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:

ORIGINAL

APPLICATION OF COG OPERATING, LLC FOR A NONSTANDARD SPACING AND PRORATION UNIT AND COMPULSORY POOLING, EDDY COUNTY, NEW MEXICO.

CASE NO. 15760

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

July 20, 2017

Santa Fe, New Mexico

BEFORE: WILLIAM V. JONES, CHIEF EXAMINER DAVID K. BROOKS, LEGAL EXAMINER

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This matter came on for hearing before the New Mexico Oil Conservation Division, William V. Jones, Chief Examiner, and David K. Brooks, Legal Examiner, on Thursday, July 20, 2017, at the New Mexico Energy, Minerals and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

REPORTED BY: Mary C. Hankins, CCR, RPR

New Mexico CCR #20

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Page 3 (8:49 a.m.) 1 EXAMINER JONES: Call Case Number 15760, 2 application of COG Operating, LLC for a nonstandard 3 4 spacing and proration unit and compulsory pooling in 5 Eddy County, New Mexico. 6 Invite appearances. Jordan Kessler, from the MS. KESSLER: 7 Santa Fe office of Holland and Hart, on behalf of the 9 Applicant. 10 EXAMINER JONES: Any other appearances? 11 MS. KESSLER: Two witnesses today, 12 Mr. Examiner. 13 EXAMINER JONES: Will the court reporter please swear the witnesses? 14 Will the witnesses please stand? 15 16 (Mr. Dirks and Ms. Pettijohn sworn.) 17 MS. KESSLER: I'll call my first witness. STUART DIRKS, 18 after having been first duly sworn under oath, was 19 questioned and testified as follows: 20 21 MS. KESSLER: May I proceed? EXAMINER JONES: Mr. Dirks. 22

THE WITNESS: How are you?

23

24

25

Page 4 DIRECT EXAMINATION 1 BY MS. KESSLER: 2 3 Please state your name for the record and tell Q. the Examiners by whom you are employed and in what 4 5 capacity? 6 Α. Stuart Dirks, and I'm employed by COG 7 Operating, LLC as a landman. 8 Have you previously testified before the Q. 9 Division? 10 A. Yes, I have. Were your credentials as a petroleum landman 11 Q. 12 accepted and made a matter of record? 13 Α. Yes, they were. 14 Are you familiar with the application that's 15 been filed in this case? 16 Yes, I am. A. 17 And are you familiar with the status of the 18 lands in the subject area? 19 Α. Yes, I am. MS. KESSLER: Mr. Examiners, I would tender 20 Mr. Dirks as an expert in petroleum land matters. 21 22 EXAMINER JONES: He is so qualified. 23 Q. (BY MS. KESSLER) Mr. Dirks, will you please 24 turn to Exhibit 1 and explain what COG is seeking by

25

this application?

- 1 A. Exhibit 1 is our C-102 for our proposed Bone
- 2 Yard 11 Fee #16H well. We seek the formation of a
- 3 240-acre nonstandard spacing and proration unit for the
- 4 drilling of our well comprising the east half of the
- 5 west half of Section 11 and the east half of the
- 6 southwest quarter of Section 2 in 20 South, 25 East.
- 7 And we seek the pooling of mineral
- 8 interests within the North Seven Rivers-Glorieta-Yeso
- 9 Pool in our proposed unit, and we ask that COG
- 10 Operating, LLC be operator.
- 11 Q. Is the pool that you mentioned in the Seven
- 12 Rivers --
- 13 EXAMINER BROOKS: I'm sorry. I'm having
- 14 trouble getting the right paper. Is this Case 15760?
- MS. KESSLER: Yes.
- 16 EXAMINER BROOKS: Okay. Good. I'm not as
- 17 stupid as I thought.
- 18 Q. (BY MS. KESSLER) Mr. Dirks, is the N. Seven
- 19 Rivers-Glorieta-Yeso Pool governed by Division statewide
- 20 setbacks?
- 21 A. Yes.
- 22 Q. And Division rules for oil wells; is that
- 23 correct?
- 24 A. Yes.
- 25 Q. Will this well comply with the 330-foot setback

- 1 requirement?
- 2 A. Not as planned, not as currently planned.
- 3 Q. Did COG apply for approval of an unorthodox
- 4 location administratively?
- 5 A. Yes, we did.
- 6 Q. And that application is pending approval,
- 7 correct?
- 8 A. That's correct. It's past the notification
- 9 period, and no objections have been filed.
- 10 Q. Has an APD been filed for this well?
- 11 A. Yes, it has.
- 12 Q. And is the API number noted on this C-102?
- 13 A. Yes, it is.
- 14 O. What is the character of these lands?
- 15 A. They are all fee.
- 16 Q. Are there any depth severances in this pool?
- 17 A. No, there are not.
- 18 Q. Let's look at Exhibit 2. What is this exhibit?
- 19 A. The first page of the exhibit is a plat showing
- 20 our proposed spacing unit, and then the second page is a
- 21 breakdown of the mineral ownership. The top half is by
- 22 tract, and the bottom half is unit interest.
- 23 Q. What interests do you seek to pool through this
- 24 exhibit?
- A. We seek to pool the unmarketable title and the

- 1 noncommitted owners.
- 2 Q. And can you please explain why you seek to pool
- 3 unmarketable title?
- 4 A. We have two owners with unmarketable title.
- 5 There is no probate in New Mexico. That is why we seek
- 6 to pool them.
- 7 Q. Have you been able to identify the heirs that
- 8 you think own an interest in this spacing unit?
- 9 A. We have identified all the heirs that -- let me
- 10 rephrase. We think we have identified all the heirs.
- 11 Yes.
- 12 Q. And were you able to lease all the heirs that
- 13 you have identified as having an interest?
- 14 A. They were all leased to COG.
- 15 Q. And they were all locatable?
- 16 A. That's correct.
- 17 Q. So looking at Exhibit 2, it looks like you seek
- 18 to pool any interest that is either italicized or
- 19 bolded; is that correct?
- 20 A. That is correct.
- 21 Q. Is Exhibit 3 a copy of the well-proposal letter
- 22 that you sent to the working interest owners?
- 23 A. Yes, it is.
- Q. On what date was this letter sent?
- 25 A. May 4th.

- 1 Q. Did it include an AFE?
- 2 A. Yes, it did.
- Q. And are the costs on the AFE consistent with
- 4 what COG has incurred for drilling similar horizontal
- 5 wells?
- 6 A. Yes.
- 7 Q. What additional efforts did you undertake to
- 8 reach agreement with the parties that you seek to pool
- 9 on Exhibit 2?
- 10 A. We have contacted every owner. Some of them
- 11 wished to participate but have not yet signed our OA.
- 12 One wishes to participate under the pooling order. One
- 13 wishes to go nonconsent under the pooling order. One of
- 14 them has not yet made a decision, and the rest of them,
- 15 we are negotiating a term assignment. They want a term
- 16 assignment with us.
- 17 Q. And in the event that you reach agreement with
- any of those parties, will you notify the Division?
- 19 A. Yes.
- 20 Q. Have you estimated the overhead and drilling
- 21 costs for drilling and producing this well?
- 22 A. Yes.
- Q. What are those costs?
- A. 7,000 a month while drilling, \$700 a month
- 25 while producing.

- 1 Q. Are those costs in line for what other
- operators in the area charge for similar wells?
- 3 A. Yes, they are.
- 4 Q. Do you ask that those costs be incorporated
- 5 into any order resulting from this hearing?
- 6 A. Yes.
- 7 Q. Do you ask that the costs be adjusted in
- 8 accordance with the appropriate accounting procedures?
- 9 A. Yes.
- 10 Q. For uncommitted working interest owners, do you
- 11 request that the Division impose a 200 percent risk
- 12 penalty?
- 13 A. Yes.
- 14 Q. Let's look at Exhibit 4. Do you also seek to
- pool nonparticipating royalty interest owners?
- 16 A. That is correct.
- 17 Q. Why is that?
- 18 A. So that we can adjust their interest in our
- 19 proposed unit in accordance with the surface acres that
- 20 they contribute to the unit.
- 21 Q. Does Exhibit 4 show NPRI owners by tract?
- 22 A. It shows it by tract and also by unit.
- 23 Q. And it looks like you've bolded, italicized or
- 24 underlined owners that you seek to pool. Can you please
- 25 explain how you put together this exhibit?

- 1 A. Italicized owners are uncommitted. Bolded is
- 2 unmarketable title, and then underlined are unlocatable.
- 3 Q. And you seek to pool all of those?
- A. Yes. That is correct.
- 5 Q. NPRI owners are not cost-bearing owners; is
- 6 that correct?
- 7 A. That is correct.
- 8 Q. So they will not be subject to a 200 percent
- 9 risk penalty?
- 10 A. That is correct.
- 11 Q. Did you send a letter to each of the NPRI
- 12 owners requesting that they ratify a lease --
- 13 A. Yes. That's correct.
- 14 Q. Is that included as Exhibit 5?
- 15 A. Yes.
- 16 Q. Were all of the NPRI owners locatable?
- 17 A. No, they were not.
- 18 Q. Can you please describe your efforts to locate
- 19 these parties?
- 20 A. A check of the records, lots of phone calls and
- 21 Internet search.
- 22 Q. And you reviewed the county in which -- the
- 23 county records in which the well is located?
- 24 A. Yes. Yes. We actually have a title opinion.
- Q. And you said phone calls. Did you, in fact,

- 1 get in touch with some family members who have referred
- 2 you to new phone numbers that you're addressing?
- 3 A. Correct.
- Q. But most of these folks were just not
- 5 locatable?
- 6 A. Correct.
- 7 Q. In your opinion, did you conduct a diligent
- 8 search to locate NPRI owners who were unlocatable?
- 9 A. Yes, we did.
- 10 Q. Is Exhibit 5 -- I'm sorry -- Exhibit 6 an
- 11 affidavit prepared by my office, with attached letters,
- 12 providing notice of the hearing to the parties that you
- seek to pool, as well as the offset operators or lessees
- 14 of record?
- 15 A. Yes.
- 16 Q. And did you publish notice directing to
- 17 unlocatable parties?
- 18 A. Yes.
- 19 Q. Is that included as Exhibit 7?
- 20 A. Yes.
- 21 Q. Were Exhibits 1 through 5 prepared by you or
- 22 compiled under your direction and supervision?
- 23 A. Yes, they were.
- 24 MS. KESSLER: Mr. Examiners, I'd move
- 25 admission of Exhibits 1 through 7, which include my two

- 1 affidavits.
- 2 EXAMINER JONES: Exhibits 1 through 5 and
- 3 Exhibits 6 and 7 are admitted.
- 4 (COG Operating, LLC Exhibit Numbers 1
- 5 through 7 are offered and admitted into
- 6 evidence.)
- 7 CROSS-EXAMINATION
- 8 BY EXAMINER JONES:
- 9 Q. Okay. So these what you call NPRIs, are they
- 10 people that -- either overriding royalties, or are they
- 11 people that have leases without pooling clauses or
- 12 something?
- 13 A. They are a royalty that's been severed out.
- 14 They don't have executive rights. They don't get paid
- 15 bonus or anything, so they're subject to the lease that
- 16 is executed by the person with executive rights.
- 17 Q. Okay.
- 18 CROSS-EXAMINATION
- 19 BY EXAMINER BROOKS:
- 20 Q. Looking at Exhibit 3 -- or is it 2? I don't
- 21 know if I'm behind or in front of the -- I got a bit
- 22 blind. So it's Exhibit 2, the owners listing. Are
- 23 these people owners of -- well, the unknown heirs, I
- 24 assume they're probably unleased mineral interests.
- 25 Would that be accurate? They don't own anything or even

- 1 exist?
- 2 A. We believe we've identified the heirs, and we
- 3 have leased those people.
- Q. Yeah. So that's just a precautionary thing?
- 5 A. Yes. That's correct.
- 6 Q. But these estates would own unleased mineral
- 7 interests or interests in the lease?
- 8 A. We believe that -- that we would have the
- 9 leasehold interest under our leases, unless -- unless
- 10 there is an heir out there we don't know about. And
- 11 that's why we force pool.
- 12 Q. Well, what I'm trying to clarify is all the
- 13 people you're seeking to force pool, are they owners of
- 14 undivided interests in leases, or are they unleased
- 15 mineral owners?
- 16 A. The heirs and devisees in Tracts 2, 3 and 4?
- 17 Q. Yeah. All the people you're trying to pool.
- 18 A. Oh, everybody? Oh, other than the heirs?
- 19 Q. Yeah.
- 20 A. I'm sorry.
- 21 Q. You said that -- and I was unable to hear for
- 22 sure exactly what abbreviation you said, NPRI, which you
- 23 said -- I assume that means nonparticipating royalty
- 24 interests, and I know what that is in principle. So
- 25 they would not own any interest -- they would be neither

- 1 unleased mineral owners nor -- nor owners of lease
- 2 interests, and they would not be -- they would be pooled
- 3 royalty interests and not pooled working interests. And
- 4 there are some of those in here, right?
- 5 A. They're all listed on Exhibit 4.
- 6 O. Exhibit 4?
- 7 A. Yes, sir.
- 8 Q. Well, there, again, I'm confused by -- now,
- 9 Exhibit 4 looks like it's just -- oh, yeah, Exhibit 4.
- 10 Yeah.
- 11 EXAMINER JONES: So can you say again
- 12 which -- you know, you've got bold, and you've got
- 13 underlined. And you said that on the record. So --
- 14 THE WITNESS: Yes, sir. At the bottom of
- 15 the last page, I've got that notated.
- 16 EXAMINER JONES: Oh, okay. Thank you.
- 17 There are multiple pages.
- 18 Q. (BY EXAMINER BROOKS) This is -- in other words,
- 19 the list on page 2 of Exhibit 2 is not a full list of
- 20 the parties being pooled, right?
- 21 A. Exhibit 2, page 2?
- 22 Q. Yeah.
- 23 A. That's the leasehold owners I'm trying to force
- 24 pool, plus the unmarketable title.
- Q. Okay. So all the people listed on Exhibit 2,

- 1 page 2 are owners of undivided interests in the leases?
- 2 A. Yes, sir.
- Q. Okay. Now, then, go on to Exhibit 4 -- Exhibit
- 4 4, page 2. The people on Exhibit 4, are they all
- 5 nonparticipating royalty interests, or are some of
- 6 them --
- 7 A. They are all nonparticipating royalty
- 8 interests.
- 9 Q. There are no mineral interests on the tract?
- 10 A. No, sir.
- 11 Q. That you know of anyway?
- 12 A. That we know of.
- 13 Q. Okay. Now, from the complexity of the
- 14 ownership, I'm assuming this is all fee acreage; is that
- 15 correct?
- 16 A. Yes, sir. That's correct.
- 17 Q. And there are no depth severances within the
- 18 Glorieta-Yeso interval?
- 19 A. That's correct.
- 20 Q. Okay. And everybody that you haven't been able
- 21 to find, you've served by publication, correct?
- 22 A. Yes, sir.
- 23 Q. And which exhibit is -- oh, 7 is your Affidavit
- of Notice -- is your publication, right?
- 25 A. Yes.

- 1 Q. Now, what efforts were undertaken to locate the
- 2 parties for whom you did not have addresses?
- A. Well, we started with the title opinion, which
- 4 was a quick check of the records, lots of phone calls,
- 5 Internet searches. I've got a person assigned to this
- 6 almost full time working on this.
- 7 Q. Well, I would assume with as many force
- 8 poolings that you do that you have someone who has
- 9 become fairly expert in trying to locate unlocatable
- 10 interests.
- 11 A. Especially with these NPRI people.
- 12 Q. Yeah. And the ones that you didn't send
- 13 certified mail to, are they -- after all the searching,
- 14 you weren't able to find them?
- 15 A. Yes, sir.
- 16 Q. Thank you.
- 17 RECROSS EXAMINATION
- 18 BY EXAMINER JONES:
- 19 Q. So the people which you did find and you
- 20 offered what kind of -- can you talk about what kind of
- 21 deal you offered them?
- 22 A. The leases actually have pooling. So we asked
- 23 them to ratify the lease, and then that way we can just
- 24 pool them with a unit designation.
- MS. KESSLER: That's specifically for the

Page 17 NPRI owners? 1 2 THE WITNESS: Yes. Yes. 3 MS. KESSLER: Were you also asking the 4 question, Mr. Examiner, about the other interest owners? EXAMINER JONES: Yes. 5 6 THE WITNESS: Oh, I'm sorry. Back on Exhibit 2 --EXAMINER JONES: Yes. 8 9 THE WITNESS: -- those people, we asked them to join in the well or offered to take a term 10 assignment from them. 11 EXAMINER BROOKS: Offered to take term 12 assignments, did you say? 13 THE WITNESS: Yes, sir. 14 EXAMINER BROOKS: From all of those people 15 16 who owned interest in the leases but who did not -- who were not otherwise committed? 17 18 THE WITNESS: Yes, sir. EXAMINER BROOKS: Did not elect to 19 20 participate under the JOA? THE WITNESS: Yes, sir. 21 22 EXAMINER JONES: That's a lot of work for a 23 Paddock well (laughter). 24

25

1 CONTINUED RECROSS EXAMINATION

- 2 BY EXAMINER JONES:
- 3 Q. So how much of a rush are you for this one?
- A. It's on our drilling schedule for October 2nd.
- 5 Q. Okay. And what about the NSL? Is there a
- 6 problem with it or --
- 7 A. We do not foresee a problem. The notice period
- 8 is over, and nobody objected. So we're just waiting for
- 9 the administrative approval.
- 10 Q. Nobody's contacted you about an issue with it?
- 11 A. Nobody has.
- 12 Q. I've got a note that there is an issue with the
- permitting in Artesia, and I'm not -- I'm sorry, I
- 14 didn't write down exactly what's going on. But they
- 15 need to update something in our records there, so you
- 16 might check it and see -- see if they have the right
- well locations and the right acreage location.
- 18 A. Mr. Examiner, originally, our application was
- 19 for a one-mile lateral.
- 20 **Q.** Okay.
- 21 A. And we filed a sundry for one-and-a-half, so it
- 22 might be related to that.
- Q. Okay. But it's in the same Paddock interval?
- 24 A. Yes.
- 25 Q. So it should be in the same pool, so it

- 1 shouldn't require a new C-101. It should require just a
- 2 sundry, I would think.
- Now, there are rules that bar you from
- 4 extending the drilling.
- 5 So, anyway, it's easy to go on our site and
- 6 check it out.
- 7 That's it.
- 8 MS. KESSLER: I'll call our geologist.
- 9 EXAMINER JONES: Okay.
- 10 THE WITNESS: Thank you.
- 11 EXAMINER JONES: Thank you.
- 12 CANDICE PETTIJOHN,
- after having been previously sworn under oath, was
- 14 questioned and testified as follows:
- 15 DIRECT EXAMINATION
- 16 BY MS. KESSLER:
- 17 Q. Please state your name for the record and tell
- 18 the Examiners by whom you're employed and in what
- 19 capacity?
- 20 A. My name is Candice Pettijohn, and I'm employed
- 21 by COG Operating, LLC as a geologist.
- 22 Q. Have you previously testified before the
- 23 Division?
- 24 A. Yes.
- 25 Q. Were your credentials as a petroleum geologist

- 1 accepted and made a matter of record?
- 2 A. Yes.
- Q. Are you familiar with the application that's
- 4 been filed in this case?
- 5 A. Yes.
- 6 Q. And have you conducted a geologic study of the
- 1 lands that are the subject of this application?
- 8 A. Yes.
- 9 MS. KESSLER: Mr. Examiners, I would tender
- 10 Ms. Pettijohn as an expert in petroleum geology.
- 11 EXAMINER JONES: Okay. Thank you. She is
- 12 so qualified.
- Q. (BY MS. KESSLER) Let's look at Exhibit 8. Will
- 14 you please identify this exhibit for the Examiners?
- 15 A. Okay. This is a subsea structure map of the
- 16 top of the Paddock contoured on the interval of 100
- 17 feet, and it shows the structure dipping from the
- 18 northwest to the southeast. In yellow is the proposed
- 19 spacing unit for this well, and then in red is the well
- 20 in question. And it's a lateral Paddock well.
- 21 Q. Have you also identified Paddock producers and
- 22 Blinebry producers in the area?
- 23 A. Yeah. The red and blue dots indicate Paddock
- 24 and Blinebry production.
- 25 Q. Have you found any structural or geologic

- 1 impediments to drilling horizontal wells?
- 2 A. No. There is no faulting, no stratigraphic
- 3 pinch-outs and no geologic impediments for horizontal
- 4 drilling.
- 5 O. What is Exhibit 9?
- 6 A. This map indicates the wells that will be on
- 7 the following cross section. These three wells are
- 8 representative of the spacing unit.
- 9 Q. These three wells for the cross-section
- 10 exhibit?
- 11 A. Correct.
- 12 Q. And Exhibit 10 is your corresponding
- 13 cross-section exhibit?
- 14 A. Yes.
- Q. Can you please walk us through this exhibit?
- 16 A. Yeah. In yellow is the Glorieta Formation. In
- 17 green is the Paddock. This cross section is flattened
- 18 on the Paddock, so that's the datum. In red, off to the
- 19 left, is the proposed lateral interval for the well.
- 20 The Paddock here has a continuous thickness indicating
- 21 there is no faulting or geologic impediments.
- 22 Q. No major thickening or thinning in the
- 23 formation where the lateral is planned?
- 24 A. Correct.
- 25 Q. Based on your geologic study, I believe you

- 1 previously said that you identified any geologic
- 2 impediments to developing this area with horizontal
- 3 wells?
- 4 A. Yes.
- 5 Q. In your opinion, can this area be efficiently
- 6 and economically developed by horizontal wells?
- 7 A. Yes.
- 8 Q. Do you believe that each tract in the proposed
- 9 nonstandard spacing unit will contribute more or less
- 10 equally to the production of the well?
- 11 A. Yes.
- 12 Q. And in your opinion, will the granting of COG's
- 13 application be in the best interest of conservation, for
- 14 the prevention of waste and the protection of
- 15 correlative rights?
- 16 A. Yes.
- Q. Were Exhibits 8 through 10 prepared by you?
- 18 A. Yes.
- 19 MS. KESSLER: Mr. Examiner, I would move
- 20 admission of Exhibits 8 through 10.
- 21 EXAMINER JONES: Exhibits 8 through 10 are
- 22 admitted.
- 23 (COG Operating, LLC Exhibit Numbers 8
- through 10 are offered and admitted
- 25 into evidence.)

1 CROSS-EXAMINATION

- 2 BY EXAMINER JONES:
- 3 Q. Why a mile-and-a-half?
- 4 A. We had some issues with the surface. We
- 5 couldn't go on lease because there are navigable waters
- 6 at the north end and south end of the lease, and going
- 7 off lease to the north, we couldn't come to an agreement
- 8 with the surface owner. And then to the south -- I
- 9 don't remember why, but -- oh, yeah, because we would
- 10 have to put our facilities underneath the navigable
- 11 waters, which was not -- uneconomic. And the next best
- 12 option was a mile-and-half. And the TVD here is not
- 13 adequate enough to drill a two-mile lateral.
- 14 Q. Otherwise, you might have drilled longer, then?
- 15 A. Yeah.
- 16 Q. Okay. Are there any markers in this Paddock
- 17 that is -- that the industry geologists have a name for
- 18 or anything? In other words, any little anhydrite
- 19 members or anything that -- there is nothing?
- 20 A. No.
- Q. What's -- what's the usual thickness of the
- 22 Paddock out here?
- A. In this area of the shelf, it's around 700
- 24 feet.
- 25 **Q. 700.**

- 1 A. Uh-huh.
- 2 Q. So a few years ago, there were debates about
- yertical versus horizontal wells in the Paddock. Is
- 4 that still debated?
- 5 A. No.
- 6 Q. Not anymore?
- 7 A. No.
- 8 Q. It's all horizontal now?
- 9 A. Yes. I don't think a vertical well has been
- 10 drilled here for a couple of years.
- 11 Q. Do you drill any pilot holes?
- 12 A. We haven't recently, but we have in the past.
- 13 Q. Do you recommend any more to delineate any of
- 14 your acreage?
- 15 A. Yeah. If economically feasible, I would.
- 16 Q. I can't imagine a geologist not wanting a pilot
- 17 hole.
- 18 A. Me neither.
- 19 Q. Good log and a core and all that.
- I don't have any more questions.
- 21 CROSS-EXAMINATION
- 22 BY MR. BROOKS:
- 23 Q. You used some initials, as people always do
- 24 these days. The TVD, did you say, was not adequate for
- 25 a two-mile well. What does that stand for?

heard by me on

25