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:

CASE NO. 12,961

APPLICATION OF DEVON ENERGY PRODUCTION COMPANY, L.P., FOR AN EXCEPTION TO DIVISION ORDER NO. R-111-P, EDDY COUNTY, NEW MEXICO

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

November 14th, 2002

Santa Fe, New Mexico

Pii 2: 07

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH,
Hearing Examiner, on Thursday, November 14th, 2002, at the
New Mexico Energy, Minerals and Natural Resources
Department, 1220 South Saint Francis Drive, Room 102, Santa
Fe, New Mexico, Steven T. Brenner, Certified Court Reporter
No. 7 for the State of New Mexico.

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November 14th, 2002 Examiner Hearing CASE NO. 12,961 PAGE EXHIBITS 3 **APPEARANCES** APPLICANT'S WITNESSES: KEN GRAY (Landman) Direct Examination by Mr. Bruce 5 Examination by Examiner Catanach 12 Further Examination by Mr. Bruce 20 Further Examination by Examiner Catanach 20 <u>DAVE RITTERSBACHER</u> (Geologist) Direct Examination by Mr. Bruce 21 Examination by Examiner Catanach 26 Examination by Mr. Jones 28 <u>JAMES BLOUNT</u> (Engineer) Direct Examination by Mr. Bruce 31 Examination by Examiner Catanach 37 Examination by Mr. Jones 42 Further Examination by Examiner Catanach 45 Further Examination by Mr. Jones 46 Further Examination by Examiner Catanach 47 REPORTER'S CERTIFICATE 50

EXHIBITS

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APPEARANCES

FOR THE DIVISION:

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FOR THE APPLICANT:

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* * *

ALSO PRESENT:

WILLIAM V. JONES, JR.
Petroleum Engineer
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, NM 87505

1	WHEREUPON, the following proceedings were had at		
2	9:50 a.m.:		
3	EXAMINER CATANACH: Okay, I'll call the hearing		
4	back to order, and at this time I'll call Case 12,961,		
5	Application of Devon Energy Production Company, L.P., for		
6	an exception to Division Order Number R-111-P, Eddy County,		
7	New Mexico.		
8	Call for appearances.		
9	MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,		
10	representing the Applicant. I have three witnesses.		
11	EXAMINER CATANACH: Call for additional		
12	appearances.		
13	Okay, will the three witnesses please stand to be		
14	sworn in?		
15	(Thereupon, the witnesses were sworn.)		
16	KEN GRAY,		
17	the witness herein, after having been first duly sworn upon		
18	his oath, was examined and testified as follows:		
19	DIRECT EXAMINATION		
20	BY MR. BRUCE:		
21	Q. Will you please state your name and city of		
22	residence?		
23	A. Yes, my name is Ken Gray. I live in Oklahoma		
24	City, Oklahoma.		
25	Q. Who do you work for and in what capacity?		

1 I'm a landman for Devon Energy Production Α. Company. 2 Have you previously testified before the 3 Q. Division? 4 5 Α. Yes, I have. And were your credentials as an expert landman 6 Q. 7 accepted as a matter of record? 8 A. Yes, they were. 9 Q. Does your area of responsibility at Devon include 10 this part of southeast New Mexico? 11 A. Yes. 12 Q. And are you familiar with the land matters involved in this case? 13 Α. Yes, I am. 14 15 MR. BRUCE: Mr. Examiner, I tender Mr. Gray as an expert petroleum landman. 16 EXAMINER CATANACH: Mr. Gray is so qualified. 17 Q. (By Mr. Bruce) Mr. Gray, let's first turn to 18 Exhibit 1. Now, we did try to fit some more info on here, 19 Mr. Examiner, but we were afraid it would cause epileptic 20 seizures if we looked at it too long. 21 Now, Mr. Examiner, there is some geologic data 22 and production on here, and our next witness will go into 23 24 that. But Mr. Gray, just from a land standpoint, could 25

you describe for the Examiner what is depicted on this plat?

A. Yeah, and I'll just start over here on the right side in the legend, about halfway down. The yellow is Devon acreage throughout, the bold red line is the boundary of the State R-111-P, and the crosshatched acreage kind of in the middle is the acreage that is subject to the settlement agreement that we'll be talking about in a minute, portions of which are the subject of this Application.

The blue bold outline is the BLM outline of what they would call the potash enclave. The lighter gray sections are existing federal potash leases, and the darker gray sections in Sections 2, 16 and 32 are existing state potash leases, which according to state and federal records are due to expire tomorrow.

- Q. Okay. In looking at this, there are no potash leases covering the lands in the sections that are the subject of this Application; is that correct?
- A. There aren't any current leases, and according to the federal abstract, there haven't been any for anywhere from 15 to 30 years.
- Q. Okay. Why don't you pull out Exhibit 2 while we're at it, and keep Exhibit 1 in front of you, Mr. Gray, and what is Exhibit 2?

- A. This is Exhibit 2?
- Q. Yes.

- A. That is the 1993 version of the BLM potash area which reflects various deposits of potash from measured potash to -- I think the least amount is -- obviously would be no potash, but from measured potash to very minor and barren areas.
- Q. And this map also shows the mine workings, at least as of 1993?
 - A. That's correct.
- Q. Now, on this Exhibit 2, in what part of the map are we on?
- A. Well, it's right here, is where the subject of this Application is. It would be just to the left of the legend, Township 23 South, 31 East. And based on this version of the map, the closest active mine is some six or eight miles away to the west.
- Q. And then comparing Exhibit 2 with Exhibit 1, what is listed as the potash enclave on Exhibit 1 is essentially the blue or the measured potash on Exhibit 2?
 - A. That's correct.
- Q. Okay. Now, could you just give a little detail about the leases involved covering Sections 10, 11, 13, 14, 15, 22 and 23? They are all federal leases, are they not, the oil and gas leases?

- A. That's right, they're all federal leases.
- Q. And could you give the -- referring now to Exhibit 3, which is a document entitled "Settlement Agreement" --
 - A. Uh-huh.

- Q. -- maybe just briefly -- I know there's a lot of history behind it, but briefly tell the Examiner what occurred that resulted in this settlement agreement.
- A. Well, the settlement agreement was the result of an action that Devon filed against the federal government, I guess the inability of the government to issue permits on leases that did not contain potash stipulations. All of the leases in the crosshatched area that you see there were issued, I'm guessing, 1967, late 1960s, and they were issued without potash stipulations.

The BLM treated them as if they had potash stipulations, and we weren't able to get drilling permits, and the result of this settlement agreement was an action in the Court of Federal Claims, and the result of the settlement agreement was that the BLM agreed that we could and did have the right to drill these wells.

- Q. Okay. And on page 4 of Exhibit 3, paragraph 5 is really the heart of what we're here for today?
- A. That's right, and I'll just paraphrase it, but the settlement agreement the BLM gave, at the time we

thought that the right to receive permits and drill wells on these leases without potash restriction, in paragraph (iii), at least as far as the BLM and Devon were concerned, we assumed at the time that we were free of any potash restrictions, including R-111-P.

- Q. Okay. And then when Devon commenced drilling wells, I believe they were -- the APDs are filed with and approved by the BLM, are they not?
 - A. That's correct.

- Q. But when they were sent over to the Artesia District Office of the Division, some additional requirements were made?
- A. Yes, the Artesia District Office advised us that we were still subject to R-111-P in its additional cementing and casing restrictions.
 - Q. And we're here today asking that in this
 Application area, that Devon need not cement the production
 string to the surface; is that correct?
 - A. That's correct.
 - Q. And our engineer here, our third witness today, will explain that in more detail?
 - A. Yes, he will.
 - Q. And the reason the request is being made is because the additional cementing requirement adds a fair amount of money to the cost of a well?

1	A. When you look at the number of wells that could	
2	potentially be drilled, yeah, it's a significant amount of	
3	money.	
4	Q. Now, certain wells have already been drilled on	
5	these leases, have they not?	
6	A. Yes, since the date of the settlement agreement,	
7	yes.	
8	Q. Since the date of the settlement agreement?	
9	A. Right.	
10	Q. And I believe last summer the Division notified	
11	you that they would not approve Devon's proposed casing and	
12	cementing program and required you to come to hearing?	
13	A. Correct.	
14	Q. Okay. Now this land plat does identify some	
15	potash leases in this area.	
16	Who is the owner of those They're not on this	
17	acreage, but nearby. Who is the owner of those potash	
18	leases?	
19	A. IMC.	
20	Q. And they were given notice of the hearing?	
21	A. Yes, they were.	
22	Q. And was the Bureau of Land Management also given	
23	notice of the hearing?	
24	A. Yes, they were.	
25	Q. And is that reflected on Exhibit 4?	

1 A. Yes, it is. Were Exhibits 2 through 4 compiled from company 2 Q. business records? 3 Yes, they were. 4 Okay, and Exhibit 1 will also be discussed by 5 Q. your next witness, will it not? 6 7 Yes, it will. Α. Mr. Gray, in your opinion is the granting of 8 9 Devon's Application in the interests of conservation and the prevention of waste? 10 11 Α. Yes, it is. MR. BRUCE: Mr. Examiner, I'd move the admission 12 of Devon Exhibits 2 through 4 at this time. 13 EXAMINER CATANACH: Exhibits 2 through 4 will be 14 admitted as evidence. 15 EXAMINATION 16 17 BY EXAMINER CATANACH: 18 Okay, according to our map, Mr. Gray, Devon owns all of the acreage in all of the sections except for 19 20 Section 10? Is that right? 21 It looks like there's some open acreage in 22 Section 10. Well, I'm not representing that we own 100 23 percent of all those, but we do own an interest in all 24

25

those, yes.

Okay, you own an interest in everything that's 1 Q. 2 colored in yellow? A. 3 Yes. Okay. And would you be the operator of that 4 Q. 5 acreage? Not everything -- Of all the yellow? Well, let's 6 Α. see, I'm trying to see if there's a lease on here that we 7 don't operate. 8 9 That might be a better question of our operations 10 engineer, but it looks like we do. Okay, so you're seeking to have this exception 11 Q. for everything that Devon drills within these sections; is 12 that right? 13 The cross-hatched sections, yes. 14 Α. Within the cross-hatched sections --15 Q. I'm sorry, it would be --16 Α. -- you've confused me. 17 Q. Okay, all of Section 11 --18 A. Uh-huh. 19 Q. -- the southeast southeast of 10, all of 15, 20 south half of 14, north half and southwest quarter of 13, 21 22 all of 22 and 23. Okay. Now, this is the settlement area that 23 Q. 24 you've reached an agreement with whom again? 25 Α. BLM.

1	Q. With the BLM, and it's my understanding that		
2	previous to this agreement they would not issue drilling		
3	permits on this acreage?		
4	A. That's correct.		
5	Q. Okay, even though you had the oil and gas lease?		
6	A. That's correct.		
7	Q. Okay. So you went to court; is that		
8	A. That's correct, Court of Claims, Federal Court of		
9	Claims.		
10	Q. Okay, so at this point BLM will issue drilling		
11	permits on the cross-hatched acreage?		
12	A. And they have issued permits, and we've drilled a		
13	number of wells since the date of that settlement		
14	agreement, yes.		
15	Q. Okay. Of the wells that have been drilled so		
16	far, were those wells in compliance with R-111-P?		
17	A. No.		
18	Q. And how did that work out? Just You weren't		
19	aware that they had to be in compliance?		
20	A. Well, I think as of the date of our settlement		
21	agreement with the BLM, which is May 1st, 2001, Devon		
22	and I'm presuming that the BLM thought the same thing, that		
23	we would be free and clear of any and all potash		
24	restrictions with regard to this area.		

25

Q.

Okay.

So the production casing string on all

these wells was not circulated to surface; is that correct? 1 That's correct. 2 Α. How many wells are we talking about? Do you have 3 an estimate? Talk to the other --4 MR. BRUCE: Our next witness. 5 EXAMINER CATANACH: -- other witness? 6 7 THE WITNESS: Yeah. (Off the record) 8 9 (Mr. Brooks departed at this time.) 10 Q. (By Examiner Catanach) On your exhibit here, you've shown circles -- I assume that those are wells that 11 have already been drilled -- and triangles. I assume that 12 those are proposed wells? 13 Those would be potential wells, yes. 14 Okay. And the process to date has been that 15 Q. you've been submitting these drilling permits to the BLM 16 17 and they've been approving them without any stipulations? That's correct. 18 Α. Okay. Have you had any contact with IMC, Mr. 19 Q. 20 Gray? 21 Α. No, we have not. 22 They were notified of this Application? Q. 23 Α. Yes. Can you tell me where their potash lease is? 24 Q. 25 Α. Yes, the lighter shade of gray on the west -- on

- 16 the left side of the map in Sections 7, 8, 18, 19, 20, 29, 1 2 30 and also in Sections 3 and 4 are all federal potash 3 leases. Three and 4 to the north? 4 Q. 5 Α. Uh-huh. 6 Q. And that's also IMC? 7 Α. Yes. And the three dark gray sections, being 8 Sections 2, 16 and 32, are state potash leases. 9 Q. State potash leases. 10 Right, which are due to expire tomorrow. Α. Who's the potash lessee currently? Q. 11
- 12 Α. IMC.

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- 13 Q. IMC. You don't know about the status of them 14 renewing the leases or --
 - No, I just -- All I can tell you is what the Α. federal abstract company showed us. But it would appear that all three of those sections have been pretty much drilled, so I'm not sure how they could or why they would want to keep those leases.
 - Now, all of the potash development to date has been basically to the west northwest?
 - Α. Right.
 - And to the north? 0.
- 24 Α. That's correct.
- 25 Q. I guess it would be at least three or four miles

to the closest active mine workings; is that your 1 2 interpretation? Well, based on this map it would be much more 3 than that. A township away, almost. 4 Q. What are you depicting as active mine workings on 5 this map, on your Exhibit 2? 6 7 A. It would be the yellow. 8 Well then, that would be a portion of Township 23-30; is that correct? 9 Α. Correct. 10 Okay, so that's the township to the west of the 11 one we're talking about now? 12 13 Α. Right. 14 Q. Okay. Do you know who the -- Is that IMC also? I believe it is. Α. 15 Now, you were referring to a paragraph in this 16 Q. agreement that -- I missed it. 17 Okay, it's on page 4 --18 Α. Page 4. 19 Q. 20 Α. -- paragraph 5, for "Development of the Oil and 21 Gas Leases", paragraph (iii). 22 Q. Okay. It says the leases "may be developed 23 notwithstanding any provision of State of New Mexico Oil 24 25 Conservation...Rule R-111-P..."

- Q. So is this what you were basing your opinion on, that they were not subject to R-111-P?

 A. At the time of this settlement agreement and
- until last summer when the Artesia District Office gave us the indication that we were still subject to it, yes, I think Devon and I think the BLM thought that they had the full authority to give us that right, since it was federal land.
- Q. When the Artesia Office first contacted you guys about this do you know how many wells you had already drilled at that point or --
 - A. I don't know, but I'm sure our --
- 13 Q. Okay.

- A. -- engineering witness can tell you.
- Q. Okay. It looks like from your Exhibit 2, this is just south of the Waste Isolation Pilot Project as well; is that correct?
- 18 A. Yes, it is.
 - Q. Okay. Now, the area outlined in blue on Exhibit 2, that represents what again? Is that --
 - A. That's what the BLM has determined to be measured potash in one degree or another, as of 1993.
 - Q. What is the red; do you know?
 - A. Well, I'm having trouble reading.
 - Q. It's kind of hard to read.

1 Α. Yeah, it's kind of small here. Let's see. 2 MR. JONES: I've got a larger map here, let me get it out. 3 THE WITNESS: The red on that map is what they 4 call second mined areas. 5 0. (By Examiner Catanach) Do you know what that is, 6 7 Mr. Gray? 8 A. No, I do not. Have you seen or do you have any knowledge of any 9 Q. LMRs that IMC may have in this area? 10 Α. I mean, that -- As far as I know, that type 11 No. of stuff is confidential. 12 Okay, so you don't know if they have one, you 13 Q. 14 just haven't see it? Well, no, that's correct. It would be hard for 15 Α. me to see how they could have one if they don't own any 16 leases, and I'm talking about the leases that are subject 17 to this Application specifically. 18 Okay. But they do have leases just to the west 19 Q. 20 of --And they could very well have some LMRs 21 22 established over there, right. Okay, yeah. They have not expressed any concern 23 Q. to you about this type of activity? 24

25

A.

No.

1	EXAMINER CATANACH: Okay, I believe that's all I
2	have, Mr. Bruce.
3	MR. BRUCE: I just have one question of Mr. Gray.
4	EXAMINATION
5	BY MR. BRUCE:
6	Q. I mean, the wells that can be drilled under the
7	settlement agreement, they can be drilled, and the potash
8	company can't stop you
9	A. That's correct.
10	Q from drilling them; is that correct?
11	A. That's correct.
12	MR. BRUCE: Okay. Thank you, Mr. Gray.
13	FURTHER EXAMINATION
14	BY EXAMINER CATANACH:
15	Q. We just had question, a quick question about the
16	settlement agreement. It appears that the exhibits are not
17	signed. Is that
18	A. Right, this copy is not signed.
19	Q. Okay, but you do have one where everything is
20	signed; is that right?
21	A. Yeah, right.
22	MR. BRUCE: The attorneys were signing in
23	invisible ink.
24	Mr. Examiner, Exhibit 1 is going to be the first
25	exhibit discussed by the next witness.

1		EXAMINER CATANACH: Okay.	
2	DAVE RITTERSBACHER,		
3	the witness herein, after having been first duly sworn upon		
4	his oath,	was examined and testified as follows:	
5		DIRECT EXAMINATION	
6	BY MR. BRUCE:		
7	Q.	Would you please state your name for the record?	
8	Α.	My name is Dave Rittersbacher.	
9	Q.	Could you spell that for the court reporter,	
10	please?		
11	Α.	R-i-t-t-e-r-s-b-a-c-h-e-r.	
12	Q.	Where do you reside?	
13	Α.	I reside in Oklahoma City, Oklahoma.	
14	Q.	And who do you work for?	
15	Α.	I work for Devon Energy.	
16	Q.	What's your job with Devon?	
17	Α.	I'm a geologist working southeast New Mexico.	
18	Q.	Have you previously testified before the	
19	Division?		
20	Α.	Yes, I have.	
21	Q.	Were your credentials as an expert geologist	
22	accepted as a matter of record?		
23	Α.	They were.	
24	Q.	And are you familiar with the geology involved in	
25	the Application area?		

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Rittersbacher as an expert petroleum geologist.

EXAMINER CATANACH: Mr. Rittersbacher is so qualified.

- Q. (By Mr. Bruce) Mr. Rittersbacher, could you go back to Exhibit 1 and from a geologic standpoint discuss what's on that plat?
- A. Yes, in addition to the land information that Ken provided earlier, we also have some production information on the map in terms of cumulative oil volumes produced to date, and those are represented by green bubbles. And you can see on the legend that they're graduated in 50,000-barrel increments, getting bigger as the cumulative production increases.

The Application area, as we've discussed earlier, covers Sections 10, 11, 13, 14, 15, 22 and 23. If you look to the east of the Application area, you can see there's an area of significant cumulative production within -- I'll draw your attention now to Sections 13, 14 and 23, where the cumulative production is less, and that is because those wells have been drilled recently, in the last two years, so they have not achieved the same cumulative production values.

We do feel that the production in this area is

quite economic. We are currently drilling in this area to pursue development of these leases.

Now I'll move your attention to the production that occurs to the west of the Application area, and you can see there's an area of significant cumulative production to the west covering Sections 8, 9, 16 and 17. This is all Delaware production again. And there's production also to the southwest of the Application area.

The point I'd like to make here is that we are surrounded by economic Delaware production. We don't see any reason why these leases within the Application area cannot be fully developed, and we have posted in the dark green triangles 52 potential locations related to this production.

In addition to everything else on this map, there's also structure contours drawn on the top of the lower Brushy Canyon "B" zone, and you can see that we are going to be moving updip from that area of good production that's located just to the east of the Application area.

- Q. Could you move on to your Exhibit 5 and discuss the primary zone of interest in these wells, and could you identify where this log was taken from?
- A. Yes, I'll refer you briefly back to Exhibit 1 again. Unit Letter G of Section 23 has an orange circle around it. That's the type log that we'll be referring to

in the next two exhibits.

Exhibit 5 shows the interval that we produce out of primarily. It's within the Delaware Mountain Group, primarily from the Brushy Canyon formation, at depths that range generally from 6900 feet to 8200 feet. We drill the wells to a TD of roughly 8500 feet and TD them in the Bone Spring formation.

The type log that is Exhibit 5 shows the perforations and is a good example of how we typically complete a well in this area. You'll see that there are five perforation zones between 7018 feet and 8179 feet. We typically bring all those zones on at once, in order to help control cost.

- Q. Now moving on to Exhibit 6, again this is from the same well?
- A. It is. Now we're moving uphole into the section -- the geologic section that's really at issue in this hearing today, and this shows the Ochoan section of the Permian, which is the uppermost Permian, and it shows the interval which contains the potash beds.

Let me just take you through this part of the section.

At the surface we have the Dewey Lake formation.

And as we move down on this log, at 757 feet we encounter
the Rustler formation. And it's within the Rustler

formation that we typically set our surface casing, shown here at 850 feet.

Then we will typically drill down until we get just to the top of the Delaware Mountain Group, so we drill through the Rustler, Salado formation -- which is the formation that contains the potash minerals -- the Castille formation, and then we set the casing, as I just stated, right above the top of the Delaware Mountain Group in order to protect the potash-bearing and salt-bearing formations. In this particular well we set 8-5/8 casing at 4400 feet, just above the top of the Delaware.

- Q. And the potash-bearing formations are what, about 3000 feet above the top of the Delaware?
- A. The potash-bearing units are in the Salado formation, which on this log runs between 1094 feet and 2952 feet. The potash beds typically start about 300 feet below the top of the Salado formation and are 300 to 500 feet thick.
- Q. And again, the wells are cased and cemented through the potash-bearing formation?
- A. That's right, the 8-5/8-inch casing that we run to 4400 feet in this well is cemented back to surface, and that's our typical strategy for the intermediate casing.
- Q. Were Exhibits 1, 5 and 6 prepared by you or under your supervision?

A. 1 They were. And in your opinion, is the granting of Devon's 2 Q. Application in the interests of conservation and the 3 prevention of waste? 4 5 Α. It is. 6 MR. BRUCE: Mr. Examiner, I move the admission of 7 Devon's Exhibits 1, 5 and 6. 8 EXAMINER CATANACH: Exhibits 1, 5 and 6 will be admitted. 9 10 **EXAMINATION** 11 BY EXAMINER CATANACH: 12 Okay, so the actual potash-bearing zones are 13 about 300 -- did you say 300 feet below the top of the 14 Salado? Α. That's correct. 15 16 0. And they typically extend approximately 300 to 500 feet? 17 Below that, yes. 18 Α. Is there anything in the Castille formation? 19 There isn't any potash reserves in there? 20 21 Α. That's correct. There are salt beds, however, 22 but they are not potash-bearing. What about below the -- When you get into the 23 Q. Delaware Mountain Group, that's typically all oil and gas 24 production; is that right? 25

- A. That's correct.
- Q. Where would the Reef be in this area?
- A. We're Basinward from the development of the Capitan Reef, so the Reef does not exist in this area. We would have to move to the edges of the Basin to run into Reef facies.
 - Q. Okay.

- A. And that would be time-equivalent to the Castille.
- Q. Do you have any idea why that requirement was initially put into R-111-P about cementing the production string?
- A. Well, my assumption was, it was to protect the escape of hydrocarbon-bearing fluids into potash mineralized zones, and that's why that intermediate casing is cemented back to surface. That's my understanding.
- Q. But is there also a requirement that the production casing has to be cemented back to surface?

 Isn't that what you guys are asking?
- A. That's the gist of this particular hearing, is, are we going to be required, in addition to cementing the intermediate pipe back to surface, as a double layer of cement, have to cement the production string to surface as well?
 - Q. Well, in your opinion was there a good reason why

both strings have to be cemented?

- A. I personally don't see the reason why both of them have to be cemented.
- Q. Do you believe there's adequate production from the intermediate casing and the cement behind that?
 - A. Adequate protection?
 - Q. Of the potash reserves?
 - A. I would believe so, yes.
- Q. Do you have an opinion as to whether there may be potash mining that may encroach on this area?
- A. Well, since we have authority to drill throughout the Application area, and our intent is to continue drilling out there, it seems unlikely that there would be any potash mining, with 40-acre development that's going to occur in that area.

EXAMINATION

BY MR. JONES:

- Q. Okay, Mr. Rittersbacher, the Salado is mostly salt, but then you've got some potash interbedded in the salt; is that right?
 - A. Potash is actually a type of salt.
- Q. Okay, and then some saltbeds in the Castille.

 And this business about right below the Castille, I

 remember some -- over to the east of where you're at now,

 some actual -- I think it was Yates gas zones, right below

the salt.

Do you guys hit any gas zones --

A. We don't have the Yates formation present in this area.

However, the first sandstone at the top of the Delaware Mountain Group, in what's called the Bell Canyon formation, can be oil- and gas-productive.

- Q. Okay. When you drill your -- what is it, 12-1/2 inch? -- do you do any recording of gas, or do you have a gas --
- A. We typically put mudloggers on right after we set intermediate casing.
- Q. Right. Okay, so you don't have any mudloggers or anything but your geolograph going through this interval right here?
 - A. The salt section?
- Q. Salt section.
 - A. Yes, sir, that's correct.
- Q. Okay. What about -- Your decision exactly where to set your 8-5/8, you go down till you quit seeing salt, and then you go just a little bit further. How much further do you go?
- A. Well, we try to -- It's difficult to pick out on this log, but if you look at the blue curve, which is a neutron porosity, where I have the base salt picked there's

a distinct break between the anhydrite and the salt. 1 Oh, so you're --2 Q. What we try to do is, we map the top of the 3 Α. Delaware, try to set the pipe as close as we can to the top 4 of the Delaware. 5 6 Q. Okay, is there some anhydrite there? Did you drill any anhydrite, then, and set your pipe into some --7 Yes, we try to drill all the way through the 8 9 anhydrite till we just get to the top of the shales that 10 occur right at the top of the Delaware Mountain Group. Okay. And as far as your cementing job on your 11 Q. 8-5/8, do you ever have a lot of washouts when you drill 12 through this salt well? 13 We typically don't do too badly because we're 14 Α. using a saturated mud system when we drill this section. 15 We wouldn't drill this section with fresh water, or we 16 17 would get severe washouts that would compromise the cement 18 job. 19 Q. Is it a one-stage cement job? I'd have to refer you to our engineering witness 20 for actually how we go about cementing it. 21 Okay, will there be one? 22 Q. Yes, there will. 23 Α. MR. JONES: Okay, that's all I have. 24

Okay, I think that's all we

EXAMINER CATANACH:

have of this witness, Mr. Bruce. 1 JAMES BLOUNT, 2 the witness herein, after having been first duly sworn upon 3 his oath, was examined and testified as follows: 4 5 DIRECT EXAMINATION BY MR. BRUCE: 6 7 Would you please state your name and city of Q. residence for the record? 8 James Blount in Oklahoma City, Oklahoma. 9 10 Q. Who do you work for and in what capacity? 11 Α. Devon Energy as an operations engineer. 12 0. Have you previously testified before the 13 Division? Yes, I have. 14 Α. And were your credentials as an operations 15 Q. 16 engineer accepted as a matter of record? Α. Yes. 17 And does your area of responsibility at Devon 18 Q. include southeast New Mexico? 19 Yes, it does. 20 Α. And are you familiar with the drilling and 21 Q. 22 operating engineering applicable to today's case? Α. Yes, I am. 23 MR. BRUCE: Mr. Examiner, I tender Mr. Blount as 24 25 an expert operations engineer.

EXAMINER CATANACH: He is so qualified.

- Q. (By Mr. Bruce) Mr. Blount, let's move to your first exhibit, Exhibit Number 7, and before you discuss it, the reason we're here today is because Devon would like to avoid incurring an increased cost for these wells; is that correct?
 - A. That's correct.

- Q. And up front, what is the approximate savings per well if Devon's Application is granted?
- A. We're looking at about \$30,000 per well for the additional cement in the -- doing a two-stage job to get the cement to surface.
- Q. Okay. So Mr. Rittersbacher said there's 52 additional wells that Devon could drill in this area, so what you're looking at is, over time, a savings of what, over a million and a half dollars?
 - A. That's correct.
- Q. Okay, let's go into your Exhibit 7, and describe that in more detail for the Examiner.
- A. Okay, basically what this is is a cost differential between the different methods that we complete these wells.

The first one would be cementing the long string just up into the intermediate. What we typically do is, we frac our first zone downcasing, before the pulling unit

comes out there, so we have the savings of not having to drill out a DV tool, we have the savings of not having the pulling unit out there while we're doing the frac job, and also the savings of the fact that you have additional cement to add to get that second stage to surface.

Scenario 2 is basically an after-the-fact repair job where you could come in there and squeeze and bring that cement to surface at a later date, and that would be basically doing the same completion down the casing on the first job, and then after completing all the Delaware zones, come in, set a retainer and squeeze cement to surface via retainer, and that's a comparison cost of those two type of jobs.

- Q. Okay. So if there was a well that the Division deemed out of compliance, it is possible to go in at a later date and remedy the situation?
 - A. That's correct.
- Q. Okay. Moving to Exhibit 8, could you describe how Devon has been completing the wells --
 - A. Okay.

- Q. -- and describe what they propose to do in the future on this acreage?
- A. Okay, this is a typical wellbore diagram of almost every Delaware -- or, I'm sorry, almost every Devon well in this area. Typically the 13-3/8 is set at

approximately 850 feet, cemented to surface. The intermediate string is set at 4350 and also cemented to surface.

The long string is set at approximately 8600 foot and cemented up into the intermediate. We usually attempt an overlap of anywhere from 500 to 1000 feet in the intermediate.

- Q. In your opinion, does this adequately prevent the movement of any fluids between the zones, or --
 - A. Yes, I believe it does.
 - Q. Okay, so you don't see any safety issues here?
- A. No, I don't.

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- Q. Okay. So if the Division -- the Artesia District Office is upheld, then you would need to bring that cement all the way up to the surface in the production string; is that correct?
 - A. That's correct.
- Q. And that would cost about an additional \$30,000 per well?
- A. Right.
- Q. That's assuming no problems or no difficulties involved?
 - A. Right.
- Q. Have you seen wells out there where the cost can even be higher?

A. Yes, there's been attempts made in the past. The first well that we drilled in this last program, we attempted to bring to surface on the cement, we did a two-stage job, and we still didn't get the cement to the surface.

So you know, we're still looking at having them do a remedial cement job to get it to surface, to be in compliance.

- Q. Okay. Finally, what does your Exhibit 9 show?
- A. Exhibit 9 is basically a pictorial interpretation of the way R-111-P is being interpreted at present. And basically, it states -- in the first two wellbores, they show you can set a surface string, and you can either set a long string to TD and cement it back to surface to protect your salt string -- or to protect your salt area, or you can set a salt-protection string, cement it to surface, and then all you have to do is cover the oil-bearing zones with cement on the completion string. That's any well that is to the base of the Delaware or 5000 feet, whichever is less.

And the two on the right, the way it's currently been interpreted to us is that you can set a surface casing and a salt-protection string and cement it to the surface, and then a long string and cement it to the surface, or, the farthest right one is surface pipe, a salt-protection

string cemented to the surface, an intermediate string cemented to the surface, and then the long string can just be covered on oil- and gas-bearing zones.

Now, this interpretation of the R-111-P is different from what they've required in the past from basically every well that's been drilled out here in the 1990s.

- Q. So if I'm comparing Exhibits 8 and 9 right, what you're essentially doing is taking on Exhibit 9 the second well from the left, and what you are doing is then cementing up to connect with that other -- with the long string?
 - A. Yes, that's correct, with the intermediate.
- Q. Okay. And you'd be connecting with the intermediate, but not cementing all the way to the surface?
 - A. That's correct.
 - Q. Were Exhibits 7, 8 and 9 prepared by you?
- A. Yes, they were.

- Q. In your opinion, is the granting of Devon's Application in the interests of conservation and the prevention of waste?
 - A. Yes, it is.
- MR. BRUCE: Mr. Examiner, I'd move the admission of Devon's Exhibits 7, 8 and 9.
 - EXAMINER CATANACH: Exhibits 7, 8 and 9 will be

admitted.

EXAMINATION

3 BY EXAMINER CATANACH:

- Q. Mr. Blount, on the intermediate cement jobs, are you getting good cement jobs and good bond and everything else?
- A. We actually do not run a bond log across the intermediate zones. We have circulated cement to the surface on every one of these wells, but as far as the qualitative evaluation of a bond log, no, we have not looked at those zones.
- Q. Now, I don't remember that much about R-111-P, but there's two different -- Is it two different depths, there's shallow and there's deep wells that we're talking about?
 - A. That's correct.
 - Q. And so you'd be classified as a deep well here?
- 18 A. That's correct.
 - Q. And I'm going to have to go back and read what the requirements are, but you say this is the way that the Artesia District Office of the Division is interpreting R-111-P?
 - A. That's correct.
 - Q. In the first picture on Exhibit -- I'm sorry, the third diagram on Exhibit 9, which would be typically the

way you do it, they would require you to circulate the production string?

- A. That's correct.
- Q. Okay. Or you could set four casing strings and cement to surface three of them and --
 - A. Right.
 - Q. -- the fourth one you wouldn't have to?
- 8 A. Right.

- Q. That's their interpretation?
- 10 A. (Nods)
 - Q. Now, do you have any knowledge about how -There's a lot of wells that have been drilled in this area,
 a considerable number of wells. Do you know how those
 typically have been drilled?
 - A. Yes. Almost every one of those wells, I've looked at the completion reports on all of the wells that Devon has operated, which would be every well in the yellow on this particular -- on that map number 1, Exhibit Number 1.
 - Q. Uh-huh.
 - A. Also in yellow, Sections 9, 8 and 17 were all drilled by Santa Fe, which is part of Devon now. Those were all drilled just like the wellbore diagram on Exhibit Number 8, they're all cemented into the intermediate. This was the method of approval by the BLM and I was assuming

the State at that particular time due to the fact that, you know, they approved every one of these in the early 1990s.

There's some state leases in Section 16 that are operated by Yates. Those wells, especially the two in the south, were drilled and completed with that exact same method. And I looked at the cement records on that, and no well out there that I've looked at in any of those sections had a long string cemented to surface.

- Q. Now, not all of this acreage is federal. Is there some state acreage in here?
- A. That's correct, Section 16 is state acreage, which is in the potash enclave. The permits were clearly stamped, Secretary's -- R-111-P's potash.

Section 2 to the north is also state acreage, although it's outside of the boundary.

And Section 32 to the southwest is state acreage, and I didn't pull the completion reports on all those wells, so I'm not positive it they're the same story as in Section 16.

- Q. Now, the R-111-P area would be -- You've got a red line depicted here, so it would be everything to the southwest, would be R-111-P?
- A. Everything to the southwest and everything up into Section 15, 22, 14, 13, 23 and 26, all in that -- in the center of the map, basically.

A. I don't think I would say that, although they are tight economics. But you know, there are some better than others. Typical wells over on the east side, you know, if I knew what those reserves were before I drilled, I wouldn't have drilled them. But you know, I can't say that blanketly across the board, saying that, you know, \$30,000 will shut down my program, but it is definitely an economic impact.

- Q. Uh-huh. Well, in your opinion does that serve any additional purpose, to -- Would it give any additional protection to the potash reserves?
- A. I don't believe it would. And the other part is, you know, if there's no chance that it'll be mined, you know, I don't see the additional benefit.
- Q. What do you base that opinion on, that it may not be mined?
- A. The fact that they've commented before that they probably wouldn't mine areas that have been drilled on 40-acre spacing, the potash companies.
 - Q. I'm sorry, who has made that comment?
- A. I'm been told IMC. I haven't heard that directly, but...
- Q. They would not mine the potash in areas that have been drilled on 40 acres; is that right?
 - A. That's what I've heard.

1 EXAMINER CATANACH: What have you got, Will? I've got a few questions. 2 MR. JONES: EXAMINATION 3 4 BY MR. JONES: Mr. Blount, the wells that you've already 5 6 drilled, have you experienced any pressure or problems with the Bradenheads on those or the 8-5/8 to 5-1/2 annulus? 7 8 Α. No, sir, we haven't. 9 Q. Okay. On the 5-1/2-inch cement job that you're 10 doing to go 500 feet up above the casing shoe, do you a bond log on those? 11 Yes, we do. And we locate the top of cement with 12 that bond log. 13 Okay. And are you pretty consistent with getting 14 Q. it up to a certain depth? Have you got any zones that are 15 breaking down, down below? 16 There are some zones that break down, but 17 Α. 18 typically -- and this is one reason why we would rather 19 bring it up into the intermediate, is, when we try to get 20 it up any higher than 1000 feet inside the intermediate, there's a significant amount of breakdown, and that's --21 2.2 Q. Okay, where does that breakdown occur? We believe it's in the Bell Canyon zone, about 23 5600 feet or so, between there and 6000 feet. 24 25 Q. Okay.

A. We have not particularly identified it, because it's hard to say where it happens on the bond log. All you can do is guess, based on the fact of where it drops back to, and also on losses that we've incurred during drilling.

Q. Okay.

- A. So we're making some assumptions on that.
- Q. Okay. But you are running a DV tool, even to get 500 feet up?
- A. We're not currently. There were several wells that were done in the past, in the mid-1990s that were done. And like I say, this is a cost-saving mechanism we've developed to try to avoid having to spend that money for the DV tool. Our completion techniques are a little different than what we did back then.
- Q. Okay. What is the -- Without a DV tool, what's the weight of your -- what's the pounds per gallon of your cement that you -- or the type cement that you -- your lead cement and your tail cement on your 5-1/2-inch?
- A. I'm not sure I have that information available, but typically our tail is about a 14-pound-per-gallon system and our lead is about a 12-pound-per-gallon.
 - Q. Okay.
- A. Now, I will say, the ones we drilled last year that were under the requirements of R-111-P, we were actually trying to comply. We may have made a comment

earlier that, you know, we didn't comply on any of that.

We actually pumped some ultralight cements that were 9-1/2pound cements and attempted to get those, and they turned
out to be an extremely expensive alternative. It was
running us \$50,000 to \$60,000 to attempt a long string
cement job, as opposed to \$20,000 that it would cost to do
just conventional cements bringing it up into the
intermediate.

But we tried to do that in lieu of the stage cement, and we had minimal success. We got one of them up within 500 feet of the surface, and that was our best attempt. Most of them were typically 2000 feet or so.

- Q. Okay. What about the 8-5/8? The casing itself on 8-5/8, you're using standard threads on your casing?
 - A. Yes, long thread.
- Q. That's 8-round --
- 17 A. Yes.

- 18 Q. -- threads?
- 19 A. Right.
 - Q. And what about if you did use any better threads, how much would that drive the cost up from your 8-5/8?

 Just an estimate?
 - A. I haven't run numbers on that, but I'm assuming it would be fairly significant because the buttress is going to run your prices up considerably, and when you're

1 looking at 4500 foot of pipe, that would be a -- I'm just 2 venturing a guess -- somewhere in the \$40,000 to \$50,000 3 range. What about the cement job on the 8-5/8? 4 Q. Okay. 5 What do you typically lead and tail with there? A. Once again, I can't tell you the exact, but I 6 7 know it's a light cement and it's about a 13-pound on our lead and it's about a 14.5, approximately, on the tail. 8 9 And you usually circulate it just fine? 10 Α. We've circulated every string on the long string. Any that we have not we've one-inched to the surface, but 11 that's been very rare. 12 MR. JONES: Okay, that's all I have. 13 FURTHER EXAMINATION 14 BY EXAMINER CATANACH: 15 Mr. Blount, what method are you guys using to 16 Q. produce these wells in this area? 17 18 Α. They're on rod pump. So generally do you keep the wells pumped off? 19 Q. After the first year, typically. You know, early 20 Α. on they maintain a fairly high fluid level until we get to 21 an equilibrium state where they're pumped down enough to 22 where you're pumping basically what your pump capacity is. 23 You say a fairly high fluid level. Do you know 24

what that might be in the wells?

It varies anywhere from all the way to the Α. surface down to about 5000 feet. Like I say, and it's -- I mean, we shoot fluid levels or very gassy wells early on, you know, so it's real hard to get an accurate number on the fluid levels. EXAMINER CATANACH: Did you have anything else?

FURTHER EXAMINATION

MR. JONES: One more question.

BY MR. JONES:

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- Mr. Blount, the treatments you use -- I notice Q. you're perforating a big long section on your Delaware in your fracture.
 - Yes, sir. Α.
 - Are you frac'ing downcasing?
- The first job, we frac'd downcasing. That would Α. be the lower Brushy from approximately 8100 to 8300. typical upper zones, we're typically frac'ing downcasing, the zones of 7000 foot. I mean, I'm sorry, downtubing.
- Q. Okay, on the upper zones. Okay. So your pressures are higher on the upper zones? Is that why you're going downtubing?
- A. Not necessarily, we typically try to limit our frac growth on the upper zones, and they've been very low rate fracs. So it's just mechanically an easier frac to pull off when you're watching it downtubing.

1	Q. What about the pressures on your lower frac
2	downcasing?
3	A. The pressures typically are running about 1000
4	pounds during our frac job, and they may get as high as
5	1500 but not much higher than that, typically.
6	Q. So you don't use a casing wellhead isolation tool
7	or
8	A. No.
9	Q. You don't need one then
10	A. No.
11	Q just to
12	A. We just rig up a, you know, BOP and fracture
13	straight down the casing.
14	MR. JONES: All right, thank you.
15	FURTHER EXAMINATION
16	BY EXAMINER CATANACH:
17	Q. A couple more. Mr. Blount, currently there are
18	no waterflood operations in this area; is that correct?
19	A. That's correct.
20	Q. Do you anticipate that there may be at some time?
21	A. There's a possibility that the Cherry Canyon out
22	there could be attempted a flood.
23	Q. Okay. Do you guys monitor the casing annulus in
24	these wells at all, for any pressure or any
25	A. Which casing annulus in particular? I mean

- Q. Production casing.
- A. Between the 5-1/8 and 8-5/8?
- Q. (Nods)

- A. Not that I'm aware of, I don't remember putting any gauges on those.
- Q. So you don't know if you've had any problems with any kind of pressure buildup or anything on that annulus?
 - A. That's correct.

EXAMINER CATANACH: I think that's all I have.

MR. BRUCE: Mr. Examiner, just a couple of observations. With respect to your question about potash mining, I think if you look at Exhibit 1, the main area of the potash enclave, the potash company has always resisted having any wells drilled in those areas. I think at hearings before the Division they've always said that even one or two wells in an area may make it unsafe for mining. In this particular Application area, at least a good number of these wells are going to be drilled. Therefore, I don't think -- I think it's reasonable to say this area will never be mined, based on what the potash companies have said in the past. And therefore I don't think there's any issue regarding safety or waste of potash.

The second thing is, if you look at Exhibit 2,

Mr. Examiner, you asked about waterfloods. I think the

only one I -- the closest one I know of in the Delaware at

this time is just to the east of the WIPP site. 1 2 Producing -- It's not a waterflood, it's a pressure-3 maintenance project that Pogo Producing has. **EXAMINER CATANACH:** Okay. 4 5 MR. BRUCE: That's it, Mr. Examiner. EXAMINER CATANACH: For the record, Mr. Bruce, my 6 7 attorney, Mr. Brooks, has advised me that he was involved early on with some -- with this issue between the Division 8 and Devon. I quess this has been discussed previously to 9 10 the hearing, and he felt compelled to withdraw himself from the case, so that's not why he's in attendance. 11 MR. BRUCE: Mr. Examiner, when this issue reached 12 a head, starting in June of this year, Mr. Gray and another 13 representative of Devon and I met with the Division 14 Director and Mr. Brooks to discuss how to resolve this 15 16 issue, so that's probably what he's referring to. EXAMINER CATANACH: He will probably stay out of 17 18 this process then. Anything further in this case? MR. BRUCE: No, sir. 19 EXAMINER CATANACH: Okay, there being nothing 20 21 further in this case, Case 12,961 will be taken under 22 advisement. (Thereupon, these proceedings were concluded at 23 a complete record of the proceedings the Examiner hearing of Case No. 129 24 10:52 a.m.) heard by the on Abidente 25 Examile

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 November 22nd, 2002.

STEVEN T. BRENNER

CCR No. 7

My commission expires: October 16th, 2006

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 DEVON ENERGY PRODUCTION
COMPANY, L.P., FOR AN EXCEPTION TO
DIVISION ORDER NO. R-111-P, EDDY COUNTY,
NEW MEXICO

CASE NO. 12,961

CASE NO. 12,961

CASE NO. 12,961

COMPANY, L.P., FOR AN EXCEPTION TO
DIVISION ORDER NO. R-111-P, EDDY COUNTY,

NEW MEXICO

CASE NO. 12,961

OFFICIAL EXHIBIT FILE

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

November 14th, 2002

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH,
Hearing Examiner, on Thursday, November 14th, 2002, at the
New Mexico Energy, Minerals and Natural Resources
Department, 1220 South Saint Francis Drive, Room 102, Santa
Fe, New Mexico, Steven T. Brenner, Certified Court Reporter
No. 7 for the State of New Mexico.

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