to go out and assess on an overall basis which pits may be in need of remediation for cessation of discharge, whichever was applicable at the time the assessment was made.

PNM went through and looked at all of its pits that would potentially fall under OCD Order R-7940-C and made a preliminary determination on which ones may need remediation or which would need to undergo OCD closure.

Q. And can you tell me what purpose the Pit Remediation and Closure Report served?

A. Yes, this is to provide the information in the form as requested by OCD on the determination basically that was made at the site at the time that remediation was actually undertaken.

Q. Were these documents prepared in connection with PNM's pit remediation program?

A. Yes, they were.

Q. I'd like to have you look at PNM Exhibit 27 and tell us what that is.

A. Just a moment. This is a letter dated January 13th, 1997, from PNM, signed by Maureen Gannon, the project manager for the pit remediation project, to Mr. William Olson of OCD.

Q. Okay, and what is --

A. And that's --

Q. I'm sorry.

A. It's regarding the notification of groundwater contamination at the Hampton 4M wellsite.

Q. And what is the purpose of this notification?

A. For OCD requirements, if we determine that there is groundwater impact at a site, we notify under the OCD requirements. This is that notification. It's actually the written follow-up to an earlier verbal notification to OCD.

MR. ALVIDREZ: Okay. Mr. Hearing Examiner, I believe that -- Well, I know that all of these exhibits that we've referred to have been admitted.

I don't know if we want to make that on the record proper during the hearing now, or whether the record that was developed during the prehearing conference suffices. But to the extent we've referred to any exhibits during this portion, we would formally move them into evidence. And that would be Exhibits 1 -- let's see, 3, 4, 5, 26 and 27, and 39.

EXAMINER ASHLEY: Okay, these are the exhibits that you've already referred to since the hearing started this afternoon. Could you restate those again?

MR. ALVIDREZ: They are 1, 3, 4, 5, 6, 7, 39, 26 and 27. I believe they've already been admitted, and I'm really just seeking clarification that that's the case.

EXAMINER ASHLEY: Okay, Exhibits 1, 3, 4, 5, 6, 7, 26, 27 and 39 will be admitted into evidence at this time.

MR. CARR: Mr. Examiner, if I might suggest,

during the pre-hearing conference I think we were in agreement that all PNM exhibits could be admitted, and there was an Exhibit 1 and 2 from Burlington and two exhibits from the OCD, and it might be appropriate now simply to --

MR. ALVIDREZ: -- have them admitted.

MR. CARR: -- have them admitted into the record of this case, and I think it will streamline the presentation if we do that.

Was Exhibit 3 agreed to?

MR. OWEN: That was the one you objected to.

MR. ALVIDREZ: Not your Exhibit 3.

MR. CARR: Okay, right.

EXAMINER ASHLEY: Mr. Carr, did you just have one exhibit, and Exhibit 3?

MR. CARR: I have Exhibits 1 and 2.

EXAMINER ASHLEY: Okay. Okay, at this time we'll accept the following exhibits and admit the following exhibits: 8 through 11 -- these are PNM exhibits -- 13 through 23, 25, 28 through 54.

Are there any other, Mr. Alvidrez?

MR. ALVIDREZ: Not at this time.

EXAMINER ASHLEY: Okay. And you have Exhibits 1 and 3?

MR. CARR: One and 2.

EXAMINER ASHLEY: One and 2.

MR. ALVIDREZ: And for the record, and for clarification, because I think there was some discussion about Burlington's exhibit numbers, Burlington Exhibit 1 is the Hampton 4M synopsis --

EXAMINER ASHLEY: Right.

MR. ALVIDREZ: -- and Burlington Exhibit 2 is a letter from myself to Mr. Carroll. I believe it's dated November 4th.

MR. CARR: Correct.

MR. ALVIDREZ: We have no objection, again, for the record.

EXAMINER ASHLEY: I don't seem to have that one.

MS. HUNTZINGER: We don't have Number 2.

EXAMINER ASHLEY: And Exhibits 1 and 2 for Burlington Resources will be admitted at this time for evidence.

Mr. Carroll, do you have some exhibits that you would like to admit at this time?

MR. CARROLL: Yes, Mr. Examiner. What have been marked OCD Exhibit Number 1 and 2. Number 1 is the Environmental file maintained for the PNM site, and Exhibit Number 2 is the Environmental Bureau file maintained for the Burlington site.

MR. ALVIDREZ: And we have no objection.

EXAMINER ASHLEY: Mr. Carr?

MR. CARR: No objection.

EXAMINER ASHLEY: Exhibits 1 and 2 for the Environmental Bureau will be admitted as evidence at this time.

MR. ALVIDREZ: At this time, Mr. Hearing Examiner, we would tender the witness for cross-examination.

EXAMINER ASHLEY: Okay. Mr. Carroll -- I mean, Mr. Carr?

CROSS-EXAMINATION

BY MR. CARR:

Q. Ms. Ristau, if I understood your testimony, you stated that the PNM pit was not the source of free product at the Hampton 4M well site; is that right?

A. Yes, we have collected a substantial amount of data that indicates that it is not and could not have been the source of free product.

Q. Could you just summarize for me what the basis is for that statement?

A. Well, there are several, actually.

One is, there is no record that the equipment ever was operated in a manner that could have discharged that amount of free product.

Another is that the pit was remediated by PNM,

almost two years ago at this point, and when Burlington went in and did their remediation activities this last week, plus a little preliminary work, the soil column above the bottom of the former PNM pit was still clean, which indicates that, you know, there has been no additional discharges to the pit.

The free product has been detected at a substantial distance upgradient of the PNM operations.

We have also significant other evidence as well, but those would be -- summarize three of the major theses.

Q. You testified that PNM attempts to comply with the orders of the OCD?

A. Yes.

Q. And that following the March 13 letter that is the final determination, that you continued remediation efforts at the site; is that right?

A. Yes, we did.

Q. Is that remediation effort that you're referring to the recovery of free product at this location?

A. Plus continued monitoring well installation and sampling and monitoring and reporting to the OCD.

Q. But in terms of actual remediation, was it the recovery of the free product --

A. Yes.

Q. Okay.

A. Yes, we had already completely remediated the contaminated soils in our pit.

Q. And to date, you indicated you've recovered about a thousand barrels of free product at the site?

A. A thousand gallons, sir, not a thousand barrels.

Q. We'd have a real problem. A thousand gallons.

And for how long have you been actually out there recovering the product?

A. I'd have to defer to one of the technical witnesses to tell you the exact dates, but it's been for about a year or so. We can double-check the dates, but it's been for many months.

Q. Is it fair to say you've been recovering, oh, approximately three barrels a day, something like that?

A. Gallons.

Q. Gallons. I'm not trying to -- About three gallons a day you've been recovering?

A. On the average, but the pump is not operated continuously. We pump for a while, allow it to recover, allow more free product to seep in and then pump again, so it's not a continuous-operation situation.

Q. By doing this, have you seen any improvement at the site whatsoever?

A. Any improvement?

Q. Yes.

A. Well, initially the free-product level dropped to about between two and three feet, and then it stabilized, which indicates to us that there is either an intermittent or a continuing release of the free product, or there is a massive volume of free product at this site.

Q. By just recovering free product, you're not addressing the source of the problem; isn't that fair to say?

A. Well, we have no control over the source of the problem. That release is occurring somewhere in the vicinity of Burlington's operations, so...

Q. But is it fair for me to say that recovery of free product won't address the source of the problem?

A. Well, it certainly will not address the release point, that's correct.

Q. And it won't address the contamination down -- or north in this canyon, toward the residence; is that right?

A. There is no way to address that unless and until you determine the release point for the free product and stop it.

Q. So the remediation that was being undertaken by PNM was not solving this situation; is that fair to say?

A. Yes, because we have no control over the release. That's a fair statement. We are not the release -- We have not released it.

Q. Okay. When we talk about the dehydration equipment on this location --

A. Yes.

Q. -- now, you would agree with me that the equipment, the dehydrator, was owned by PNM?

A. The dehydrator was at one time owned by PNM, yes.

Q. PNM made the decision, in fact, to install dehydration on this location; isn't that right?

A. Yes.

Q. And it was PNM's decision also to use an unlined surface pit near the dehydrator to place liquids in?

A. Yes, in common with Burlington and other operators on the site, that's the common practice, yes.

Q. But under the contract, page 20, those provisions you read, it was your option to install this equipment?

A. Yes.

Q. And to install the pit?

A. I am not sure. There is no record of who actually dug the pit. It may have been a former production pit or such like on the site, we don't --

Q. PNM would have had the option of putting a tank out there instead of a pit? That would have been something it could have done?

A. In common with Burlington, but it was not common practice until the OCD order for cessation of discharge

happened early in 1993.

Q. But you could have?

A. Yes.

Q. Now, placing the dehydrator on the production unit is really a quality, a gas-quality, matter, is it not?

A. Gas quality and system operation. As I stated before, we are a utility with an absolute obligation to serve. And so if the producer does not meet their quality obligation, we still have to keep pushing the gas, and we still have to keep operating.

Q. And if they don't deliver gas of adequate quality to you, you could refuse to take it?

A. Yes, but for that obligation to serve, that occurs enough times and you cannot meet your obligation to serve as a utility.

Q. And so you put a dehydrator on because that enables you to have a level of confidence that the product going into your gathering system is of sufficient quality?

A. Particularly if the producers don't meet their quality obligations, that's absolutely correct.

Q. At this site did you ever contact the producer and say, You're not meeting your quality obligation?

A. I don't know, because I was not involved in that end of the business.

Q. Is that a common practice of PNM? Are you aware

that they contact producers and say, You're not meeting the quality specifications in the contract?

A. I am not aware one way or another on that, sir.

Q. You don't know of PNM ever having done that?

A. I am not sure. I can't address it one way or another.

Q. All right, that's fine.

Now at this dehydrator you had an unlined earthen pit. Is there any dispute that into that pit were deposited liquids that were extracted from the gas stream?

A. Yes, a dehydrator is designed to remove water vapor, and certainly water -- waste water was discharged into that pit.

Q. Were liquid hydrocarbons also discharged into that pit?

A. Not that we've been able to determine, no.

Q. Of any kind?

A. There is trace amounts of carryover into the dehydrator, but the operational records and information we have regarding the dehydrator indicate that no substantial amount of free product would have gone through the dehydrator. The dehydrator is designed to shut in the well if it gets hit with too much free product.

Q. Is it your testimony that liquid hydrocarbons were not deposited in that pit?

A. We don't know one way or another. There was undoubtedly trace hydrocarbons because there was soil contamination associated with the pit. Whether they were free-phase or not, we do not have any way at this stage of determining.

Q. Okay. So it could be, could not be; we don't know?

A. We don't know.

Q. Now, is it fair to say that the dehydrator on the unit could have discharged free-phase?

A. Possibly, but I would say it's a very slim possibility, and we do have another technical witness who can address that more fully with you.

Q. If I understand the position of PNM in this case, it is that regardless of who discharged into that pit, the product was owned by someone else, and they're the responsible party?

A. Our position is that, number one, the free product was not discharged through the pit to the groundwater, and number two, whoever released the free product is responsible for it, and PNM was not the party that released the free product.

Q. And how do you know that, that you were not the party that released it --

A. Because --

Q. -- if the dehydrator could have?

A. Because we have found such massive amounts of it upgradient, substantially upgradient from the PNM operations.

Q. Now, I'm not asking you if PNM could have discharged all of it --

A. Uh-huh.

Q. -- I'm asking you if they could have discharged some of it out of that dehydrator into that pit?

A. It is possible, yes.

Q. Now, if PNM's position is adopted and that the person responsible for the discharge into an unlined pit or on the ground is only the person who owns that product, wouldn't that mean that anyone could discharge, free of risk, hydrocarbons on the ground, as long as the title was vested in someone else?

A. I'm not sure I follow your argument, but basically, the water quality protection requirements are not strict liability. They do not make every person who is associated with a site jointly and severally liable for any and all of the contamination.

Our argument is that we have been very willing to be responsible for contamination that we have caused, and we have, in fact, cleaned up our contamination. It's the issue of the free product, which we submit to you is not

our contamination. That's the subject of this hearing.

Q. Is it fair to say that one of the objectives in this hearing is to set a precedent so that wherever there's free product, in fact, that would be a matter that would be the responsibility of the producer?

A. No, it is -- The precedent we would like to set is, whoever is causing the release be required to address it. Because downstream and downgradient discoverers of that contamination have no effective means of addressing that contamination.

Q. When you say "whoever is causing the release", do you mean the individual who actually discharges the product onto the ground?

A. I wouldn't split hairs. I would say whoever has control of the release point in whatever way, shape or form, who can cut it off and stop it from being a continuing source of problems in the environment should be required to address it.

Q. Now, the release point, would that be at the -- where the product comes out of the dehydrator?

A. No, the release point would be where the free product is coming from. We don't know exactly where that is; we just know that it's substantially upgradient from the dehydrator and any operations we had at the site.

Q. So is it your testimony that if free product came

out of the dehydrator, that that's not the release point?

A. That is the release point for what you would expect to see, what we've seen at the overwhelming majority of sites. At most, that may cause relatively low levels of dissolved phase contamination. We have never seen it cause free-product contamination.

Q. If free product came out of the dehydrator of the Hampton 4M while it was owned and operated by PNM, is it your testimony that that simply would not be your responsibility?

A. We believe not, because we again had no control over what hit our dehydrator. It would have been due to upset conditions in the producer's equipment upstream from us.

Q. Are you familiar with the operation generally of dehydrators?

A. Generally, but not -- That is not my area of expertise. We do have another witness who can address that --

Q. Okay.

A. -- in better detail.

Q. And I just want to be sure we're on the same page here. Would you agree with me that the control and management of the product is the issue, or is it the ownership of the product at the time it goes on the ground?

A. I believe that they are intertwined because the owner is the one who can best manage the product.

Q. I think you said that when PNM found contamination in a pit --

A. Yes.

Q. -- that they didn't split hairs, that they cleaned it up.

A. That has been the case in the overwhelming majority of the pits that we have addressed so far.

Q. And after you do that, isn't it true that PNM is going back to operators and billing them for a portion of these costs?

A. We would like to recover our costs because we believe that the product shouldn't have hit our pit in the first place, yes.

Q. And haven't you, in fact, been going back and asking operators to pay a portion of those costs?

A. We will if we think it's warranted, yes.

Q. And haven't you been writing operators in the past, billing them and asking them pay a portion of the cost for the cleanup of these pits.

A. Well, yes. More fundamentally than that, before we even started assessing pits, we put the operators on notice that we did not think that we were totally responsible for this contamination.

Q. But you are billing them for a portion of it; isn't that right?

A. We have asked for payment. To my knowledge, nobody has sent us a check.

Q. When you've asked for payment, are you asking for 100 percent of the costs of the cleanup?

A. No.

Q. And so you're making an arbitrary allocation as to a portion of it; isn't that right?

A. Yes, and it is indeed arbitrary. This is to avoid the necessity for litigation later on.

Q. Sort of like the OCD initially making an arbitrary allocation here?

A. Yes, and we're asking them now to adjust that arbitrary allocation, now that we have better information.

Q. The costs that you're assessing, are these costs based -- are these numbers based on the actual costs incurred for remediation?

A. In the sense that we now have a considerable track record, they are average costs. We don't go and compute costs on a pit-by-pit basis, no.

Q. And these costs are the costs based on the work that PNM decided needed to be done at those pits?

A. It was the work that was required to be done by the OCD to meet the requirements of OCD Order 7940-C.

Q. And to meet those requirements, PNM decided what they would do to meet those orders?

A. We submitted a work plan to OCD and they approved it, yes.

Q. Do you have any idea how much liquid hydrocarbons might be discharged by a dehydrator during a day?

A. During a typical day?

Q. Yeah.

A. Let me defer to another witness --

Q. Okay, that's fine.

A. -- who can better answer that.

MR. CARR: No, that's fine.

I think that's all I have. Thank you.

EXAMINER ASHLEY: Mr. Carroll?

MR. CARROLL: Thank you, Mr. Examiner.

EXAMINATION

BY MR. CARROLL:

Q. I have a couple of follow-up questions on the ownership of the product, versus the operator of the facility.

A. Uh-huh.

Q. PNM operates pipelines, do they not? Does it not?

A. Transportation pipelines, yes. We no longer have any gathering pipelines.

Q. Right. And in this age of natural gas, the pipeline is primarily a transporter and doesn't own the gas; isn't that correct? In a lot of instances?

A. Yes, but we're also a buyer in the sense that to the extent that customers have selected us as their supplier, we own the gas and supply it to the customers.

Q. Well, assuming that in one segment of PNM's pipeline it's all other people's gas, if there's a release, if there's a pipeline rupture, PNM is taking the position that they're not liable for a blowout if it catches on fire or to do something regarding the release because the gas is not theirs?

A. In PNM's pipeline and that's operated by PNM.

Q. Well, isn't the product that goes through the dehydrator owned by somebody else, but you are operating the dehydrator and are in control of that product as it passes through the dehydrator?

A. Yes, but we don't actually take possession of it until a meter.

Q. Well, in a pipeline where you don't own any of the gas, you don't take possession of that gas?

A. Well, we've taken it, yes --

Q. You've taken possession but not ownership?

A. -- at the point where it enters the pipeline.

Q. Well, don't you take possession of the liquids

coming through a dehydrator?

A. No.

Q. Who has possession, then, in that dehydrator, if not for PNM?

A. Any saleable liquids that are produced at the site go back to the producer, whether they come from the dehy or anyplace else on the site.

Q. PNM --

A. If they come off the meter --

Q. You testified PNM owns and operated the dehydrator?

A. They did until 1995, yes.

Q. So your position is that PNM is not in possession of that gas or liquids --

A. Until it --

Q. -- while it's passing through the dehydrator?

A. That is correct. The ownership does not transfer until --

Q. I'm talking about possession, now --

A. -- it goes to the meter.

Q. -- rather than ownership.

A. You mean physical, does it pass through the dehydrator?

Q. Right.

A. Yes, it passes through the dehydrator.

Q. So it's analogous to my scenario where the transportation pipeline is transporting gas owned by somebody else. PNM takes possession of that gas, and you stated that -- I believe you stated that PNM would be responsible for gas while in its possession if there was a rupture of that pipeline?

A. Right, because we've taken possession of the gas, not the other fluids. What we take possession of is gas free of deleterious liquids and free of water vapor in amounts that would cause --

Q. Who removes --

A. -- operational difficulty.

Q. Prior to June 30th, 1995, who removes the deleterious liquids?

A. Well, the producer generally removes and has the exclusive rights to any marketable liquids.

Q. What's the purpose of the dehydrator?

A. The dehydrator is to remove any residual water vapor that's in the gas stream that can cause freeze-up or other operational difficulties.

Q. And that's a facility owned and operated by PNM?

A. Yes.

Q. If I can direct your attention back to the March 13th OCD directive again.

A. Okay, which exhibit is that again?

Q. It's Exhibit --

MR. ALVIDREZ: -- 39.

THE WITNESS: 39?

Q. (By Mr. Carroll) -- 39?

A. Okay, bear with me a minute till I get there. Okay.

Q. The last sentence of the largest paragraph, it says, "Therefore, the OCD requires that PNM take additional remedial actions within 30 days to remove the remaining source areas with free-phase hydrocarbons in the vicinity of and immediately downgradient of the dehy pit."

A. Yes.

Q. Did PNM remove any remaining source areas after that directive?

A. Well, first of all, we could not find any source area in our pit that appeared to have any free-phase product in it. There is indeed free-phase product in the groundwater below the pit. But PNM's pit itself did not contain any free-phase, then or later.

Q. So how far -- Prior to this directive, you had removed some source area?

A. We had removed the contaminated soil from the pit, yes.

Q. And how far down did you go?

A. Again, I would have to defer to the technical

witness to give you the details, but it was, I believe, 14 or 15 feet, something like that.

Q. And that removed all of the source area, there was no remaining soils with any hydrocarbon contamination below that point?

A. There was some left. We couldn't clean close because of the extremely constricted wellpad configuration. It was on a relatively steep slope and could spill material. We had concerns about excavation safety, so we didn't clean close.

After discussions with Bill Olson we did go back and do vertical profiling, and that's when we discovered the free-phase and the contaminated groundwater beneath the pit. We did not encounter groundwater when we dug our pit.

Q. Maybe I'm misunderstanding your testimony, but it seems that you -- I believe you testified that you removed all the contaminated source area, and then there was an area of clean soil, and then there was a contamination below the clean soil?

A. Right. Yeah, because the product is moving towards us from upgradient, we're actually seeing the area contaminated from the bottom up, from -- As the groundwater rises and falls, the free product, in essence, floats on the groundwater, and it's pushed up from the bottom.

Q. So there was an area of clean soil underneath

your pit, underneath the contaminated soil but above the soil that was being contaminated from the bottom up?

A. Yes, actually when we bottomed out in our pit we did hit a relatively hard layer, and that, coupled with the constraints imposed by the well pad and the excavation issues told us to stop. That's according to our pre-approved plan, that's how we usually do it.

If there a potential for groundwater, we then go back and do vertical profiling, which we did, in fact, do at this time.

Q. Maybe I misunderstood your testimony. So you did remove additional source areas after Mr. Olson directed you to on March 13th?

A. Of this year?

Q. Yes.

A. No, we did not, because there was none of our source area left to remove. We could find no indication that our pit ever contributed much, if any, free-phase to the groundwater, and the free-phase is what the issue is on additional source removal.

Q. So Mr. Olson directed you to remove remaining source areas, you declined because you felt you had no remaining contaminated source areas?

A. Right, but we did continue to recover free product, we did not stop doing that, even though we did not

believe that we were the source of the free product.

Q. Okay. So by declining -- You used the term "declining" rather than "balking at" removal of remaining source areas?

A. Yeah, our big concern was that this is a problem that we could not handle, that there was something very obviously going on substantially upgradient from us, underneath or around or through equipment over which we had no control, and that we needed to take a second look at this site and figure out what's going on so that we could come up with a remediation that would actually be effective.

Our feeling was, at that point we had done some preliminary calculations on how much free product there could be at this site, and we were coming up with in excess of 10,000 gallons. And particularly if there's a continuing release, we were very concerned that we could remove free product until the cows come home, and it would still never adequately remediate the problem.

Q. So in other words, you politely declined to comply with this directive?

A. Well, we feel that we were polite. We did it with some discussions with Roger Anderson and Bill Olson.

Q. In response to Mr. Carr's question regarding billing other operators at sites for their share of the

cleanup --

A. Uh-huh.

Q. -- and PNM's seeming request of the OCD to apportion liability in this case, now, as you're aware, Burlington's performing remedial actions as we speak. Is PNM asking the OCD to apportion liability so that Burlington can bill PNM for a portion of this cleanup?

A. No, we are asking for -- We have remediated any potential contamination we could have contributed to this site months ago. We're asking for release from further liability, including for the current remediation activities that are going on, to which, you know, we strenuously objected because we think they are likely to make the problem worse instead of better.

Q. Well, assuming the Examiner's order finds that PNM contributed contamination to this site, is PNM asking that that order also set PNM's percentage liability for purposes of sharing in this Burlington cleanup?

A. As long as it also requires them to share in what we've already done. We've expended considerable funds at this site already.

MR. CARROLL: Mr. Examiner, if I could ask your permission to allow Bill Olson to ask questions? Bill is our technical person, and rather than having him funnel me little pieces of paper with questions, I was wondering if

Mr. Olson could ask the questions directly.

EXAMINER ASHLEY: Mr. Carr, do you have any objection?

MR. CARR: I have no objection.

EXAMINER ASHLEY: Mr. Alvidrez?

MR. ALVIDREZ: I have no objection.

THE WITNESS: I have no objection.

(Laughter)

EXAMINER ASHLEY: I will allow it.

EXAMINATION

BY MR. OLSON:

Q. Ms. Ristau, just a couple of questions.

You did maintain that PNM did own and operate the dehydration unit?

A. Yes.

Q. And was responsible for discharges from the dehydration unit?

A. Yes.

Q. So PNM would then be responsible for any disposal of liquids from the dehydration unit onto the ground surface or into the pit?

A. Yes, that actually came through the dehydrator.

Q. So if free-phase product came through there, that would be -- and was disposed of in the pit, that would be the responsibility of PNM since they actually placed that

in the pit?

A. We dispute that somewhat, because the only reason that the free product would have hit our dehydrator in the first place was if there was a major equipment malfunction on the producer's part upstream from us. And so we would be the victims, as it were, rather than the dischargers.

Q. But --

A. That would in turn cause our equipment to malfunction and discharge the free product to the pit.

Dehydrators are meant to remove -- as you know, to remove water vapor and handle trace amounts of hydrocarbons. They're not meant to handle massive amounts of free product. And we've got, we think, well in excess of 10,000 gallons free product at the site.

Q. But any liquids that would be discharged from PNM's equipment, which was operated by PNM's equipment, would have gone to the ground surface at this site?

A. Right, and that's why we did, in fact, remediate the soil contamination caused by the discharge of waste water with trace hydrocarbons in it.

Q. And you're also stating that the pit soils were cleaned up during the excavation?

A. All except the bottom. We bottomed out, and it was fairly hard, and then again -- Well, you've been to the site, haven't you, Bill?

Q. Uh-huh.

A. You know what the constraints are on that northern end of the well pad. We're getting very concerned about going deeper and going into that hard area because of bank stability and so forth. So we stopped and then consulted and went back and did vertical profiling to determine whether or not there had been a groundwater impact, instead of going till clean, or until we hit groundwater, which would be our usual practice.

Q. I just wanted to clarify, then, so at the time that the excavation was ceased, the extent of the contaminated soils was not known at that time? The bottom of the excavation was still contaminated?

A. We knew that it was still contaminated, yes. That's why we went back in and did the boring to determine vertically, down -- because there was still some edging, still some potential then, that you could have a groundwater impact, if you can't clean close.

MR. CARROLL: I have just one follow-up question then.

FURTHER EXAMINATION

BY MR. CARROLL:

Q. I thought you just told Mr. Olson that the bottom of your investigation still showed contamination?

A. It did, but it was not saturated, and we do not

believe and continue to not believe that it was the source of the free-phase.

Q. But you answered a question of mine earlier, saying that there was a layer of clean soil between your contamination and this contamination coming up from the bottom?

A. Yeah. It would probably be better to defer that to technical witnesses, because we can show you that subsequent investigations, including Burlington's recent one, basically showed that there was clean fill in the area of our old pit, hit that bottom layer where the bottom of our old pit used to be, and then it was relatively clean again, and then started running into relatively contaminated and then saturated material.

Q. What do you mean by "relatively clean"?

A. Relatively clean, it was cleaner than that band at the bottom of our pit.

Q. But it wasn't clean?

A. No, because it's being contaminated from the bottom up. You have vapor-phase contamination coming up off the ground --

Q. So was there or was there not any clean soil underneath your pit between the contamination you say came up from the bottom and yours coming down from the top?

A. Comparatively speaking, it was clean. It was

cleaner --

Q. It was cleaner than either the contamination --

A. -- than the bottom of the pit, and it was certainly much cleaner than the saturated zone just above the groundwater interface.

Q. It was cleaner than the soil below it or the soil above it?

A. Okay, I'm getting confused. Okay, which was cleaner?

MR. CARROLL: That's all the questions.

MR. CARR: May I ask just a couple of follow-up?

EXAMINER ASHLEY: Yes.

FURTHER EXAMINATION

BY MR. CARR:

Q. You talked about, Ms. Ristau, about when you were excavating at the pit --

A. Yes.

Q. -- about there being -- it being a difficult site to excavate.

A. Yes.

Q. And there were various constraints that limited what you could do?

A. Right.

Q. Wasn't one of those constraints the dehydrator itself?

A. Yes, indeed, and that was not owned or operated by us at the time. So in essence they wanted to keep flowing gas. We were constrained on --

Q. Did you --

A. -- what equipment could be removed.

Q. Did you ask Williams for permission to move that?

A. Yes, Williams's discretion whether or not they wanted to, you know, stop taking gas and move the dehydrator.

Q. Was there a request to them to do that, do you know?

A. I would have to defer that to the people that were on site.

Q. Okay.

A. My impression would be not, because that is usually not our practice, and there was nothing to indicate any need for that at the time the pit was dug.

Q. Okay. Again, I may be asking the wrong witness, so tell me.

A. Okay.

Q. But you talked about 10,000 gallons of free-phase under this site. What's the basis for that number?

A. Again, I'll have another witness.

Q. Okay.

A. It's actually more than that, and I will have

another witness identify for you how that was determined.

Q. Okay. You talked about -- that free product that moves through your equipment typically being collected and managed by the operator; is that correct? Did you say that?

A. If any free product does come through the dehy?

Q. Yes.

A. We could find no evidence that any substantial amount ever did, but in times past there have been discussions with operators where they maintain that that's their product.

And also the free product that we have been recovering, the thousand gallons or so, has been going back to Burlington.

Q. When you have a situation where you have a dehydrator and it's discharging into an unlined earthen pit, I mean, that's not a situation where you'd have the operator manage and collect that. I mean, we're talking about a different situation; isn't that right?

A. Well, because it's wastewater, it's not product.

Q. But if you had the product also go with the wastewater into the pit again, that's not a situation where the operator is managing that product, correct?

A. Well, I guess I'm getting a little confused here, because generally there isn't any substantial amount of

product that goes into the pit.

Q. But if there is in the pit -- I thought you -- and I may have misunderstood your testimony. I thought you said that typically, when there was free-phase coming through the equipment, that that was typically managed in con- -- an operator -- or collected by the operator; is that the statement?

A. Well, basically the way it's addressed by the contract is that anything above the meter goes back to the operator if it's saleable liquids.

Q. And if these saleable liquids somehow get into the pit, I mean, it's really not practical; isn't that right? To come out and try and manage and collect that once it's in the pit?

A. Unless it was a massive amount.

MR. CARR: That's all I have. I won't ask any more questions.

THE WITNESS: All right.

MR. CARR: Thank you.

EXAMINER ASHLEY: Mr. Alvidrez?

MR. ALVIDREZ: A few follow-up, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. ALVIDREZ:

Q. Ms. Ristau, with regard to the free product --

A. Yes.

Q. -- recovery, why did PNM do that?

A. We had several discussions with OCD, because we were -- quite frankly, we were alarmed when we saw the levels of free product at this site. And we submitted a plan for how to address the free product, in addition to our groundwater management plan, which has sketchy -- what to do if you encounter free product. And in collaboration with OCD we determined that free-product removal would be the best thing to do, at least short-term, until we could do some more sorting out.

Q. How effective is that free product if there is a -- How effective is that type of remediation if there is a continuing source?

A. Not very, and that was the conclusion we were coming to.

Q. And why is that?

A. Well, like I say, you can -- If it's being released into one end and you're pumping it out the other end, you're going to -- this is an infinite cycle here. As long as the well or the producer's equipment is releasing free product somewhere upgradient, you will continue to recover free product.

It would be much more effective to go figure out where that release point was and cut it off there, than to try to pull it downgradient and then recover it, which was

what we were, in effect, doing.

Q. Was this concern ever related to the OCD?

A. Yes, we had some discussions about it.

Q. And what was their response?

A. Their response was, We know, but the free product was first discovered under your site, and we hold both parties responsible. So we were, again, trying to do our best to comply with the OCD's directives.

Q. There have been a few terms that you've talked about in your testimony. One is a "source", and I want to make sure that we know what we're -- that our terms are defined here. And when you talk about "source" or when someone mentions "source" to you, what do you understand that to mean?

A. That is the source -- Well, okay, it's actually defined in two different ways --

Q. Okay.

A. -- depending on context. Source can be the source of contamination to groundwater. Typically at our sites that's contaminated soils. And once you remove that source, it removes the continuing input to groundwater and then the groundwater cleans up on its own fairly well.

We also use it interchangeably to mean, really, the release point. And we try to distinguish, but we have been in some cases using them interchangeably.

The true source, initial source, is obviously down in the formation somewhere, but we're talking of it in terms of how it's getting released to the environment, that release where it's going into the environment.

Q. Okay, that was the other term I was interested in getting defined, "release point". And can you clarify for us what that means?

A. Again, the way we've been using it, it means the point at which it escapes the control. And you know that obviously this is a substance that has economic benefit and nobody's going to let it loose if they don't have to. It's the point where it escapes the management and control of the person who's benefiting from it and goes into the environment.

Q. You talked a little bit about the obligation to serve --

A. Yes.

Q. -- as a gas utility. Can you expound on that a bit, tell us what that means and what it entails?

A. Well, as a public utility -- and it's changing over time because of deregulation and change in the choice of suppliers and so forth. But for our ultimate end-use utility customers, we have an absolute obligation to serve. We can't go to them and say, Sorry, we don't have any gas today because our equipment malfunctioned or the producer's

malfunctioned and we don't have any. If we get in that situation, we're subject to fine and action by the Public Utility Commission in this state.

Q. What implications does that have with respect to PNM's ability to take or not take gas?

A. Well, again, if we've got an absolute obligation to serve or supply our end-use utility customers, we can't say, Gee, you're not meeting your quality specs, we think we won't take gas from you. We could do that in an isolated case, but you start doing that on any large-scale basis and then you are not able to meet your obligation to serve.

Q. You talked a bit about system operational issues that are created by the presence of liquids. Can you talk about what issues arise with respect to liquids in natural gas?

A. Again, I'm not the best expert to talk to on this, but my understanding is, particularly in the wintertime, and the reason for installing dehydration, is, water vapor in the gas stream can cause freeze-up in valves, pipelines, pressure-transition points and so forth, and can restrict or completely block the flow of gas.

It can also cause equipment problems in the sense that you can get a buildup of pressure, creating a dangerous situation, both for the people that have to go

out and deal with it and for the integrity of the system.

Q. Does that have any implications to this obligation to serve that you talked about?

A. Well, certainly if you get a freeze-up in a line or in several lines, you're not going to be flowing gas and you cannot deliver the gas to the end-use customer as you're required to do.

Q. There was a line of questioning by both Mr. Carr and Mr. Carroll having to do with, I guess, the distinction between possession and ownership. And what I want to elicit from you is, in the case of PNM, to the extent that free product ran through PNM's equipment --

A. Uh-huh.

Q. -- and that could be held to be possession by PNM of that free product, was that possession something that was voluntary on the part of PNM?

A. No, we would have no control over that whatsoever. In fact, it would create problems for us, and has in the past.

Q. Is that a distinction between the analogy that Mr. Carroll talked about, where PNM is acting as a transportation company for somebody else's gas?

A. It's not really, I don't feel, that good an analogy. In the first place, once it passes into PNM's system and it's the product that PNM is actually engaged in

the business of transporting and distributing, I feel that's a different situation than if it's passing through a piece of equipment that we installed as a precaution to protect our system.

Q. And is that how you describe the dehydrator?

A. Yes, the dehydrator, to me -- and again, I'm not the expert in this area -- is insurance to make sure that our system integrity is not impaired and that we can continue to meet the obligation that we have to our customers.

Q. Mr. Carr asked you about the issue -- or maybe it was Mr. Carroll, but -- I believe it was Mr. Carroll -- the issue of apportionment and Burlington's activities that are ongoing at the site right now. And are you -- Do you have an understanding as to what type of remediation approach Burlington is taking?

A. I have some understanding. We've really not seen much in the line of a written remediation plan at all, like we typically do. They've taken a bulldozer out there, and they're blading the heck out of that site.

MR. CARR: I'm going to object to this. The issue is not what we are doing. They've had a chance to do it and refused, and this is irrelevant to the questioning, whether or not PNM is responsible for contamination.

MR. ALVIDREZ: May I respond?

I think the door was opened by Mr. Carroll in his line of questioning with regard to PNM's position with respect to paying for part of Burlington's cleanup, and I really need to clean up the record on this point.

MR. CARR: I think they can talk about their payment, Mr. Examiner. I think they can talk about whether or not they're going to pay, without coming in and characterizing the effort we're doing that is being approved and monitored by the OCD.

And I also think that before they start talking about that, a foundation for this testimony would have to be laid whereby we could establish that Ms. Ristau has been out there and looked at it and is speaking from a basis of anything other than hearsay.

EXAMINER ASHLEY: Well, I'll sustain the objection.

Q. (By Mr. Alvidrez) Let me ask this question, Ms. Ristau: Would PNM be willing to pay for unreasonable costs incurred by Burlington in connection with any remediation activities they might conduct?

A. No, we would only be willing, at most, to pay for remediation activities that first of all address an increment of contamination that we actually have some responsibility for, and, second of all, that have some reasonable likelihood of success, and right now we are not

in a position to think that their remediation activities are likely to succeed.

MR. ALVIDREZ: That's all the questions I have of this witness.

MR. CARROLL: Mr. Examiner?

EXAMINER ASHLEY: Yes.

MR. CARROLL: Could I ask a couple more?

EXAMINER ASHLEY: Sure, couple more.

FURTHER EXAMINATION

BY MR. CARROLL:

Q. A couple questions regarding this obligation to serve.

A. Yes.

Q. PNM does make a profit, doesn't it?

A. Not on the sale of gas, no, actually we pass that through --

Q. Doesn't PNM shareholders -- I mean, it's a profit-making enterprise?

A. They make a regulated rate of return, yes, not a profit.

Q. So on the gas moving through its system, even through this gathering system, it makes a profit?

A. Not --

MR. ALVIDREZ: I'm going to object to the relevancy of this. This is --

THE WITNESS: -- anymore, we don't own any gathering system anymore.

Q. (By Mr. Carroll) Okay, I'll ask you a question. Does the obligation -- Are you testifying that the obligation to serve would somehow absolve PNM from liability for a release in this instance?

A. No, what I'm testifying to is that the reason why we installed dehydration, because we have to ensure that we can meet that obligation to serve.

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

EXAMINER ASHLEY: Mr. Carr?

MR. CARR: I have no further questions.

EXAMINER ASHLEY: Okay.

EXAMINATION

BY EXAMINER ASHLEY:

Q. I have a couple questions, going back to the pit. One is, what is the age of that pit?

A. Pardon me?

Q. What was the age of that pit before it was decommissioned and remediated?

A. How long it had been there?

Q. Yes.

A. We don't know exactly, because very little records were kept on those kinds of things. But probably it was there basically from the time the Burlington well

was completed and started flowing gas, I would guess, but that's only a guess. We don't have any documentation.

Q. Okay. As far as free product, can you tell me what -- exactly how you would define "free product"?

A. It's basically free-phase product, as opposed to that that's dissolved in the groundwater. It's -- There's a noticeable phase change, it has a different specific gravity, different characteristics. There may be minor amounts of water, but it's basically a hydrocarbon substance, as opposed to dissolved phase where it's mostly water with traces of hydrocarbon.

Q. Okay, as far as a hydrocarbon substance, this is what's produced from the gas wells, as a liquid from the gas wells?

A. Yes, this was -- Prior to about a year and a half ago, this was a dual-completion well, and one of the formations in particular produced a lot of liquids, liquid natural gasoline, distillate derivatives it's called.

Q. Okay. What is the nature of free product, do you know, when it gets in the ground like that? I mean, how does it usually respond to migrating in the ground?

A. How does it move?

Q. Yeah.

A. Mark, could I defer that to Valda and some of --

Q. Okay.

A. -- the witnesses who can go into that with you with more detail?

Q. That would be fine.

A. Okay.

EXAMINER ASHLEY: I have no further questions. You may be dismissed, but I would like to ask you and all the other witnesses to plan on remaining for the duration of the hearing in case we would like to recall you for anything.

THE WITNESS: Okay.

EXAMINER ASHLEY: And at this time let's take a ten-minute recess.

(Thereupon, a recess was taken at 3:03 p.m.)

(The following proceedings had at 3:15 p.m.)

EXAMINER ASHLEY: This hearing will now come back to order.

Mr. Alvidrez, you may call your next witness.

MR. ALVIDREZ: Yes, Mr. Examiner. We would call Rodney Heath.

EXAMINER ASHLEY: Excuse me.

MR. ALVIDREZ: Yes.

EXAMINER ASHLEY: Would it be possible to move the easel a little closer?

MR. ALVIDREZ: Absolutely. Is that a little better?

EXAMINER ASHLEY: Yeah, let's try that.

Mr. Alvidrez?

RODNEY T. HEATH,

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. Heath, would you please state your name for the record?

A. Rodney Thomas Heath.

Q. And where are you employed, Mr. Heath?

A. I'm the president of Petro Energy, Incorporated.

Q. And can you tell us what business Petro Energy is in?

A. We're a small production company, have our own wells, with some partners, obviously, and also I'm involved in developing some patents that I have assigned to Petro Energy.

Q. And what type of patents, without getting into detail --

A. Well --

Q. -- have you developed?

A. Well, the current patent, I could blow a horn on it, but it's a patent to remove -- to catch the effluent from the still column of dehydrators and remove the BTEX in

the atmosphere.

Q. Okay. And what are your job duties as president of Petro Energy?

A. Well, I pretty well do the whole thing right now.

Q. Okay, basically --

A. I'm the manager --

Q. -- chief cook and bottle-washer?

A. Chief cook and bottle-washer.

Q. Okay. I'd like to find out a bit about your educational background, starting with college. Can you tell me what your educational background is?

A. Yes, I have a BS in mechanical engineering from Texas A&M University. I graduated in June of 1954.

Q. And following graduation in 1954 from Texas A&M, where did you go to work?

A. I graduated on a Friday night at A&M and went to work for Southern Union in Farmington on Monday morning, and have been there ever since.

Q. And what jobs did you do for Southern Union?

A. Well, I was diverse positions. I was with Southern Union from June of 1954 through June of 1961. I was their measurement superintendent for a while --

Q. And what does that involve?

A. Measuring the gas and all the duties that you have as -- measuring the gas and the specific gravity of

the gas and supervising the charts and auditing the charts and chief bottle-washer again.

Q. Okay.

A. I also was prorationing superintendent for a while.

Q. And what does that involve?

A. Well, that was when prorationing first came into being, and I had the job of, really, controlling the production of the wells, which wells were on, which wells were off. I developed a system for estimating the amount of days the wells had to produce, was in on the ground floor developing the prorationing system.

Q. All right. Any other work, any other jobs for Southern Union?

A. The last job I had was production superintendent.

Q. Okay, and what were your duties as production superintendent?

A. Well, I was responsible for all the Southern Union gathering systems, the operation of the wells, operation of all of Southern Union's equipment, measurement, and also the specifying and sizing of all equipment required to connect two wells, and also laying out the locations and how the equipment is installed.

Q. Would that be -- Would you have been the person responsible for basically setting up the wellpad site and

the surface equipment?

A. Yes, correct.

Q. Okay. And this work for Southern Union done, where was this work for Southern Union done? What part of the country?

A. Oh, it was all in the San Juan Basin.

Q. Okay. And that's where the Hampton 4M well is located?

A. Yes, sir.

Q. After you left employment with Southern Union in 1961, what did you do?

A. I became president of Olman Heath Company, which was a company that was specifically organized to manufacture and sell the combination production unit which I had patented while I was with Southern Union.

Q. Okay. Talking about a combination production unit, is that something that's commonly referred to in oilfield parlance as a separator?

A. Well, a production unit does all the -- a lot more functions than just separate. It provides the heat to turn a well on, has the equipment to control the pressures, generally it processes the liquid in some way. So it's more than just a separator.

Although a production unit will have a high-pressure separator, in the case of a combination it will

have a high-pressure separator and a low-pressure treating separator working together.

Q. Throughout the discussion thus far in this case, and as things are identified on the exhibits as a separator, is that equivalent to the combination unit, as you described it?

A. Probably you all have been using the word "separator" to cover the whole thing, okay? But we define it a little bit more narrow, and a separator -- You know, you get into separation and you can have two-phase, you can have three-phase, a lot of variations. So I like to refer to a production unit, because it does a lot of thing.

Q. I understand. Let me just ask with regard to the testimony that has taken place thus far, when we've referred to separators operated by Burlington, do you understand that to be what you're referring to as a combination unit?

A. Yeah, I would -- I think you all are referring to a production unit, correct.

Q. Okay.

A. What I define as a production unit, yes.

Q. All right. What did you do -- What business was Olman Heath involved in?

A. Well, it -- Like I say, it was specifically organized to manufacture and sell this production unit that

I had patented, and it grew into a full-blow production-equipment company. I was president of Olman Heath Company from June of 1961 -- Actually, I was in the same position, although there were changes in the name of the company and some organizational changes occurred, but I was in the same management and design position from 1961 through February of 1995.

Q. Okay. And what is it that you designed?

A. Well, I designed, actually, the production unit that's on the Hampton 4, I designed that, and also the dehydrator that was on that.

Q. Okay. And are there other pieces of oilfield-related equipment that you've designed?

A. I don't know the exact number, but I have in excess of 20 patents on different pieces of equipment.

Q. Okay. Did Olman Heath manufacture oilfield equipment?

A. Oh, yes.

Q. And what type of equipment did Olman Heath manufacture?

A. Well, we cover the entire sphere, you know, production units, separators, scrubbers, heaters, treaters, dehydrators.

Q. Do you know the brand name associated with the combination production unit at the Hampton 4M well?

A. Yes, it's got the Weatherford brand name on it. And as I said, in 1981, December, 1981, Weatherford US acquired Olman Heath Company. And at that time I became the vice president and operating manager for Weatherford, basically the same position I held before.

And then, to carry it a little further, in January of 1986 the company was reorganized and it became U.S. Enertek and continued as U.S. Enertek from that date through February, 1995.

Q. And likewise, do you know the brand name that's associated with the gas dehydrator?

A. It's also Weatherford.

Q. And is that also the situation where Olman Heath originally manufactured that same equipment?

A. Yes, we did, right. The name was Weatherford Olman Heath. They just stuck Weatherford in front.

Q. All right. Have you been continuously involved in oilfield equipment-related work, basically since 1961 to the present?

A. Yes.

MR. ALVIDREZ: I would like to tender Mr. Heath as an expert witness on the topic of oilfield equipment and operations.

EXAMINER ASHLEY: Mr. Heath is so qualified.

Q. (By Mr. Alvidrez) Mr. Heath, you've been in the

business since 1954. Can you give us a little bit of the history of how things developed out in the San Juan Basin with respect to oilfield production equipment?

A. Well, yes, and this whole thing sort of ties in with some of the things that happened.

When I first went to work for Southern Union, the Dakota drilling had not really yet begun. It started -- Maybe some of it was going on, I mean, but we were not hooking up many Dakota wells at that time. And the production was from the Mesaverde and the Pictured Cliff.

And the contracts that we had drawn up at that time with the operators was a contract that said Southern Union would put all the equipment on, and we would put the tankage, and then we would collect the liquids and share them 50-50 with the operator.

Q. When you talk about "liquids", what are you talking about?

A. I'm talking about the free liquids that are separated by a mechanical separator.

Q. Okay, is that free product, commonly referred to as free product?

A. I think she referred to it is a free product, but it's free liquids that are flowing with the gas that -- You're not stripping the gas, and you're mechanically separating them with a separator.

Q. Okay.

A. And when the Dakota production came on, well, it brought on a different problem than we had ever experienced before, because now we were dealing with higher pressures, and also we were dealing with wells that made large volumes of free hydrocarbon products. You know, several hundred barrels a day was not uncommon.

So obviously the operators were not very interested in sharing all of that free hydrocarbon production with Southern Union, and so they began wanting to install their own equipment, rightfully so.

So we began drawing up our contracts that said, Okay, you put the equipment on, you recover the free hydrocarbons, you deliver to us a gas that is basically clean of any free hydrocarbons.

The problem was, there's simply -- the manufacturors of the equipment and the things that were available to the operators simply would not do the job.

So what was really happening was, in order to protect our dehydration equipment, Southern Union would -- I would specify dehydrators that were equipped with pretty elaborate separators, because that was the only, really, equipment that you had that had heat applied to it, where it would operate during the winter and the cold weather.

And so the cost of the equipment to -- And what

we would do, the operator would go out there and they might put on a WTKO, a National separator that had no heat in it, but it was a separator, and then put a dump line to their tank, and then we would put our dehydrator on with a very sophisticated separator and turn around and dump all the liquids back to the operator's tank.

So they had the best of both worlds. You know, we were -- Southern Union actually was equipping the wells with the equipment necessary to have a liquid, but we weren't getting any of the revenue from it.

Q. Why did Southern Union put this equipment?

A. Because you have to remove the free hydrocarbons to dehydrate.

Q. And why is that?

A. Well, because hydrocarbons entering the dehydration system will cause upset, loss of glycol, simply -- a dehydrator won't tolerate large volumes of hydrocarbon. It can tolerate a very little amount before you get upsets, foaming glycol, lots of problems.

Q. Okay, and why is this loss of glycol a problem?

A. Well, glycol is very expensive, for one thing. And secondly, if you lose your glycol you lose your ability to dehydrate. And so it's a major concern, is keeping your glycol clean and not losing it.

Q. Why is it that you want to have gas dehydrated?

A. To remove the water vapor so that it prevents hydrates in the pipeline system.

Q. And why is that important?

A. Well, as Toni alluded to, hydrates will stop the flow of gas.

Q. And how does that happen?

A. Well, a hydrate is a rime ice that forms in a pipeline system, and if you get a hydrate one of the consequences of it is that once that hydrate's formed, in order to get it out you generally have to blow your system down, and you're going to lose all the gas that's contained in that pipeline that you're blowing it down. If you can catch that hydrate prior to it shutting off the flow, you might get methanol to it or something like that. But a hydrate is a major problem in operating a pipeline system.

Q. And what was the -- Again, what was the purpose that Southern Union put the dehydrators on?

A. To remove the water vapor -- You know, a hydrate is a function of pressure, the right type of gas, generally a gas that's a high-BTU gas and has some free -- has hydrocarbons in a vapor phase contained in it, plus water vapor. And if you get the right temperature and those conditions, you know, hydrate's going to form. If you can remove one of the conditions, like water vapor, you can prevent it forming.

And so the dehydrator would remove the water vapor.

Q. All right. You've brought us up to the point in history where Southern Union had installed some fairly sophisticated dehydration equipment on its facilities.

A. Right.

Q. Tell us what happened after that.

A. Well, when the Southern Union management began to discover how much it was costing them to hook these wells up and how much money I was spending buying this equipment, well, they decided they wanted to attempt to -- whether a different solution to this.

So we had a meeting in Farmington and had the chief engineer and other people involved. And the discussion was, what could we do to set it up so that we were not having to buy these real sophisticated separators on our dehydrators?

And I said, Well, you know, really all we need to do is have a sensing element.

And the chief engineer wanted to know what that was.

And I said, Well, there's no such thing as a mechanical separator that will stop all carryover. There's going to be a little bit come over, the very best that are built, and there's going to be maybe some condensation

occur.

So we have to have a device that will tolerate a little bit of free hydrocarbon liquids and be able to get rid of it, because you've got to get rid of that to protect your dehydrator.

But If the rate of free hydrocarbons coming over to our dehydrator exceeds a set rate, like there had been some failure with the operator's equipment or else the equipment isn't proper, it's not being operated properly, whatever reason, we're simply going to shut the well in till they correct their problem.

And so the chief engineer said, Well, that's a very great idea. He said, We're not going to buy any more dehydrators with separators on them. From now on, they're all going to be equipped with a sensing element. Well, that's fine and dandy.

So come Monday morning, I call all the manufacturers up and said, we've got to have a dehydrator with a sensing element.

And they said, We don't know what you're talking about.

And I said, I don't know what I'm talking about either, but we've got to have it, because we're not going to buy any more dehydrators with separators on them, which upset a bunch of manufacturers.

Well, anyway, to make a long story short, I ended up designing what became the first sensing elements, and it basically was a small separator, not really designed to handle -- maybe better classified a scrubber. Not really designed to handle the full well stream or anything like that, but to catch the free hydrocarbons that might carry over. And it was designed with a small orifice in front of the dump valve so we knew how much we had to dump.

And boy, it created more trauma than anything I have ever done. Not only were the operators tremendously upset because their wells were getting shut in, but there were manufacturers that were terribly upset at the same time because their equipment wasn't functioning the way it should.

So the sensing-element dehydrator was born at that time and carried right on through, and it's the type of dehydrator that PNM had installed on their wells, for exactly the same purpose.

Q. Let's talk a little bit about what work you've done with PNM. What were you asked to do in this case?

A. Well, I was asked to explain the equipment and how it operated and --

Q. All right. In connection with what you were asked to do, what things have you done?

A. Well, I've been out to the Hampton 4, and I've

looked at the equipment that was there. I've interviewed the field pressuremen that were working for PNM at that time, to find out what type of problems they've had. And I have prepared a P&ID, and I've met with you all a couple of times.

Q. Okay. I'd like to have you look at what we've marked as Exhibit 10, if I may. Mr. Heath, you may need to get up to explain this, but can you tell us what we have depicted here on Exhibit 10?

A. Well, the picture is a picture of the present production unit installed on the Hampton 4. Okay, I think it's a very, very sophisticated piece of equipment, very good piece of equipment.

Q. Is that the actual unit that's installed?

A. This is the actual unit, and the way they're operating it and the whole setup is first class.

Q. And the upper portion, the drawing, what is that?

A. This is just a little schematic of the combination production unit.

Q. Okay. Can you tell us where this particular piece of equipment fits in, in the whole process of natural gas production?

A. Well, the purpose of this piece of equipment is to provide the heat for operating and turning the well on, provide the equipment for controlling any overpressure or

anything like that, to separate the free hydrocarbons that are coming into the unit, and generally -- 99-percent-plus, you shoot for; we guarantee it to be 99, and it will generally be better than that.

And then in turn to process the free hydrocarbons to maximize the recovery. In this case we're going to stage them from a high to an intermediate pressure and then separate the oil and water components, put the water to a disposal pit and the free hydrocarbons to the storage tank.

Q. So with regard to this piece of equipment, you talked about its ability to separate, and I think you used the -- you said 99-percent-plus. What do you mean by that?

A. Well, we would -- You know, no mechanical separator you could guarantee it's going to remove a hundred percent. You're going to have to strip it to do that. But commonly you would expect it to do 99 percent. We would say if it couldn't do that, we weren't doing a very good job.

Q. Okay. So in other words, does that mean it takes 99 percent of the free product out of the gas?

A. Free product out of the gas, right.

Q. And is that kind of the lowest acceptable level of performance for one of these?

A. Well, we wouldn't be happy -- I think if you experienced any appreciable carryover of free hydrocarbons,

your unit's not doing the job. You know, commonly this piece of equipment -- There's been a lot of dehydrators that had just this piece of equipment on them in front of the absorber. That was the only separation that we had. And you know, we had no problem with glycol loss or carryover into the absorber. If we did, we'd go out there and find out what the problem was.

Q. When you're talking about an absorber, are you talking about a dehydrator?

A. The absorber on the dehydrator, correct. So this piece of equipment should clean it up very, very good.

Q. If that equipment is operated properly, would you expect to get much in the way of free product downline towards the dehydrators?

A. No, I wouldn't.

Q. Okay. Let's look at Exhibit 11, which I believe is behind this. Can you tell us what that its?

A. That looks like a picture of also the dehydrator that was installed on the Hampton 4.

Q. And the upper portion?

A. It's just a schematic of a dehydrator, not specifically the Hampton 4. Fairly old design, but nevertheless it's a good dehydrator.

Q. Okay. Tell us what the purpose of the dehydrator is.

A. Well, just this part, which is the dehydrator -- If you'll notice, there's no separator on it. Dehydration just in itself constitutes an absorber, a reboiler, heat exchanger some type of a pump to lift the -- to pump glycol up against the pressure, and a contact system and -- to remove the water vapor.

Q. Okay. And is there also another separator that's shown in that picture?

A. There is a separator here, a sensing-element separator.

Q. Okay.

A. I'd like to define that as not being a full separator in the sense that we would normally have put separator on to handle into our wellstream.

Q. Right, and I'd like you to talk about that, expand upon that a little bit, what you mean by a sensing-element separator.

A. Well, the P&ID sort of shows what the situation is, but --

Q. Okay, well let's look at the P&ID. That might be the best place to start. I believe that's Exhibit 12 -- It may not be Exhibit 12, let's see. Exhibit 16, pardon me. And I believe we've also got the schematic in the book as well.

MS. RISTAU: Is there a copy of the P&ID that

could be passed up front or anything, for them to be able to follow --

MR. ALVIDREZ: It's in their book.

MR. RISTAU: Okay, right.

THE WITNESS: Do you want me to trace the gas flow or --

Q. (By Mr. Alvidrez) Yes, what I'd like you to do is take us through the process from the point at which the gas comes out of the wellhead and then runs through the surface equipment to the meter house.

A. Okay. This is all schematic, of course, and this is the wellhead, and the red line is the gas flow. The gas -- The production unit has a method of controlling the gas temperature. I can go into detail and tell you how it happens.

It also has a device to control pressure.

The gas flows through this equipment and then up into a high-pressure two-phase separator, where the total liquids are knocked out, collected, and then are dumped back into this low-pressure vessel. This one may be operating at several hundred pounds, this one may be operating at maybe 50, 75, something like that.

And the gas flows out of this vessel and, in this Hampton 4, comes into what we call the separator, passes through it into the absorber where the gas is contacted

with glycol, and out of the absorber, in through the meter run and on down the pipeline.

Q. Okay. And when you talk about the meter run, is that what we refer to as the meter housing, that's inside the meter housing?

A. Well, you have the meter run, and then the meter itself --

Q. Okay.

A. -- and the orifice.

Q. The meter runs --

A. Over into the --

Q. -- the pipe runs to the --

A. Right, right, right.

Q. And in a situation as we have out at the Hampton 4M, at what point does title pass to the gas?

A. Well, the title passes when it flows through the orifice.

Q. That's --

A. That's the traditional point it changes at.

Q. Okay. With regard to how this system would work, if -- How is this system designed to operate in the event there is a substantial amount of free product that somehow wasn't captured by the separator and heads down the line to the separator-dehydrator combination?

A. If something happened -- The idea was that if

something went wrong with this piece of equipment, things that can happen to a piece of automatic equipment, and it no longer was meeting that 99-percent efficiency and started carrying over the liquid hydrocarbons, when they come into this separator here, it's designed so that the liquid levels -- I will mention that the later models of these, once the equipment that is manufactured was found to be pretty good, people not so terribly concerned about being able to monitor exactly what was being done, they no longer used that little orifice, they -- The motor valve that's dumping the hydrocarbons off this separator, it simply uses a jack screw that you screw down, and it restricts how much it can dump.

Anyway, this is the level control, puts out a signal, causes that motor valve to open, and it begins to dump whatever's coming into it, but it's a relatively small amount.

And if the output of the level control continues building, then there is a three-way switch that it would be tripped, and it would, as the pressure builds -- For example, if the motor valve is fully open at 20 pounds and the level control output pressure keeps building and it builds to 30 pounds, then it would trip this switch that would send the signal to a valve and shut the well in.

And then as the -- The well shutting it here, the

sensing-element unit, if it shuts in it will begin to build pressure back through the whole system, and then the automatic pressure control on the production unit shuts in, and that shuts the well in.

Q. And what does that mean in terms of the volumes of free product that could possibly run through a dehydrator and be discharged?

A. Well, it would be relatively small amounts. You know, under normal operations you probably -- gosh, you would get -- I had that figured out. Maybe -- I lost my figures. But under normal operations it's going to be a very small amount, and you're going to rarely see this separator dump.

When it does dump, it may collect for a week or more before it dumps anything. When it does, it may dump a gallon or more at that time, but that's a collection over a long period of time. And -- Did I address your question, or did I get lost?

Q. Well, I wanted to get an idea of the volumes. If this -- Well, let me ask, would you expect the dumping of free product to occur with much frequency?

A. No, not unless there was some type of mechanical failure.

Q. So in the absence of a mechanical failure in the -- When you say "mechanical failure", what piece of

equipment are you talking about as having the failure?

A. A mechanical failure with the piece of equipment that Burlington has installed to take care of this product.

Q. The combination, you mean?

A. Right.

Q. Okay. So if that's operating properly --

A. Right.

Q. -- would you expect to see much free product ever hit that dehydrator?

A. No.

Q. And with regard to -- We talked a little bit about the amounts that might be admitted, and you said maybe a gallon over some period of time, but with regard to the amounts that would actually be admitted into the pit, would there be any loss associated with the product flowing into the pit --

A. Yes.

Q. -- just by the process of being discharged and also sitting in the pit?

A. Right. Well, that's a pretty key point, is that -- say if you dumped -- Say if this high-pressure separator contained a gallon that it was going to dump --

Q. All right.

A. -- particularly if it was Dakota product, which is a very high vapor pressure product, and we're going to

assume that we're operating at some type of elevated line pressure, the function of reducing that pressure from the flowing line pressure down to atmospheric pressure, you get flash.

Q. Okay, what does that mean, that you get flash?

A. It means that a lot of products flash it off into the atmosphere. We've run modeling on wells for the -- just in the step of taking the hydrocarbons from the high-pressure separator down to the stock tank, you get -- the flashing may be 50 to 60 percent of what was contained in the high-pressure separator at the time it dumped.

So a big part of what would have been dumped in that pit would have been flashed off immediately when it dumps. And then the balance of it would continually weather, so there's no way you'd ever reach a partial pressure balance on it. So the residual left, maybe guess 10 percent ultimately.

Q. Okay. Have you -- You indicated you've talked to some, I guess, switchers --

A. Yeah.

Q. -- out at -- who've been out at this site. Can you relay to me why you wanted to talk to them?

A. Well, I wanted to find out what experience they had had with operating, not only dehydrators, but the experiences they had in the whole system.

And the first one I talked to -- or not necessarily the first one, but the one that had operated the units and equipment prior to 1995, and 1995 to date, he told me that he had occasion to get -- found the well shut in from the sensing elements, that --

Q. And what would that indicate, that the well was shut in because of sensing units?

A. Well, it would indicate that something mechanically had failed, something had gone wrong, you've got a carryover that is excessive, and it shut the well in.

Q. Okay.

A. He had also found during the winter months, on occasion, some free product in the pit. Not much, but some. Never saw any during the summer. He said that he had no operating problems at all with the dehydrator, no excessive glycol loss, anything like that.

Q. And why is that significant, this excessive glycol loss?

A. Well, because -- if we -- Like I was saying, this separator isn't necessarily designed to be a sophisticated separator; it wasn't really intended for that. It's already -- you've already gone through a mist extractor and things like that by the time it gets to this point, although it does have a mist extractor in it.

And if we haven't gotten a continual sensitive

carryover into this, the odds are very good, if we're going to do this up there, it also got it through the glycol, and when that glycol lost, contamination of the glycol, oil going up the still column -- They didn't experience any of that, no problem with the glycol.

Q. And what does that mean with regard to the amounts of free product that might have been discharged through the dehydrators?

A. Well, if you had experienced something like that, if you had got that volume coming through, you would have obviously had some problems with the pit, more than what I think occurred, and you'd have lost the glycol and probably the pump, and after steaming the unit out, the chances are very good.

You see, none of the three fieldmen I talked two -- two of them had operated after 1995 and one of them prior to 1995 -- had any problems with the dehydrators, no glycol loss. One of them testified it was the best unit he had on the ground.

Q. And can you draw any conclusions based upon that in terms of the relative volumes that come through PNM's dehydrator?

A. The conclusion I can draw from it is the unit was -- PNM's unit was operating in the way it was designed to operate.

Q. And what does that mean with regard to the potential volumes that could have been discharged by PNM's unit?

A. It should have been very little, because during normal operations there should have been very little carrying over, and when they experienced any type of mechanical failure it shut the well in.

Q. I want to talk a little bit about the relative control that the pipeline company such as PNM and the producer such as Burlington has over this equipment. Can you tell us who controls what, in terms of the equipment?

A. Well, Burlington has absolute control over the recovery of the free hydrocarbons. That's what they're -- what it's equipped for, they're set up for, they've got the tankage, they're being paid for.

Anything that comes over to PNM is something that PNM absolutely did not want. And if anything comes over and creates a problem for them, they've simply been victimized because they have no control over it at all.

Q. Okay. If a combination production unit is being properly operated by a producer, would you expect to see large volumes of free product hit the dehydrator?

A. Not unless they had a mechanical failure of some type.

Q. Again, the mechanical failure would take place on

what piece of equipment, or --

A. It would occur with the production unit, you know, because these -- Several things could create it. Excessive carryover. But it would be something that was out of the ordinary. It wouldn't be something that would routinely happen.

Q. Okay. We have some other exhibits that I believe are in the exhibit volume, and I'd like to ask you to refer to PNM Exhibit 15.

A. Okay.

Q. Did you prepare this exhibit?

A. Yes, I did.

Q. And can you tell me what this exhibit represents?

A. Well, it's a comparison of the gas-oil ratio on both the Mesaverde formation and the Dakota formation. I got production figures sent to me, and they looked sort of strange, what was happening, and I decided, well, maybe this is a way to present what was occurring on the two sides.

Q. Well, first explain, what is oil-and-gas -- What do you mean by oil-and-gas ratio?

A. Well, what I did was just divide the volume of gas that had been produced for a year, according to the report, by the volume of oil that had been produced, so we determined the amount of gas per barrel of oil.

Q. Okay. If we go down to 1985, let's -- I guess MV stands for Mesaverde?

A. Yes.

Q. And there's a number, 327MCF/BBL. What does that mean?

A. Which year?

Q. 1985.

A. Oh, 1985. Okay, that says that there's 327 MCF of gas, has been measured per one barrel of oil producing.

Q. Okay. And why was it that you created this oil-and-gas ratio comparison?

A. Well, in looking particularly at the Mesaverde side, it looked like there were some very strange results, because they had some years that there was zero recovery --

Q. When you say --

A. -- of liquid hydrocarbon.

Q. When you say "zero recovery", what do you mean?

A. There was no reported recovery of any oil, liquid hydrocarbons, during two particular years. And then it's sort of indicating, looking at the barrels of liquid hydrocarbons that were produced, that some years there was quite a bit and some years there was practically nothing. And it just looked strange, so I decided I would plot it to see what kind of results I got.

Q. In your experience, is something like that fairly

common with regard to production ratios?

A. No, I would think something like -- that -- if you look at the Dakota, it looks pretty normal. You know, it's going to go up and down a little bit, and you can't say it's going to be the exact figure. But, you know, it's fairly constant, except for two years which are sort of anomalies, 1990 and 1995.

And so I would have expected that you would have had something like this on the Mesaverde side. I have no explanation for why you're getting figures that seemingly are off the page on some of the years as far as the gas-oil ratio is concerned.

Q. We have a couple of other exhibits with regard to the various ratios, specifically Exhibits -- I believe it's 13 and 14. I don't know if I can see those very well, Mr. Heath, but I'd like you to take a look at what we've got up on the board as Exhibit 13, and this is a graphic depiction of combined production with regard to gas and also with regard to free product or oil.

Are there any conclusions you can draw with regard to the relative production of gas, as opposed to the oil production?

A. Well, that part is sort of hard for me to interpret, but it does show that the gas production was relatively constant during that period of time. And then

the oil production seemed to be pretty well all over the chart, because I was following those dots and there are a couple of periods of time when it looks like there's just a complete anomaly of -- or for some reason the gas was still being produced and there were very, very small volumes of hydrocarbons, so -- in relation to the amount of gas that was being produced.

Q. Okay, let's go on to Exhibit 14, and I'd like to ask you to look at that. That's another graphic representation in terms of oil-and-gas ratios, and there's a period of time there where it shows the ratios decrease fairly substantially in terms of oil over gas.

A. Right, right, during the period of January -- 1995, 1996, is that the time line you've got?

Q. Right.

A. Okay.

Q. Is that the type of production ratio you would expect normally?

A. No, I would have -- Normally, you're going to expect it to be fairly level. I mean, it's -- Gas-oil ratios do change, but you see -- you shouldn't get dramatic swings from year to year, which is sort of the experience was experienced on the Mesaverde.

Q. Okay.

A. You didn't really experience that on the Dakota

except in two years where it seemed like we got an anomaly.

Q. What are the potential causes? What things can happen that might cause that gas-oil ratio to deviate so much?

A. Well, I'm not privy to know, I don't know what type of separator they had on the Mesaverde side at the beginning. Several things could have created this, and it would all be conjecture.

You know, maybe you had a leak in the Mesaverde tank and it was just leaking the oil off.

During the two years where they had zero recovery at all from the Mesaverde and the Dakota went up also, the gas-oil ratio, I found that really hard to explain. The only thing I can think of might have done that was change of personnel that was operating the well, and somebody was operating it different, change the discipline of how they were doing the equipment.

It could have been that -- how they were trying to get the well to produce. Maybe they were having to blow into the atmosphere and wasting most of the product. I'm not sure.

Q. Okay. With regard to these -- the measurements of the product, with regard to liquids that are collected by the producer, how are those typically measured?

A. Well, they're generally measured by the gauger or

the fieldman measuring the amount of liquid that's contained in the stock tank.

Q. Do these liquids, as free product, have any value?

A. Oh, absolutely, you like to have a bunch of it.

Q. What is it used for?

A. What, the product?

Q. Yes, sir, the free product.

A. Well, it's sold to some oil purchaser as a hydrocarbon product, you know, as an oil or a -- light ends or -- Some of it's very valuable, particularly the light ends.

Q. And as between the pipeline company and the producer, when the pipeline company is buying natural gas, who claims ownership in those liquids?

A. Well, the contracts now, generally the operator puts on their equipment and it's their product, and they put the equipment on to recover it and tank it and market it.

MR. ALVIDREZ: Okay, we'll tender the witness for cross-examination.

MR. CARR: We have no questions.

EXAMINER ASHLEY: Mr. Carroll?

MR. CARROLL: Yes, Mr. Examiner, I have a couple questions.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Heath, did you testify that the dehydrator discharges small amounts of free product over time?

A. The way this dehydrator was designed, the sensing-element unit, our separator, would collect hydrocarbons, and it might take several days but at some point it would dump some hydrocarbons that had collected in that separator, correct.

Q. And then based upon these production figures, have you calculated the total possible amount that might have been discharged over the life of this well?

A. Well, I think we came up with a figure, assuming everything was 99 percent, that maybe 200 gallons a year or something like that would be a reasonable figure.

Q. Now, if the whole system --

A. Am I wrong on that figure?

MR. ALVIDREZ: I believe so.

THE WITNESS: Am I correct?

MR. ALVIDREZ: No, I think --

THE WITNESS: I didn't calculate them, but that's what I remember saying, something to that effect.

Q. (By Mr. Carroll) And Mr. Heath, if the whole system wasn't 100-percent efficient or there's more free product hitting the dehydrator than normally occurs, what

happens to that free product?

A. Okay, if the carryover rate exceeds what the unit is designed to dump, and it's got the motor valve restricted so it can dump just small quantities, and that carryover rate begins to exceed what is being allowed to dump and the level begins to rise -- and it doesn't have to rise very much, because these are not floats; these are displacers -- then the output of the level control begins to build up and the motor valve pull open, and if that -- if you still are not getting rid of the hydrocarbons with that motor valve wide open, restricted what it can dump, but it's never as -- it's wide open as you're going to allow it to happen -- then a further buildup of the output of that level control will shut the well in, until somebody comes along and corrects the problem.

Q. And what rate could the dehydrator dump at, if that occurs?

A. Well, see, this is the Achilles' heel that I was describing, wherein we took the orifices out. And as long as we had the orifices, I could have told you exactly because I could calculate it. But when you're using a screw to turn it down and determine how much you're going to let it dump, that's sort of a subjective judgment.

Now, I did trip the level control while I was there to see how much that valve would dump, and it was a

lazy stream; it wasn't going to dump much.

MR. CARROLL: That's all I have.

EXAMINATION

BY EXAMINER ASHLEY:

Q. Mr. Heath, in the case of the buildup of the hydrocarbons coming over into the dehydrator, is there any kind of blow-by valve or anything if it kind of got out of control, that it would automatically just go right to the pit?

A. No, no, it wasn't -- Any hydrocarbons that went to the pit would have had to have traveled through that restricted valve.

EXAMINER ASHLEY: Okay. Mr. Alvidrez?

MR. ALVIDREZ: Just a follow-up question, a couple follow-up questions.

FURTHER EXAMINATION

BY MR. ALVIDREZ:

Q. You were asked about the efficiency of this equipment. Based upon your inspection of the equipment and the discussions you had with the prior operators, was there anything to indicate that the combination unit wasn't operating as it was intended at a very high efficiency, 99 percent or more?

A. No, the only indication that you have that there was any problems at all with any of the equipment, as far

as what the fieldmen knew was, one of them testified that he did find the well shut in on occasion. The other said after 1995 -- and this is indicated in the gas-oil ratio there, 1995, the guy -- the people that operated then had no experience with any problems with the well being shut in, nor had they observed any hydrocarbon -- free hydrocarbons in the pit.

Q. And if there were a problem with the efficiency of the production unit, whose responsibility would that be?

A. Well, it's the operator's equipment.

MR. ALVIDREZ: That's all the questions I have.

EXAMINER ASHLEY: The witness may be excused.

You may call your next witness, Mr. Alvidrez.

MR. ALVIDREZ: Yes, we would call Maureen Gannon to the stand.

EXAMINER ASHLEY: You may proceed.

MAUREEN D. GANNON,

the witness herein, after having been first duly sworn upon her oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ALVIDREZ:

Q. Ms. Gannon, would you please state your name for the record?

A. Maureen D. Gannon.

Q. And Ms. Gannon, were are you employed?

A. I'm employed at PNM in Albuquerque.

Q. And what is your position with PNM?

A. My current position is project manager of PNM's Gas Assets Pit Remediation Program.

Q. And can you tell me what your responsibilities are as project manager?

A. My responsibilities include the management of all resources related to the program. That means managing excavation crews, managing our groundwater program, dealing with the day-to-day budget, reporting to the regulators, tribal entities and working with companies, interested parties and operators.

Q. All right, and how long have you been the project manager at PNM in this capacity?

A. I served as technical project manager from 1995 till January of 1998, and since January of 1998 I am now the project manager on the project.

Q. And tell me a bit about your education, starting with college.

A. I have a bachelor's of science in chemical engineering, 1983, from New Mexico State University. I'm currently pursuing my MBA. I'm 24 months into a 28-month program with the University of Phoenix in Albuquerque.

Q. All right. And I'd like to talk a little bit about your work experience following graduation from the

State.

A. From 1983 to 1987 I was employed at Rocky Flats in Golden, Colorado, as a process engineer.

In 1987 I moved to Albuquerque and began working with an environmental consulting firm, and I worked there until 1997 -- I'm sorry, 1996, when I became an employee of PNM.

Q. And what types of projects have you worked on, environmentally related?

A. I did an extensive amount of permitting and compliance at various facilities throughout New Mexico and some outside locations. I have worked extensively at gas plants in the Permian Basin, doing storm-water-pollution-prevention plans, FPCC plans, I assisted with -- a field participant on -- at two gas plants where we had groundwater contamination and were doing treatment of groundwater and monitoring, et cetera. I have done discharge plans for compressor stations.

Q. All right. What responsibilities have you had with regard to groundwater -- sites with groundwater contamination?

A. Since 1995 I have conducted technical management of our 30 groundwater sites related to the Pit Remediation Program. We are primarily pursuing natural attenuation through site investigation, monitoring wells, installation

and then monitoring of those wells. We are doing free-product recovery, or were, at the Hampton 4M, source removal of grossly contaminated soil, et cetera.

Prior to that, with the environmental consulting firm I worked with, I worked on similar systems related to BTEX plumes in groundwater.

Q. Have you had responsibility or experience with regard to investigating groundwater contamination in terms of its extent?

A. Yes, I've been an active participant and in fact have installed several monitoring wells with a hand augur myself, so...

Q. Okay. And what about with regard to installation of remediation equipment?

A. I have participated and overseen installation. It's not necessarily my area of expertise, but I have managed those projects and brought in the experts that needed to be there and managed those people.

Q. Have you been out to the Hampton 4M site yourself?

A. Yes, I have.

Q. About how many times?

A. About how many times?

A. I would say, you know, greater than 15.

MR. ALVIDREZ: Okay. I would like to tender Ms.

Gannon as an expert witness.

EXAMINER ASHLEY: Mrs. Gannon is so qualified.

Q. (By Mr. Alvidrez) Ms. Gannon, I'd like to find out a little bit more about your responsibilities --

MR. CARR: In what area -- Excuse me. In what area is she being qualified?

MR. ALVIDREZ: Basically with groundwater contamination.

Q. (By Mr. Alvidrez) I'd like to find out a little bit about your responsibilities specifically with regard to the Hampton 4M site. Can you tell us what they are?

A. At the time that we conducted our pit excavation, I was the technical project manager. So basically, I provided the technical direction for our field crews, as far as their methodology and what they would be doing on site.

Q. All right. And is the Hampton 4M site being handled pursuant PNM's Pit Remediation Program?

A. Yes, it was, until about a week and a half ago.

Q. Okay. And what happened a week and a half ago?

A. We were informed by Burlington -- or I'm sorry, by Williams, I believe, that our free-product recovery system in MW-6 had been removed.

Q. Did you receive any prior notice from anyone that this equipment was going to be removed?

A. I had talked to Ed Hasely at Burlington. He had indicated that they were going to commence with their sitewide excavation and that at some point, you know, they would be removing our monitoring -- or some of our wells within our monitoring-well network, and we would need to remove our product-recovery system. But we were informed a few days later that that had taken place without our knowledge.

Q. Okay. I wanted to start out with regard to PNM's first investigatory activities with respect to the Hampton 4M site. Can you tell me when that occurred?

A. We conducted a site assessment on April 23rd, 1996.

Q. Okay. I believe that the site assessment is included in PNM Exhibit 26. I'd like to refer you to that.

Now, Ms. Ristau talked a bit about the site-assessment process. I'd like for you to tell us in a little more detail as to what procedures are involved with regard to site assessment at an unlined-pit site.

A. Basically, this is a visual observation of the site, what equipment may be out there if we have a pit. It also includes, you know, just noting physical obstacles in case we need to bring equipment on, et cetera.

We also conduct an assessment in the pit, usually with a hand augur, boring down three to four feet, to take

a sample. In this case, it indicates that the pit is saturated, which means -- we did not take a sample -- and that would mean that there were fluids in the pit. And so -- and the presence of the strong hydrocarbon odor.

So right away, that flags us that this pit needs to be addressed, and we need to come back.

Q. Okay. And when you talk about fluids in the pit, what are you talking about?

A. Well, it's -- Most likely, this is free-standing fluids. It could be precipitation, it could be water. This indicates the soil description is a dark brown, so the soil was visually stained. So, you know, based on those observations, you know, our technician indicated that we needed to return to this site.

Q. Are the observations that were recorded fairly typical of what you see --

A. Absolutely.

Q. -- in unlined pits? I mean, so --

A. Yes, we see fluids in other pits.

Q. Okay, these thousand pits we're talking about, many of them have this --

A. Yes, we have it.

Q. And because -- just because you have stained soil or fluids, does that translate into a situation where there has been free-product contamination?

A. No.

Q. In your experience, is the free-product contamination something that is almost unheard of?

A. It's very rare in our, you know, thousand-plus pits to date.

Q. Okay. There is also a Pit Remediation and Closure report attached, and I'd like for you to tell us what this is and what this shows.

A. Upon completion of our assessment and/or excavation and source removal, we will complete a Pit Remediation Report, and this is actually a form that OCD has generated which we use.

And we use it also as a documentation trail. And in fact, this is not the actual Pit Closure Report form; it's something that the technician was using to document his work.

So it's a working document, but it also is used with our final results and submitted to OCD at the conclusion of our excavation and remediation.

Q. Okay. There were -- There have been a number of questions of Ms. Ristau concerning the extent to which the pit at the Hampton 4M site was cleaned up. Can you clarify for us what process was involved and the extent to which this site was actually cleaned up?

A. Yes. I don't have the field notes in front of

me, but I have a recollection.

Q. They're actually attached.

A. Are they attached? I'm sorry.

Q. Yeah, to the closure report.

A. Okay. Once we conducted our assessment, we came out on April 24th of 1996 to begin our excavation, and basically we used a track hoe to dig the soil.

You know, the first thing we do is, of course, our safety concerns and have a health and safety meeting, all of those things initially, taking data, we commence excavation.

This -- The field notes indicate that our technicians were able to go to approximately 11.5 to 12 feet across the bottom of the site, but due to physical constraints related to the fact that we had a 15-foot dropoff on the north side of the excavation and equipment on the south side, and the occurrence of three cave-ins or sloughings in the excavation, we ceased excavation at 12 feet in depth.

Q. Okay. Are there any records kept or any notes made with respect to how clean the pit was?

A. Yes, if you refer, I believe, to the third and fourth page, we basically do a profile, the track hoe allows us to profile the pit wall, so we get an indication as we're moving down, say, every five to ten feet, what

contaminants may be present. We're using a photo-ionization detector, a field-screening tool, to gauge the hydrocarbon vapors.

Q. Okay, tell me a little bit about the photo-ionization detector, or PID, I guess, is what it --

A. Right. Well, again, this is a field screening tool; it's not accurate but allows us to get a sense -- or completely accurate or analytically, laboratory accurate. But it allows us to gauge where our excavation is at in terms of contamination. You know, PID readings versus lab results, there's no conclusive correlation. But we know typically if we have 1200 ppm on a side wall, we definitely have contamination and need to deal with that.

In the instance of this pit, it appears or as documented on our north -- I'm sorry, on our south, west and east walls at 11 -- 10 to 12 feet, we were below 100 ppm on the PID. And in fact, according to OCD/BLM guidelines, we could use that as -- That is considered below guideline standard for soil. So we knew our south, west and east walls were clean.

We had documented contamination on the north wall, which again is the edge of the well pad, approximately 800 ppm at 12 feet. That is by no means saturated, we see that all the time, and if you take that to a lab many times you'll see a much lower BTEX reading.

In the bottom of our pit we document approximately between 900 and 1200 ppm on the PID. Again, you know, this is -- we recognize that the pit bottom is still contaminated, but it was certainly not saturated.

Q. Okay, what is the significance of "contaminated" versus "saturated"?

A. Well, when we talk about "saturated", when we're talking about soil being saturated, it has a very grossly -- you know, very dark, in most instances very oily, with an extremely high or strong hydrocarbon odor.

Q. Does it mean it's soaked or --

A. Many times, yes, that it's soaked, wet to the -- you know, visually.

Q. And is the finding that the soil is not saturated significant at all in terms of making a determination as to whether free product underlying this site came from that pit?

A. Well, it's not definitive, but it -- you know, based on the number of pits that we've dealt with in the past three years, it's -- if we don't have saturated soil, I mean, that would indicate to us that there is not free product in our pit.

Q. Okay. With regard to the work that was done at this site, how would you characterize the extent of the removal of the contaminated soil?

A. We had removed approximately 300 cubic yards, and that is about an average when we're dealing with soil contamination in dissolved phase.

So it seemed to be very straightforward. We did not anticipate groundwater here. And typically if it's not a groundwater site, we'll look at removing grossly contaminated soil, but the OCD allows us laterally to leave some contamination in place.

Q. What do you do with the soil?

A. In this instance, it was actually trucked off location to another location within the same lease and land-farmed on site.

Q. And what is the land-farm process?

A. That's spreading the soil in 6- to 12-inch lifts and discing with a tractor, say, two times a week. And during warm and spring and summer months we experience great volatization of hydrocarbons, and with the oxygen and sunlight the soil will biodegrade on its own.

Q. Okay. Once the excavation was completed here, what then happened with regard to this pit?

A. As directed by OCD, when we leave contamination in the bottom, we come back. And typically, we'll come back in the winter months, because that's our shut-down period for pit excavation, and we bring hollow-stem augur drill rig, and we'll conduct drilling to profile vertically

how the contamination moves or where it's at.

The Ocd allows us to essentially close a pit when we reach a clean bottom with the drill rig, when we reach bedrock and can sample that bedrock. Or, if we should reach groundwater, then it kicks into a groundwater site.

Q. All right. What happened -- Well, let me ask, is this pit just left open, or what happened?

A. No, in this instance, according to OCD/BLM guidelines, you know, we immediately -- when we excavated we came back with clean fill from a wash location and put in clean soil, into the pit. And we usually mound the pit to account for shifting, et cetera, and then we'll leave it and then come back, as I said, in the winter months to perform our vertical-extent work.

Q. With regard to where the dehydrators were located, Williams dehydrators, which one of the walls -- we've talked about north, east, west wall -- which one of the walls would the dehydrators be above?

A. That would be the south wall.

Q. And what were the indications about the extent of contamination --

A. Well, in the bottom, at the extent of the extent of the excavation of 12 feet, we're seeing 50 ppm, based on a PID reading.

Q. Okay, and what does 50 ppm mean?

A. Well, that's -- You know, we're seeing 50 parts per million BTEX. Essentially a PID picks up volatile hydrocarbons and correlates to BTEX in the bottom of the pit.

As I indicated, OCD/BLM guidelines allow us to close the pit based on a PID reading of less than 100 ppm.

Q. Okay. I wanted to ask a little bit about PID readings. You indicated they're not laboratory accurate. But in terms of overstating or understating the results, how do they typically read?

A. They predominantly overstate results.

Q. Okay. You indicated that at this site PNM did come in and perform a groundwater -- a boring to groundwater. And can you tell us when that occurred?

A. The boring to groundwater occurred in January of 1997.

Q. All right, and what was the result of that boring?

A. I believe they bored to approximately 27.8 feet and hit water. That was when they encountered first water. We don't have good PID down through the soil column, but at 27 feet they -- once they hit water, they ceased drilling, took a bail of water, and when it came up there were two inches of free product in the bailer.

Q. Okay, and what does that mean when you say

there's two inches of free product in the bailer?

A. Well, you're seeing two inches of free-phase, non-aqueous phase liquid on top of the water in the bailer.

Q. Okay. One thing I skipped over a bit with regard to the work that was done at this site or PNM's involvement at this site was the issue of cease discharge. And can you tell us what cease discharge means?

A. Cease discharge is essentially to stop discharge into an unlined surface impoundment.

Q. And when cease discharge is achieved, is there any further source, from the dehydrator, anyway, with regard to soil or groundwater contamination?

A. Not in my experience.

Q. How was cease discharge achieved at this site?

A. It's my understanding that the technicians with Williams shut in the dehy units and actually shut the flow off while we excavated our pit.

Q. So the dehydration unit was actually turned off?

A. Right.

Q. So it wasn't operating anymore?

A. No.

Q. And I presume that the dehydration unit came on -- was reactivated at some point?

A. Right. We don't have, you know, precise documentation. We believe a pit tank was set the following

week, and that would mean that the dehydration commenced the following week after excavation.

Q. When you're talking about setting a tank, what are you talking about?

A. Bringing in a 45-barrel, above-ground, below-grade tank to take the place of the unlined surface impoundment.

Q. Okay, and what is that tank used for?

A. To collect the discharge from the dehy.

Q. And what is the tank made of?

A. Fiberglass in many instances, or steel.

Q. And once the tank is placed, are there discharges onto the soil from the dehydrator?

A. No.

Q. Is that the purpose of the tank?

A. Yes.

Q. We have marked PNM Exhibit 27. Can you tell us what is?

A. This is the letter I wrote to Bill Olson at OCD on January 13th, indicating that we had sampled groundwater 28 feet below surface and discovered contamination, hydrocarbon contamination, in the groundwater.

Q. And what was the purpose of this letter?

A. Well, this is a directive from OCE, when we encounter -- when we receive a hard copy of analytical

results indicating that we have BTEX contamination in groundwater, we notify OCD within 15 days.

Q. Once the groundwater contamination was detected, what was the next thing that PNM did?

A. The next thing we did was to install -- What we'll normally do is -- you know, we've installed -- we installed a well in this excavation, and it was labeled as MW-2, and we'll come back and do additional well installations. And when we can set up a triangular pattern of three wells plus, this allows us to determine the groundwater gradient.

Q. Why is it important to put in a number of wells for triangulation?

A. Well, you can't establish your groundwater contours unless you have, you know, varying elevations and more than one well. One well won't do it.

Q. Are they different reference points for you?

A. Absolutely.

Q. I think it might be useful if we looked at some of the exhibits, since we're going to be talking about the various wells that were installed and the order in which they were installed. And perhaps the easiest exhibit to refer to -- Well, I think either one will work, suffice for our purposes.

Can you identify for us where MW-2, which is the

first well you were talking about, was installed?

A. This is the very first well we installed, and actually it's the result of our initial vertical extent drilling.

Q. And where was MW-2 in relation to the -- PNM's former unlined pit?

A. It was pretty much in the center of our former unlined pit.

Q. Is there a reason why you picked the center of your unlined pit to put in that well?

A. Well, the contamination closes from the pit downwards, and so we want to pick a low spot.

Q. And is that the best indicator in terms of determining whether the contamination flowed downwards?

A. Yes, it is.

Q. You've indicated that the next step was to install some additional wells?

A. Right, and in January we came back and installed MW-4 and MW-3.

Q. Okay. And can you tell me what the results were when MW-4 and MW-3 were installed?

A. MW-4, I believe, had 800 ppb benzene --

Q. Okay, and what --

A. -- in dissolved phase, so we weren't seeing that stain or free-product indication.

MW-3 was nondetect, so we saw no contamination in that.

Q. Okay. Based upon the additional wells that were installed, did you draw any conclusions about groundwater flow on the wellpad site?

A. Groundwater flow was -- based on these three wells, was flowing in a northwesterly direction to leave the site.

Q. And is that depicted in an arrow?

A. Not on this.

Q. Maybe on the exhibit behind that. Okay, can you read the exhibit number on that one for the record?

A. This is Exhibit 5.

Q. Five, okay.

A. Groundwater flow is indicated by this black arrow.

Q. Okay. And once the two additional wells were installed by PNM, what was the next step for PNM?

A. At that time, and as directed by OCD, we had discovered upgradient contamination. Since we had no activities upgradient of our area, we immediately called Burlington, let them know that we had found contamination upgradient of our site.

Q. When you located upgradient contamination, are you referring to the results found in MW-4?

A. Yes.

Q. And at this point in time, where are we chronologically?

A. I think this is February of 1997.

Q. February, 1997. At that point in time, had Burlington done anything with respect to investigation of anything on its site?

A. Not to my knowledge.

Q. Was anything ever reported to you? When you notified Burlington --

A. Pit excavation or anything else?

Q. Anything at all?

A. No.

Q. What happened after your discussions or your notification of Burlington?

A. We talked about what needed to be done. PNM wanted to do some more investigation. Burlington was uncertain, I think, at that time, what really needed to be done. So I'm not sure what was resolved at that time, whether there was cooperative discussion between the parties.

Q. Okay. What was the next activity out on the site?

A. May I refer to --

Q. Absolutely.

A. -- Exhibit 2, I believe, the chronological order?

Q. Yes, let me ask you about Exhibit 2. Is that something that you prepared or that was prepared at your direction?

A. Yes.

Q. And what is Exhibit 2 intended to show?

A. It's basically a chronology of PNM's field activities on the site.

Q. And can you tell me what it's based on?

A. This is based on reports that have flowed between PNM and Burlington, as well as OCD, and also primarily what -- you know, our visits to the site to do work.

Q. Okay. And is the data that was used to compile Exhibit 2 the other exhibits that we've got, or primarily the other exhibits that we've got before the Division right now?

A. Not so much the correspondence, but rather --

Q. -- the reports?

A. Right, right.

Q. Okay. All right, yeah, if it refreshes your recollection about the next thing, please feel free to use it.

A. Again, I mentioned February when we met to discuss.

Again, we met in April to discuss our options on

the site. And it was mainly -- We wrangled between installation of monitoring wells and the additional excavation and what was happening upgradient. There was a lot of uncertainty.

That is my recollection of our --

Q. All right. What was the next thing that happened out on the site?

A. On April 14th, Burlington indicated to us that they were walking along the northwestern edge off location and discovered a hydrocarbon seep that essentially was flowing down this arroyo.

Q. Okay. And what is --

EXAMINER ASHLEY: Excuse me, Ms. Gannon, can you be a little more specific when you're pointing to the map, as far as saying just "down this arroyo"? Can you give like a direction or give some kind of relation to something else? Because it's kind of hard to --

THE WITNESS: Okay.

EXAMINER ASHLEY: -- read the record and know where you're at.

THE WITNESS: Here -- Yeah, this is a little bit grainy, but here -- This is what we believe is the arroyo, and there is, you know, some staining and water possibly -- or hydrocarbon seepage through this area.

Q. (By Mr. Alvidrez) And that's depicted on Exhibit

4 that you're referring to?

A. Yes, it is.

Q. Okay. And what happened following the discovery of the hydrocarbon seep?

A. Burlington notified both NMOCD and PNM, and then we all got together, we had a meeting on site, and NMOCD requested that immediate action be taken in the seep. And Burlington followed up by conducting excavations around this northwestern perimeter of the well pad to open up a collection trench.

And referring to Exhibit 2, that was constructed April 17th, so just within a matter of days after that.

Q. Can you tell us what a hydrocarbon seep is?

A. Well, when you go out and visually looked at it, the sidewalls, probably 12 to 15 feet down, along the edge of this -- the northeast -- -western edge of the well pad actually was showing seepage of oily substance, had a strong smell, there was dark-stained soil at that depth coming out and then flowing down, eventually down the arroyo.

Q. Okay. And what's the next thing that happened out at this site?

A. Burlington commenced with excavation in the area of where their 300-barrel fluids tank existed and began to actually excavate with a backhoe in this area.

Q. And what else did they do, of which you're aware?

A. At that time, yeah, they were -- I guess they were looking for essentially where there could be a discharge. With the backhoe they were unsuccessful in getting beyond, I think -- You know, in the southeastern area of the pad there is a sandstone shelf, and from -- beginning at one-foot depths, and they were unsuccessful in penetrating the sandstone with the backhoe.

Q. Okay. And what happened next?

A. After that, we again held another meeting to discuss what to do, and it was decided that a drilling rig would probably be more successful and some borings.

Q. Okay, when was that meeting?

A. That meeting was June 5th -- I'm sorry, June 4th of 1997.

Q. Okay. And were additional borings put in?

A. Additional borings were installed on June 5th and June 6th of 1997.

Q. And who installed the borings?

A. Burlington installed the borings.

Q. Prior to this period of time, had Burlington installed any wells or any deep borings of which you're aware?

A. No.

Q. Can you tell us where the borings were that

Burlington put in?

A. The borings are indicated by these green dots, and this was TPW-1, TPW-2, TPW-3, TPW-4, this is -5 and -6, and this is TPW-7.

Q. Okay. Do you recall what the results were of the borings?

A. The borings were not left in place more than four or five days, but there was some dissolved phase in TPW-1, there was measurable product in TPW-2. TPW-3 was a dry hole. TPW-6 and -7 had -- according to the groundwater results, had very high concentrations of BTEX, 30,000 ppb. And I don't recall as to TPW-5.

Q. You indicated that TPW-2 had free product in it; is that correct?

A. Yes, measurable products.

Q. And is TPW-2 located upgradient of where PNM-6 [*sic*] --

A. Yes, it was.

Q. -- was located?

And TPW-2 was a dry hole?

A. Yes.

Q. What does that mean?

A. They did not encounter water.

Q. You talked about that these wells were left in for four or five days?

A. It appears that way.

Q. Are there any issues that are associated with the length of time that they were in, in terms of what the results of these borings tell you?

A. Well, based on our experience, and particularly at this site, you know, many times it will take some time for free product to find -- to seek, you know, lower gradients, et cetera, and that these temporary wells are successful when they're left in for a period of time that -- You know, you need to get a good indication of what's going on.

Q. Do you think four or five days of having these wells in provides a very good indication of what's happening subsurface?

A. No, I don't.

Q. What was the next activity with regard to this site?

A. On August 25th, PNM -- we were informed of a landowner's well located to the southeast -- I'm sorry, to the northeast of the site, in this direction, and there was concern that there might be a problem with contamination entering into that well, so PNM sampled the landowner's well.

Q. And what were the results of that sampling?

A. The results were that there was no BTEX, it was

nondetect.

Q. And what conclusions, if any, can you draw from that?

A. Essentially, we knew that contamination had not moved in this direction, which would be northwest -- I'm sorry, northeast -- or had not moved that far, and at that point that was what we concluded.

Q. And what was the next thing that happened out on this site?

A. On October 29th, PNM conducted additional drilling on monitor-well installation at the site. And MW-1, which is located up here to the southeast and above the well pad, was installed. And also MW- -- Do we have another --

Q. We actually have -- That's the other aerial. I think it's Exhibit 3. You might be able to show the approximate locations of those wells, and we'll define them a little bit better later.

A. MW-1 is located here in an upgradient direction of the well pad, and MW-5 is located down here.

Q. Why was MW-1 installed?

A. At any site we install a background well, a well that's upgradient, to determine what background water-quality levels are and to look for the potential for even further upgradient contamination.

Q. Okay. Did you draw any conclusions with regard to the absence of any contamination in MW-1?

A. Our conclusion was that we were not seeing any further upgradient source, based on our knowledge of the downwater gradient.

Q. And with regard to MW-5?

A. MW-5 had dissolved-phase hydrocarbons, and I think -- I don't recall specifically -- oh, 6000 ppb benzene.

Q. Who was asked to install MW-1?

A. Well, we're following an OCD directive again when we go out to do a groundwater investigation, and that is -- just like the source well, you'd install an upgradient well.

Q. Was PNM asked to do that, or was Burlington asked to do that?

A. We were following our groundwater management plan, and that's typical for our protocol.

Q. Okay. What was the next activity out on this site?

A. After that, on November 11th, PNM performed soil borings in the wash. Again, we were trying to determine the downgradient extent of the contamination, which again is part of our groundwater management plan, directive of OCD.

And we installed a temporary well, TMP-1. I'm not sure I can see it on here. But that was actually not a fully completed well, although the casing was left in place, and we again encountered dissolved phase in that well.

Q. What conclusions can you draw from the results of those tests?

A. Well, the tests indicated that we had not still -- neither party had defined the downgradient extent of the contamination.

Q. When you're talking about downgradient, that's towards the north?

A. That's in the northwest direction.

Q. Okay. What was the next activity by PNM at this site?

A. Our next activity was to -- Let's see. Oh, I'm sorry, at the same that we installed MW-5 we also came in and installed MW-6 --

Q. Okay.

A. -- which is about 10 to 15 feet to the west of MW-2, and this was a four-inch product-recovery well. And so our subsequent work related to that well. We gauged the well in November and discovered 4.8 feet of free-phase hydrocarbon on top of the well.

Q. It might be good to switch back to the previous

exhibit with a well pad. You were talking about MW-6. Can you identify that well for us again?

A. MW-6 is this well.

Q. And why was it that PNM installed this well, MW-6?

A. This well was installed as a product-recovery well.

Q. And at whose request was it installed?

A. Again, according to our groundwater management plan, it was essentially a directive by OCD. We installed this well to begin remediation of free product.

Q. What was the purpose of the -- undertaking this remediation?

A. What is the purpose --

Q. Yes.

A. -- of undertaking this remediation? We were actually put on notice, I believe, by OCD prior to our installation, indicating that we needed to address the contamination in the area of our former pit area related to --

Q. What was the next activity out on this site?

A. The next activity, PNM again came out in December of 1997 and installed MW-7, which was our furthest downgradient well, and that was essentially just about kissing Williams' pipeline, Williams Field Service or

Williams Company owns the gas pipeline here. We moved down the wash and, based on our auguring, determined we had not reached clean, but decided to install a well here because our concern was that if they moved over this pipeline, we could introduce, you know, a further source. So we stopped here, at this pipeline.

EXAMINER ASHLEY: Excuse me, about how far is that from the location and in what direction?

THE WITNESS: From -- It's approximately 900 feet from the location.

EXAMINER ASHLEY: To the northwest?

THE WITNESS: To the northwest.

EXAMINER ASHLEY: Thank you.

Q. (By Mr. Alvidrez) And the next activity by PNM out on this site, or anybody, actually?

A. We also installed MW-8 on location, and MW-8 was located here, which is on the eastern perimeter of the well pad.

Q. And what were the results of MW-8?

A. MW-8 indicated dissolved-phase contamination.

Q. And when was MW-8 installed?

A. It was dissolved -- I'm sorry, installed, December 11th, 1997.

Q. Okay. What other activities were taken with respect to investigation at this site?

A. Following December of 1997?
Q. Yes.
A. On January 12th, we commenced free-product recovery at MW-6.
Q. Okay. And that's the date at which PNM started free-product recovery from MW-6?
A. Yes.
Q. And how long did that continue?
A. That continued until -- I believe it was November 4th or 5th of this year, when we were informed that our free-product recovery system had been removed.
Q. According to your last records, how much -- how many total gallons were removed?
A. I don't have the percentage figures, but it's over 1100 gallons of free product.
Q. Were you able to get a reading just prior to the removal of the equipment?
A. As far as product thickness?
Q. Yes -- Well, not as far as product thickness, but as far as the amount that was in the --
A. I believe so.
Q. -- in the tank?
A. I don't have that number off the top of my head, and I'd have to defer to another technical witness.
Q. Okay. Let's talk a little bit about free-product

recovery and how that occurs. I think we've got some exhibits that show free-product recovery.

Refer to PNM Exhibit 21. Can you tell us what that shows?

A. This is MW-6, our four-inch product-recovery well, with the product-recovery pump installed. It's a nitrogen-displacement pump.

Basically, we're extracting the products with a hydrophobic filter, so it only accepts products, no water. This was operating approximately three times. It was on a cycle. It would shut off to allow fluids or product to flow into the well once it had been removed.

The discharge would actually be emptied into this 55-gallon drum. This one-gallon container shows an amber-color-looking fluid, which is actually the product that we're putting into this tank.

Q. All right. And what happens to the product that's recovered?

A. Once we've filled this 55-gallon drum, we pump it into this 45-barrel above-ground oil grades fluids tank, which is what discharges from the separator -- I'm sorry, Williams' dehydrator.

Q. Okay. And what happens to the materials that are in that above-ground tank?

A. It's my understanding that Burlington comes out

and pumps that tank out and transports the fluids offsite.

Q. Including the free product?

A. Well, we're putting free product into this tank, so yes.

Q. What was the next activity that took place out on this site?

A. We commenced or conducted our normal quarterly monitoring in January.

Q. What were the results of the quarterly monitoring?

A. The results indicated -- were very consistent with what we had seen out on the site. We were -- You know, free product again at MW-2 and MW-6, of course our pumping well.

We also saw that the benzene in MW-4 had increased. It was now at approximately 1200 ppm benzene.

Q. Did you draw any conclusions from that?

A. Well, that would indicate to us, and to me, based on my experience related to the work that we've been doing out in the San Juan Basin, that there was -- there appeared to be some source in an upgradient direction that was actually increasing or causing an increase in contamination in MW-4.

Q. Okay. Anything else with regard to the sampling that was done at that point in time?

A. Not that I can --

Q. Okay. What was the next activity that was out there?

A. On April 14th of 1998 we conducted our quarterly monitoring again, which is part of our groundwater remediation program, and at that time we detected for the first time free-phase product in MW-8, and that was a measurable amount, and it was .37 feet.

Q. And what did that --

A. I'm sorry -- Yes, .37 feet.

Q. What did that indicate to you?

A. That clearly there was some free-product source in this direction, upgradient of our equipment in the area of MW-8.

Q. And is that unusual, an unusual situation, where when you originally install a well you'll get a reading that shows perhaps some presence of dissolved phase, but then at some point in time, a later point in time, you find free product?

A. We've experienced it at one other site, a drip site, where we had a slug of free product in there, and it took, you know, several -- two or three quarters for free product to show up. So that was -- I mean, based on our number of free-product sites, that does occur.

Q. Okay. What else -- What was the next thing that

occurred after at this site?

A. On May 11th Burlington came out, of 1998, this year, and installed wells MW-9 which is in the approximate location of TPW-1, and MW-10 which is in the approximate location of TPW-2. They're initial borings.

Q. And what were the findings with regard to those two wells?

A. MW-9 had dissolved phase, and MW-10 had measurable free product, and within 24 hours the on-site geologist gauged 1.5 feet of free product.

Q. I think we have a photograph of MW-10, as one of our exhibits. I believe this is PNM Exhibit 23. Can you tell me what that shows?

A. This is our field technician extracting a bailer of fluids from MW-10, and as you can see, this yellowish, yellow-colored, straw-colored fluid is free product, and beneath that is the water.

Q. Is that how you measure product thickness in a given well?

A. We actually have an oil-water sounder, a probe that measures the thickness. This would not do that.

Q. All right, but does that accurately depict, at least, the appearance of the product?

A. Yes.

Q. What was the next activity that took place?

A. On July 1st, again, we came out in compliance with our groundwater sampling plan, and as part of our remediation we conducted quarterly sampling in July of 1998.

Q. Okay, and what were the results of the samples?

A. The samples were again consistent with what we had been seeing, there were no surprises. Free product was still evident, I believe at MW-8. I don't have those results in front of me. I can refer to those if you'd like.

Q. I think it might be helpful to talk about those. I think Exhibit 49 might give you that information.

A. Referring to the July 1st, 1998, sampling again?

Q. Right.

A. Again, we have measurable product in MW-8, and it was essentially the same as when we had measured it in April, .37 feet. And I don't think anything else had changed too much.

We had seen again an increase in benzene in MW-4 from the previous, so we're seeing an upward trend in benzene concentration in MW-4 over three quarters' expansion.

Q. With regard to the increase in benzene concentrations in MW-4, does that indicate anything to you as far as the possibility that it may soon show up with

free product?

A. No, that doesn't -- It indicates that there is a source, possibly in the soil, that is continuing, that has not been remediated or addressed or excavated. In fact, we've seen it at other sites. The increase indicates that there may be some grossly contaminated soil in place that needs to be addressed.

Q. Okay. Are you aware of the reports that Burlington submitted, pointing to the reduction in BTEX levels --

A. Yes.

Q. -- as an indication of the success of their remediation?

A. Yes, but that caused concern for us, because benzene is the most mobile constituent from a source area, and the fact that it was increasing indicated that there was indeed a fresh source for something new moving through.

Q. Okay. What was the next activity out at this site?

A. We collected some product samples from various sources. We were just kind of looking visually at what might be out there, where things were coming from.

And then we conducted a site visit again with Burlington to talk about -- I'm sorry, PNM actually brought a surveyor out to survey in the wells within a week's time.

And then we also collected soil samples from Burlington's excavation just above the water table --

Q. Okay.

A. -- and that was actually on the northeast end of their excavation.

Q. Okay, I think we've got another picture, one of our exhibits, of Burlington's excavation. Maybe it would be useful to look at that.

We have PNM Exhibit 18. Can you tell me what that is?

A. This is a picture of the bottom of their excavation with the fluids in the bottom, and this is looking in a southerly direction at the excavation. And we've collected a sample at the soil-water interface in the bottom of this excavation.

Q. Okay. And what were the results of that sampling?

A. Again, I'll have to refer to the analytical results --

Q. Okay.

A. -- and that's indicated on page 2 of Exhibit 49. That's the Burlington excavation. And at the soil-water interface, which is the fourth line down, we're seeing 36 ppm benzene in the soil and about 2000 ppm BTEX in the soil.

Q. Okay. Relatively speaking, are those high levels, low levels?

A. Yeah, that's -- The OCD would definitely allow closure based on those levels and the proximity to groundwater.

Q. And where was this excavation? What Burlington equipment was close to this excavation --

A. Well, it appears, and I'd have to defer to another technical witness --

Q. Okay.

A. -- as far as the actual location of their former equipment, but this was in the southeast corner. We believe their tanks were somewhere in this area, and their pit, fluid pit.

Q. Okay. What other testing or investigation took place out at this site?

A. We came back to conduct our quarterly sampling again, as part of our remediation program. That was October 5th of 1998. At this time, for the first time, we detected free product in MW-4, a measurable amount of .63 feet.

Q. And again, MW-4 is upgradient from PNM's former pit?

A. Yes, it is.

Q. And what is the significance of finding free

product in MW-4?

A. Well, again, this indicates that something is going on somewhere in this area upgradient of MW-4, a source. Intermittent, continuous, I don't know.

Q. In terms of MW-4's proximity to Burlington equipment, is MW-4 closer to Burlington's equipment -- well, Burlington's and PNM's, which is MW-4 closest to?

A. It's closest to PNM's --

Q. Is that Burlington's?

A. I'm sorry, Burlington's --

(Laughter)

THE WITNESS: That was good. Burlington's production fluids tank and also their lined tank.

Q. (By Mr. Alvidrez) When was the next work that was done?

A. We actually were on site to review Burlington's installations of two boreholes, SB-1 and SB-2.

Q. And when did that take place?

A. And that occurred November -- I'm sorry, October 8th of 1998.

Q. Okay. And what were the findings with regard to those?

A. I believe SB-2 was in the area of our former pit, and there was free-phase product.

Q. Any surprise in that?

A. Absolutely not.

Q. Okay.

A. We were glad they could verify our findings.

Q. Okay, and SB-1?

A. And SB-1, I'm not quite sure where that was. It was near their excavation, I believe on the north side.

Q. Do you know what the findings were?

A. That was dissolved phase.

Q. Dissolved phase, okay.

Any other work that's been done out there?

A. We came out to -- We received notice on November 5th that our free-product system in MW-6 had been removed, and we had intended to take that out prior to Burlington's excavation activities.

On November 9th we proceeded out to the site to conduct final sampling as part of our remediation, and we felt that we needed some sort of reference since essentially many of our monitoring wells would be obliterated during their excavation, as they had indicated to us.

We also have been present on site on some of the days that they've been conducting their latest excavation efforts.

Q. Have you been witness to the -- to any work that was done in the area of PNM's former pit?

A. Since last week or --

Q. Yes.

A. Yes, I have.

Q. And what have you seen?

A. Basically, they have a dozer on site excavating or in the location of our former pit. I believe last time I heard it was down to 29 feet. And there's a tremendous amount of overburden being removed in reference to contaminated soil. There's a lot of earthwork going on.

Q. What did you see with regard to the area or the condition of the ground where they were working in the area of PNM's --

A. In our former pit?

Q. Yes, your former-pit area.

A. As another witness has testified, essentially it was clean fill down to 14 feet, which was our -- or, you know, somewhere in there between 12 and 14 feet, which was the limits of original excavation.

Beyond that, yes, there was soil contamination detected on the PID ranging anywhere from 800 ppm to 1500.

Q. Is this indicative of saturated soil?

A. Not in my experience. Usually with saturated soil you'll peg your PID; you can't even get a reading. It will read "error".

So from 14 down to 22, 23 feet when they

encountered -- started to encounter sandstone layers, that, you know, was very typical of the PID readings that they were taking.

Q. Could you see where the bottom of the PNM pit was during this --

A. I actually was not on site when they reached the bottom of our pit. But I understand there was, you know, some black staining, one foot in depth.

Q. I want to talk a little bit about --

A. May I sit down or --

Q. Yes, please do. Take a load off.

I want to talk a little bit about pit bottoms, and your experience with regard to the very bottom of the former unlined pit.

In your experience, does the pit bottom, or the material that accumulates in the bottom of the pit, have any impact on whether materials that are placed into that pit can migrate?

A. I don't understand what you're --

Q. Well, what I'm trying to find out is, you described a -- Can you tell me, what do you typically find in the bottom of an unlined pit?

A. Before excavation?

Q. Before excavation, yes.

A. Well, I mean, you encounter visibly stained soil.

If we take a sample, you know, that gives us a better indication of what's in place.

Q. Okay.

A. As I said before, you will see fluids in there. There may even be a sheen on those fluids, but we don't typically encounter free product.

Q. Well, why are the fluids there? Why aren't the fluids just sinking down?

A. Well, if it's saturated with moisture or if discharge has occurred recently, then you'll see standing liquid, or there may even be precipitation in the pit.

Q. Okay. Is there anything about the accumulation of materials in the pit bottom which helps to form a barrier?

A. Accumulation -- As far as the actual soils?

Q. Right.

A. Not necessarily.

Q. I'd like to go through certain of the exhibits that we've got to kind of place some of them in context. We've talked about Exhibits 26 and 27. Just very briefly, can you tell us what Exhibit 28 is?

A. This is an annual report that we submit to OCD once a year on our groundwater sites and their progress.

Q. Okay.

A. And this is specifically on the Hampton 4M.

Q. All right. I noted under the "Results" portion at the very bottom of Exhibit 2, I believe the second sentence refers to MW-3 and MW-4. It says, MW-3, downgradient from Burlington Resources, is contaminated, and MW-4, which is cross-gradient, is clean. Are those numbers switched?

A. It appears that they are.

Q. Exhibit 29, can you tell us what that is?

A. This is a letter that OCD wrote to Burlington -- and I believe this occurred after our February, 1997, visit, PNM, Burlington and NMOCD -- instructing Burlington to address contamination in the area of their tank-drain pit and production pit.

Q. I'm going to jump ahead to PNM Exhibit 40, and can you tell us what this is?

A. This is a progress report on our site that PNM -- on the Hampton site, that PNM wrote. This was in lieu of our annual report because this was a unique site, and so it was submitted under separate cover to the NMOCD.

Q. And what does this report represent?

A. Basically our progress to date --

Q. Okay.

A. -- at the site.

Q. All right. I'd like you to look at Exhibit 41. Do you recall having seen this letter?

A. Yes.

Q. Were you carbon-copied on it?

A. I think I was. Yes, I was.

Q. I note that the letter is to a Mr. Ed Hasely, but the greeting indicates "Dear Ms. Gannon". Was this written to PNM as the addressee or to Burlington, to your understanding?

A. This was to Burlington.

Q. Do you have any idea of the situation and circumstances which led up to the issuance of this letter by the OCD?

A. This letter was subsequent to Burlington's investigation related to the southeast corner of the well pad. It asks that two additional wells be installed in the location of their former temporary boreholes, TPW-1 and TPW-2, and to analyze those for BTEX and water-quality constituents, and also to submit a report on their findings, based on those new well.

Q. Okay. Had you had any discussions with OCD about the situation involving Burlington's status of their work at the site versus PNM's?

A. Yes, I had talked extensively with Bill Olson about the fact that we were very confused about what's going on with this site, we had not determined upgradient release points and that it was -- we felt it was imperative

that that be done and that an additional upgradient well be installed.

Q. Let's turn to Exhibit 42, and let me ask if you can identify this letter for us.

A. This letter is essentially our response to the March 13th directive by OCD to remediate, conduct further remedial actions in the area and downgradient of our pit to address free-phase hydrocarbons --

Q. Okay.

A. -- and essentially we indicated we would be appealing that directive, but we would continue to operate our free-product recovery system and perform sampling.

Q. Why was it that despite the fact that PNM was going to appeal the OCD's directive, PNM still continued to recover this free-phase product?

A. Again, we were being directed by OCD to do that work, and -- you know, free-product recovery and monitoring are considered part of our remedial action, and so we were fulfilling those obligations.

Q. Okay. In your work on this site, has PNM, in your opinion, in any way sought to evade or shirk its responsibilities with regard to cleanup at this site?

A. Absolutely not. Our approach has been very typical of our approach at all of our other sites that we've dealt with. Our concern, though, was that there was

an upgradient problem that was not being addressed, and I was in open communication constantly with Bill Olson and also with Ed Hasely and his predecessor, who was Craig Bock, as far as our concerns.

Q. About how much has PNM spent out at this site for remediation and investigation?

A. You know, I don't have the exact figure. I believe it's somewhere between $60,000 and $70,000, probably.

Q. This site has been, I guess, ongoing in terms of activity since April of 1996. How long are these sites typically -- How long is it between the time you do your site assessment and do a closure on a site in the typical case?

A. Once we've removed source and we have dissolved phase contamination in groundwater, it typically takes anywhere -- probably 18 to 24 months, to conduct quarterly sampling and demonstrate that through natural attenuation we've addressed groundwater contamination.

Q. Let's jump ahead to PNM Exhibit 46, and let me ask that you identify that for us.

A. This was another progress report to OCD in August. Since this was an atypical site, we were concerned about keeping OCD up to date on what was going on. Again, it related our activities and also stated our concerns

related to upgradient problems at the site.

Q. Okay. And is this, again, more or less a status report telling --

A. Yes, it is.

Q. -- telling the OCD what you --

A. Compliance with our groundwater management.

Q. Let's look at Exhibit 47, PNM Exhibit 47. Do you recognize that letter?

A. This was a letter back to OCD from -- I'm sorry to Burlington from OCD, indicating that PNM and Burlington were to address contamination on site -- I'm sorry, the primary goal of this letter was that a downgrading investigation be conducted and the request that PNM and Burlington work together to do that.

Q. Okay. Did you have any discussions with anyone at OCD which preceded this letter about the subject matter --

A. Well, I had received a letter indicating that PNM was -- OCD was directing PNM to conduct a downgradient investigation. I called Bill and told him that, you know, again, we had -- we're very concerned and had -- did not agree with this because we felt that there were other sources on site contributing to downgradient contamination and that, you know, the other parties needed to be involved as well.

Q. We talked a little bit about -- with Ms. Ristau, with regard to the line of responsibility that the OCD drew, and she gave us an approximate location but said she would defer to another witness, and I think you may be that witness. What I'd like for you to do is show us on Exhibit 4 or Exhibit 5 where that line of demarcation was, as you understood it.

A. That line was drawn before these two wells were installed, MW-9 and -10, so I'll go back to our exhibit with the test wells.

Q. And for the record, which exhibit is that?

A. This is Exhibit 5.

Q. Okay.

A. And I actually was on site with Bill Olson, and he essentially walked this line here, which is between PNM's equipment and the test wells.

Q. What was your understanding of the basis of the OCD's line of demarcation at this site?

A. I had interpreted it that it was based on surface equipment -- our equipment was here, theirs was here -- and also on the results of these borings.

Q. Is there necessarily any correlation between the location of surface equipment and the original source or release point for contamination?

A. No, because even in the short time we've been out

on many of those slopes, these locations, the equipment moves all the time, sites are reworked, equipment is moved. So when we do assessments and go out the next year to excavate a pit, many times we can't even tell it's the same site, because producers and pipeline companies move their equipment.

MR. ALVIDREZ: I would pass the witness.

MR. CARR: Could we have a recess, brief recess?

EXAMINER ASHLEY: You bet. Let's take a five-minute recess.

(Thereupon, a recess was taken at 5:15 p.m.)

(The following proceedings had at 5:25 p.m.)

EXAMINER ASHLEY: Okay, at this time this hearing is called back to order.

We will reconvene again tomorrow morning at 8:00 a.m. At this time the hearing is adjourned until 8:00 a.m. tomorrow morning.

(Thereupon, evening recess was taken at 5:25 p.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12033, heard by me on 11-19 1998.

Mark Ashley, Examiner
Oil Conservation Division

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 December 5th, 1998.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002